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**WHOLESALE ELECTRICITY MARKET APPROACH,
PROCEDURES AND IMPLEMENTATION PLAN**

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Efficiency and Market Reform Project
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CHAPTER 1

INTRODUCTION

The progressive restructuring of its electric industry has made Kazakhstan a leader in electricity sector reforms among the countries of the Former Soviet Union. Since independence in 1992, the Government has already 1) unbundled the vertically integrated electricity industry into separate generation, transmission, and distribution entities, 2) privatized many of the thermal generation plants and several of the distribution companies to strategic investors, and 3) introduced competition in electricity production and supply. These reforms are moving Kazakhstan away from the centralized, state-dominated structure of the past, towards a market-based energy industry that more closely resembles the energy markets in other developed countries. These changes have attracted leading international strategic investors to both the electricity generation and distribution industries in Kazakhstan, resulting in a significant increase in foreign investment. However, the reform process stalled over the past 18 months, placing the future investment and modernization of the industry in jeopardy.

In 1996–1997, the Ministry of Energy moved quickly to complete the electricity reform process, and with the assistance of USAID/Hagler Bailly, developed a comprehensive set of market rules to govern the wholesale trading of electricity within the newly unbundled industry structure. However, with the restructuring of the Ministry of Energy at the end of 1997, this effort was stopped before it could be completed. The wholesale electricity market in Kazakhstan has suffered over the past year from the lack of a clear set of wholesale market rules and procedures governing the trade and payment for electricity as well as the provision of related system services. The result has been an increase in law suits filed by wholesale market members against the transmission company and other market participants in Kazakh and international courts, the needless loss of electricity supply due to contractual and other disputes, and a growing sense of uncertainty among electricity investors concerning the viability of the Kazakh power industry.

The purpose of this report is to describe a proposed plan for moving the wholesale market reforms forward by developing and adopting a comprehensive set of wholesale market rules. These market rules are designed to remove much of the uncertainty currently plaguing the industry by providing clear and specific wholesale market procedures, as well as definitions of the rights and responsibilities of the various types of market members. The goal of this process is to establish a transparent framework for wholesale market operations that is governed by the members of the market themselves. The establishment of a clear and mutually agreed upon market framework among industry members should reduce investor uncertainty, providing for a more stable business environment. The adoption of a transparent market structure will also provide members with dispute resolution mechanisms other than the court system, reducing the resources spent on litigation. However, in order to develop a set of market rules, there must be

agreement on the basic principles and direction for the development of the wholesale electricity market in Kazakhstan

Based upon international experience in unbundled wholesale markets, there are a common set of elements that can be identified in the most successful wholesale electricity markets. These elements include

- 1 Centralized dispatch and market operations,
- 2 Open access to the transmission and distribution networks for all market members,
- 3 Bilateral contracts for baseload generation,
- 4 Spot market to match short-term demand and supply through a market mechanism,
- 5 Losses metered regularly and allocated by an agreed upon method,
- 6 Independent transmission system operator to manage wholesale power flows,
- 7 Reserve power agreements to provide system reliability,
- 8 Ancillary services for frequency and voltage control provided by the system operator,
- 9 Settlement mechanism for tracking power and payment flows in the market,
- 10 Governing body to develop and implement necessary changes in the future structure and operations of the market

The current wholesale market structure in Kazakhstan falls short of providing most of these basic elements to market members. Centralized dispatch is absent due to payment problems within the wholesale market with generators typically self-dispatching up to the limit of their existing bilateral contracts. The central dispatch center generally acts only when load shedding is required to stabilize the system. Open access is specified in existing regulations, but conflicts of interest exist since the transmission company also controls certain generation and distribution enterprises. While there are bilateral contracts for baseload generation, there is no organized spot market to balance short-term supply and demand. Losses are metered where meters exist, but there are no centralized daily figures provided to market members, only monthly readings. There is also a lack of a coordinated method of contracting for and providing reserve capacity and ancillary services, resulting in system reliability failures. Due to the lack of a centralized settlements mechanism, generators are responsible for seeking payment from each individual customer, discouraging suppliers to generate above the levels specified in their bilateral contracts.

A major reason for the shortcomings in the wholesale electricity market in Kazakhstan is the fact that there is no clearly defined unaligned governing body to oversee the market development process. While the Ministry of Energy, Industry and Trade has governmental jurisdiction over the electricity industry, it has delegated responsibility for the creation of wholesale market rules to the national transmission company (KEGOC). The delegation of market rules creation to KEGOC has proved problematic due to KEGOC's conflict of interest as a generation and distribution owner competing directly with other market participants. Given the presence of both governmental and private sector participants in the wholesale electricity sector, it is only appropriate that a governing body be formed that represents both the public and the private

sector, representing both wholesale suppliers, consumers, and service providers. The creation of such a body is the first step towards the formation of an actual power pool in Kazakhstan.

Based on Hagler Bailly's considerable volume of work and dialogue with both governmental organizations such as the Ministry of Energy, Industry and Trade, KEGOC and the Committee on Natural Monopolies as well as with private companies operating in the wholesale electricity market of Kazakhstan and international donor institutions such as the World Bank, there is a common desire of the industry to move towards a wholesale power pool arrangement. However, there has been considerable debate concerning the process of moving towards a power pool given the current state and structure of the electricity industry in Kazakhstan.

This report outlines a transition plan for the electricity industry based upon current discussions between Hagler Bailly and several of the major entities in the wholesale electricity market. Much of this report draws from the considerable volume of wholesale electricity market technical assistance that USAID/Hagler Bailly has provided to the Government of Kazakhstan over the past four years. Including a comprehensive set of market rules needed to establish a functioning wholesale power pool. These market rules govern the dispatch and sale of electricity in a competitive wholesale market. USAID/Hagler Bailly has also developed and distributed model contracts and licenses for the various industry participants. While these documents provide the electricity industry with the necessary foundations to run a functioning wholesale power pool, the current debate concerns the steps needed to transform the industry to fit this power pool model.

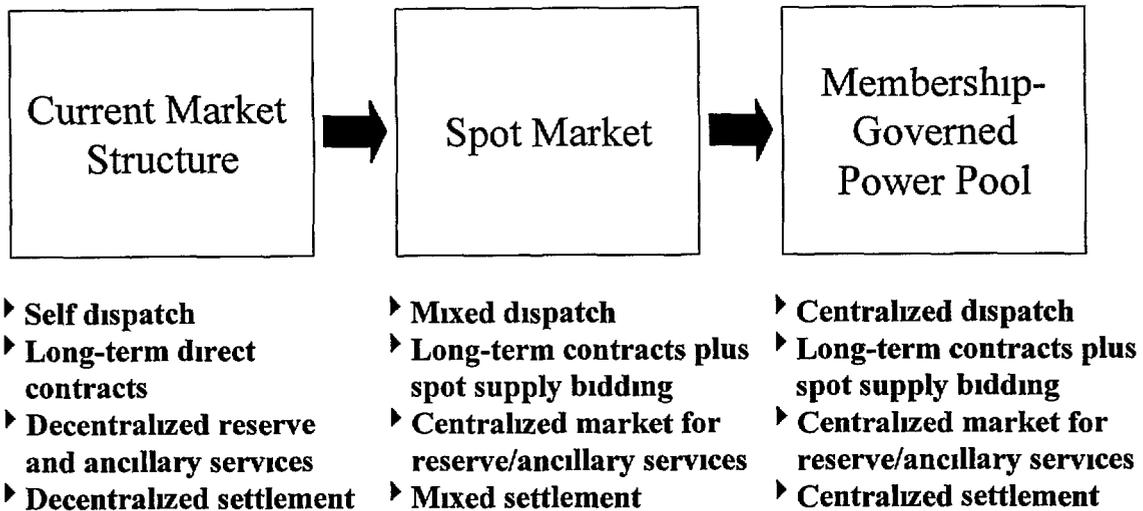
In terms of the steps to be taken first in the process that will form the transition that will eventually create a wholesale power pool, there are a number of urgent priorities that need to be addressed by market participants. These priorities include:

- ▶ Creating a governing body, representative of the industry, to guide the process,
- ▶ Privatizing the remaining state-owned generation and distribution enterprises,
- ▶ Developing clear and comprehensive open access rules for the high voltage grid,
- ▶ Establishing a spot market for reserve power trading,
- ▶ Adopting guidelines for ancillary service provision and payment.

These actions can be seen as the first steps towards creating a power pool, since they will result in the creation of a basic competitive market for the buying and selling of wholesale electricity in an industry where private sector entities are able to utilize the state-owned electricity network without discrimination in order to make rational business decisions according to market-based electricity supply and demand signals. The market will be controlled by the market members themselves, with oversight provided by the regulatory authority, through the governing body of the Pool. The following chapter will describe this transition in greater detail.

Once these initial steps are taken, the pool can then move towards greater centralization of functions such as dispatch, system services, and settlements. This market transition process is illustrated below. The initial steps to create a basic spot market will result in a system in which some wholesale market functions are mixed, or split, among the various participants. The later transition to a fully functional power pool will centralize these functions to provide greater efficiency, transparency, and system reliability. However, the process must be done in phases in order to build confidence among the market members. A proposed timeline for such changes is outlined in Chapter 3.

Market Transition



CHAPTER 2

MARKET APPROACH

Given the current state of the wholesale market in Kazakhstan, the immediate transition to a fully functional power pool is not realistic at this time. The relative decentralization of operations in the wholesale electricity market today, the lack of sophisticated equipment required to operate a modern pool and the lack of cash in the market due to current non-payments problems will take time to resolve. Operating within these conditions, a sequence of small, initial successes will be necessary to develop the trust needed among market participants in order to eventually create a fully functional power pool. Therefore, USAID/Hagler Bailly recommends a phased approach to the creation of a wholesale pool. The central focus of this phased approach is to address the most pressing problems in the first phase, while laying the operational and structural groundwork for greater centralization of market functions in the second phase of the transition.

Some of the provisions for a power pool already exist in the current wholesale power market. These include bilateral contracts for baseload generation between suppliers and wholesale consumers and, to a degree, metered losses. However, the market is in need of a range of additional changes in order to make it viable. Some of these changes should be implemented during the first phase of the transition to a wholesale market and power pool to prepare for the more sophisticated second phase in the near future. The issues that need to be addressed in the first phase of the market transition include:

- ▶ Create a member-owned reserve pool with its own governing body to guide the process,
- ▶ Privatize the remaining state-owned regional distribution companies to resolve the non-payments problems in the industry,
- ▶ Make KEGOC independent of any other operating company so that there can be no conflict of interest in their service to the producers and consumers,
- ▶ Provide clear and comprehensive rules that give open access to all of the grid systems,
- ▶ Establish an independent regulatory agency for the electricity industry,
- ▶ Create a spot market for short-term trading of reserve power,
- ▶ Create clear guidelines for ancillary service provision and payment.

2.1 RESERVE POOL ORGANIZATION

The Reserve Pool (The "Pool") will be a joint stock company owned by its members, who are the producers, the suppliers, the consumers and the service companies. The producers are the generating companies and could include exporters from other countries. The suppliers are the sellers of electricity, which could include the generators, regional distribution companies (RECs) and electricity brokers. The consumers are those who purchase electricity from the suppliers, and could include the RECs and large consumers. The service companies are the National Grid Company and the National Dispatch Center, both parts of KEGOC.

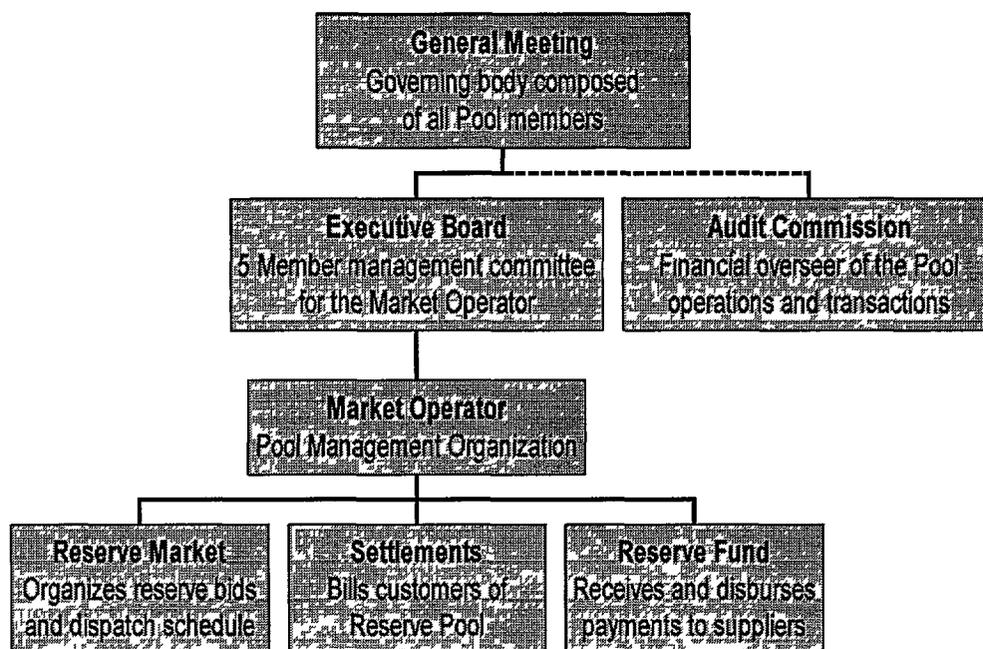
The purpose of the Pool will be to formulate, finance and govern the wholesale market. These functions will be carried out by the members through the creation of a governing body that will be elected by the members. The governing body will be responsible for the management of the Pool and for setting the budget for its operation. The members will be responsible for funding the operation of the Pool.

The initial task of the governing body is to adopt a set of governance procedures to determine the membership and structure of the governing body and to establish a clear decision making process. These procedures should clarify the conditions for membership, the role and responsibility of members, voting rights and regulations, and a dispute resolution process. The creation of a governing body with these characteristics will allow qualified market members to directly participate in market decisions. The establishment of a dispute resolution process is needed to provide an alternative to the domestic or international court systems. Formal legal proceedings typically prolong the time until a decision is reached while expending time and resources that could better be directed at more productive activities.

The first steps in this process have already been taken by KEGOC and the Electricity Industry Association (EIA) members. In early September 1998 these groups drafted a charter for the creation of a closed joint stock company, "The Reserve Pool of Kazakhstan." The members of the Pool include all licensed members of the Unified Power System (UPS) of Kazakhstan. The operation of the Pool and its constituents are governed by the Charter of the Reserve Pool (see appendix A). The stated objective of the Pool is to operate and develop the market for reserves for the electricity sector of Kazakhstan. The Charter document identifies three governing structures within the Pool entity: the General Meeting of pool members, the Executive Board, and the Audit Commission (see diagram).

The General Meeting is the highest governing body of the Pool and as such has authority over all policy issues related to the pool, including changing the charter and market operating regulations, as well as admitting new Pool members. As the highest governing body of the Pool, the primary function of the General Meeting of the pool members is to define and adopt the parameters within which the Pool and Pool organizations will operate. To this end, a draft set of Market Regulations has already been produced and circulated among the EIA members and KEGOC outlining the basic guidelines for organizing and operating the Reserve Pool (SEE APPENDIX B).

Reserve Pool of Kazakhstan Administrative Bodies and Functions



The Reserve Pool Charter and the Market Regulations both envision the creation of a Market Operator entity to carry out the operations of the Pool. The initial composition of the Market Operator will be a minimum of a President, Treasurer, and the required staff necessary to perform the tasks of the commercial activities of the wholesale market. The functions of the Market Operator are covered in detail in the section describing the spot market. The Market Operator is subordinate to the Executive Board of the Pool which is elected by the members of the General Meeting of the Pool to manage the operations of the Pool in compliance with the Market Regulations.

The Executive Board is a five member representative body composed of the constituents of the various industry groups in the General Meeting, namely the thermal power plants, CHPs, National Grid Company, regional electric networks, and large customers. The Executive Board meets at least quarterly to ensure that the Market Operator is functioning within the parameters established by the Market Regulations and the Charter, and to establish any necessary internal regulations to assist in this process.

This initial Pool governing structure proposed by KEGOC and the EIA members represents a major step towards the creation of a fully functioning power pool in the future. The Pool Charter intended to be fair and equitable for all market members while the Pool structure incorporates a number of checks and balances to ensure that the Pool is operated in the most beneficial manner for all parties involved.

2.2 PRIVATIZATION OF REMAINING STATE-OWNED REGIONAL DISTRIBUTION COMPANIES

The completion of the privatization of the RECs is critical for the development of the wholesale electricity market. The two major problems that must be overcome to be able to successfully operate the Pool are customer non-payments and the lack of working and investment capital. The inability of the state-owned enterprises to resolve these problems is rooted in their ownership structure. As state-owned enterprises, these companies are often used as tools of social policy by national and local government bodies. These companies are routinely required to provide electrical service to industrial and other debtor customers, despite chronic non-payment problems. Unfortunately after years of working within such a system, the mentality of providing subsidized electrical service often pervades even the enterprise management.

The Government of Kazakhstan has recently recognized that all methods that have been tried over the past year to solve these problems have failed and have stated their intention to privatize the remainder of the RECs. It is important that these sales go to qualified strategic investors because they bring the business-oriented management needed by these enterprises to solve their customer non-payment problems, and they also provide working and investment capital to rehabilitate and modernize the equipment and services of the companies.

The privatization process itself is very important to consider. Recently the government has been very interested in significantly speeding up the electricity sector privatization process so that many of the remaining state-owned RECs are scheduled to be sold quickly. While it is encouraging to see the government's privatization enthusiasm after over a year without progress, the accelerated timetable for the sale of these assets could work against the goal of privatizing them to qualified strategic investors. Credible strategic investors will need time to assess the enterprises and perform adequate due diligence before the privatization bidding process commences. This can take several weeks or months from the time that the privatization tender is announced. Setting a privatization timeframe that is too short to allow for adequate due diligence will increase investor uncertainty.

During the privatization process it is important that the government screen privatization candidates to separate qualified companies from those with little international power sector experience or with inadequate resources to invest in the companies. The privatization process itself must be clearly documented and transparent to ensure that a fair and impartial decision is reached. To date, the privatization process for most state-owned enterprises in the electricity

industry has been neither clearly documented nor transparent. The details of the privatization effort should be clearly stated in a comprehensive set of bidding documents coupled with an international announcement of the tender process in appropriate international power sector publications. The process should also be done according to a schedule that provides strategic investors with the time needed for due diligence assessments of the enterprises. To assist the government in these tasks and to add credibility to the privatization process, an international investment bank with privatization experience should be retained to provide independent counsel and expertise to the government.

2.3 OPEN ACCESS AND THE INDEPENDENT SYSTEM OPERATOR (ISO)

In unbundled, competitive wholesale electricity markets, such as in California or the UK, an independent system operator, or ISO, exists to ensure that all market members have open access to the high voltage transmission system. This ISO is typically the national or regional transmission company. Given the existence of such a body in Kazakhstan in the form of KEGOC, the process of establishing an ISO for the Kazakhstan wholesale market will be less intensive than in a system such as California where the transmission grid is privately owned and an ISO had to be created in its entirety. However, in its current structure KEGOC has an inherent conflict of interest that would prohibit it from immediately acting as the system ISO. This conflict of interest involves KEGOC's management rights over generation and distribution assets.

In order to create a market in which electricity is traded efficiently and economically, suppliers and consumers must have clear guidelines that spell out their access rights to the high voltage transmission system. These access rights must be fair and impartial. Any ambiguities in the system access rights or favoritism in the rules will reduce system efficiency and drive out private sector participation in the market. While the access rights to the transmission system must be clearly defined, the role and responsibility of the ISO must also be clearly established.

To act as the ISO, KEGOC must be strictly limited to providing only transmission and other related services to market members. The involvement of the transmission company in areas on the industry outside of the transmission business will lead to suspicions of impropriety, whether or not any favoritism actually exists. This will have negative implications on the credibility of the ISO and of the entire wholesale market structure. If private generation and distribution companies believe that there is not a level playing field in the wholesale market, they may choose not to participate, crippling the effectiveness of the market mechanism. The recent Law on Natural Monopolies addresses this concern by limiting KEGOC to providing only transmission services.

2.4 INDEPENDENT REGULATION

Even after KEGOC's generation and distribution assets are separated from the transmission company, KEGOC will still retain a natural monopoly over the high voltage transmission system. As a natural monopoly KEGOC must be regulated by an authorized independent regulatory agency. Currently, the regulatory function is divided between the Ministry of Energy, Industry and Trade and the Commission on Natural Monopolies. The Ministry has authority over the licensing of wholesale electricity companies while the Commission on Natural Monopolies has tariff setting authority over the industry. This separation of regulatory functions is not optimal for market efficiency. One regulatory body should have authority over tariff formation and licensing, as well as other important regulatory functions for natural monopolies. A single regulatory body would provide greater regulatory continuity, provide the regulatory agency with the ability to use licenses as a means to enforce tariff policy, and allow the regulatory body to derive its own revenue from licensing fees, establishing its independence from the state budget.

While the Commission on Natural Monopolies is a likely choice to serve as the regulatory body for the industry, electricity is only one of the natural monopolies regulated by the Commission. The substantial regulatory burden faced by the Commission reduces the time and resources that the Commission can devote to electricity market issues. Due to the extensive demands that wholesale market creation will entail, it is recommended that a new independent regulatory body be formed for the electricity industry.

The major issues facing the regulatory agency during the market transition period include

- ▶ Assuring open access to the high voltage network and to the low voltage networks for certain customers,
- ▶ Implementing market-based transmission and distribution tariff methodologies,
- ▶ Monitoring the wholesale market to guard against collusion or other anti-competitive practices, and
- ▶ Establishing clear and consistent industry policies on payments, service disconnection, transmission and distribution losses, and other related issues.

The implementation of market-based transmission and distribution tariff methodologies is important because these pricing mechanisms will help to shape the wholesale market. The tariff methodologies should be complimentary with a competitive market system. Unfortunately, the current tariff methodologies rely on volume and distance components rather than a capacity charge and losses. This issue will not be discussed in detail here since USAID/Hagler Bailly has already provided the Government of Kazakhstan and the Commission on Natural Monopolies with substantial assistance and materials concerning the adoption of internationally accepted market-based tariff methodologies.

The existence of a mature competitive wholesale electricity market will eliminate the need for electricity supply tariffs. In fact, wholesale electricity prices in Kazakhstan are currently well below the tariff ceiling established for electricity supply due to healthy competition in the market between generators. It is still recommended that a tariff ceiling for wholesale supply remain in effect during the early stages of the market transition. At such point that they feel it is prudent, the members of the governing body of the wholesale market can appeal to the regulatory commission to repeal the tariff ceiling. After the ceiling is removed, the regulatory commission should remain active in monitoring the wholesale electricity market to guard against anti-competitive behavior among the largest suppliers.

The regulatory commission should produce industry-wide policies for payments, service disconnection, transmission and distribution losses, and other related issues. By creating standard policies, the regulatory commission can relieve the pressure on private firms that currently have to develop and implement their own procedures on these contentious issues. Due to the need to significantly improve the financial health of the electricity industry, the payments and disconnection policies should be aggressive enough to allow distribution companies to rapidly improve their business operations by providing disincentives for non-payments.

2.5 SPOT MARKET FOR RESERVES AND ENERGY

The current wholesale electricity market in Kazakhstan suffers serious supply problems due to the lack of a spot market for balancing real time supply and demand fluctuations. The existing wholesale market is largely based on bilateral contracts between generators and wholesale customers. With regard to these contract requirements, generators submit day ahead nominations to KEGOC identifying the electricity supply amounts that they are willing to put on the grid the next day. KEGOC then determines if there is sufficient transmission capacity to accommodate these nominations. However, real time increases in electricity demand often exceed the supply nominations of the generators.

In most competitive wholesale electricity markets, the market operator is able to instruct generators to increase or decrease their output in line with fluctuations in the demand for electricity. However, the lack of payments in the Kazakhstan electricity system limits the ability of the market operator to control the supply side of the market. Generators are not willing to produce additional amounts of electricity when they believe that they will not be financially compensated. The lack of payments in the system removes any incentive to increase generation above the levels specified in the generator's direct contracts. This feature of the market severely limits the options available to the market operator in terms of balancing supply and demand. The only option available to the system operator in such cases is to limit demand through load shedding.

The reliability of the electricity system is also compromised by the lack of a market mechanism for purchasing reserve capacity. Reserve capacity is needed to protect the system against the

unscheduled loss of load from online generating units. If an unscheduled shutdown occurs, the dispatcher must be able to call upon reserve units to bring the system back in balance. However, due to the chronic lack of payments in the electricity system, generators are not willing to supply reserve capacity to the dispatch center. In addition, generators with firm supply contracts need reserves to ensure that they can fulfill their contract obligations to their wholesale customers. Without a mechanism for purchasing reserves from other generators, suppliers with firm supply contracts face substantial penalties if they are unable to meet their contractual obligations.

Experience shows that balancing the wholesale market by shedding load is not always the most optimal way to manage the electricity industry, nor is it adequate for the consumers and the economy of Kazakhstan. Typically large areas are affected by load shedding in Kazakhstan, denying service to paying and nonpaying customers alike. Load shedding also represents lost production at industrial and commercial enterprises, reducing the economic output of the nation. A system in which excess capacity can be offered to the market on short notice would alleviate the need for load shedding.

A spot market needs to be created in Kazakhstan in which generators with excess capacity can be called upon to supply the system reserve capacity and to produce additional energy when increased output is needed to match increases in demand or loss of generation. International experience suggests a number of ways that such a market can be structured. However, the fundamental key for the successful operation of such a spot market is the guarantee of payment to the generators willing to participate. Without sufficient financial incentive, no spot market will function effectively. This again shows the need to improve collections at the RECs.

The structure of such a spot market is primarily dictated by the conditions within the electricity industry of Kazakhstan. KEGOC has proposed a system of prepaid futures and options contracts as a means for balancing real time electricity supply and demand fluctuations. However, the level of complexity needed to carry out these extremely short-term contracts is most likely beyond the current capabilities of the system. The most practical alternative is to create a simple Reserve Pool of wholesale suppliers and customers.

The Reserve Pool will function as a clearing house for buyers and sellers of reserve capacity as outlined in the attached Market Regulations. The NDC will determine the amount of spinning, hot, and cold reserves required to operate the electricity system within given reliability parameters. These reliability parameters will be detailed in a set of Technical Requirements developed by the industry and government, and administered by the NDC. Initial discussions with market members suggest that the reliability of the system should be enough to protect against a single failure of the largest generating unit presently on line. The largest single units in Kazakhstan are the 450 MW units at Ekibastuz 2. Thus, to guard against a single failure, a minimum of 450 MW of spinning reserves will be required. Additional reserves are needed to provide for load balancing during peak demand periods to provide electricity in excess of the levels supplied to consumers under direct contracts. Reserve capacity and energy are also needed for the ancillary services required for frequency and voltage control. The actual total reserve capacity requirement will be determined by the NDC on a weekly basis in accordance with the

Technical Requirements of the system and communicated to the Market Operator of the Pool. The NDC can update the amount of reserves required by the system on a daily basis up to one day before the actual reserves need to be available to the system.

Once the reserve requirements have been established, the suppliers of reserve capacity will submit bids for capacity and energy to the Market Operator of the Pool. The suppliers of reserve capacity can be either generators with excess capacity, or wholesale consumers bidding to shed load. The bids for each unit available to the Pool that day will be broken down into two components: the capacity price and the energy price. The capacity price will be based on the total fixed costs of the unit and will be indicated by a separate price per MW for spinning, hot, and cold reserves. The energy price will reflect the unit's variable costs and will be priced per kWh. The Market Operator will evaluate the total amount of capacity for which bids have been received and determine if the Technical Requirements requested by NDC have been met. If the results of the bids do not meet the Technical Requirements, the Market Operator will request a second round of bidding and will continue in this manner until the total amount of bids received satisfies the total reserve requirements. In the case when more than enough reserves have been bid to meet the requirements of the system, the bids with the lowest capacity costs for the reserve categories required will be accepted by the Market Operator. When the Technical Requirements are satisfied, the Market Operator will then provide the accepted bids for each day to the NDC at least 24 hours before the reserves are required to be available. All suppliers of accepted bids will receive their reserve capacity price during the period in which their reserves are utilized.

When energy is needed from the reserves by the NDC to balance load, control frequency and voltage, or for emergency situations, the NDC will be instructed to dispatch the bids according to their total cost in a manner which yields the lowest cost electric power to the specific purchaser or the system. The determination of the lowest cost will be based on the bid price of the energy combined with the transmission costs and the losses associated with utilizing that unit. If transmission costs and losses are equal for all units, then the bidder with the lowest bid price will be dispatched first, followed by the second lowest and so on until the energy requirements of the system are met. All providers of energy will receive their energy bid price for the time period in which they are called upon to generate. This system provides wholesale suppliers, consumers and the NDC with a choice other than the automatic load shedding currently used to balance the system.

Full and timely payment for these reserves is critical for the successful operation of the Pool. Given the payment risks involved in the electricity market of Kazakhstan, it is recommended that a Reserve Fund be established as a means of protecting against late payment or payment default by one or more market participants. The actual amount of the Fund will be determined by the General Meeting of Pool members, but should be at least sufficient to cover one month of estimated energy and reserve capacity purchases from the Reserve Pool. In addition to the size of the Reserve Fund, the Pool members must also determine how much each Pool member must contribute to establish the Reserve Fund. The Fund will serve as a one-time prepayment to establish the credit of the members at the start of Pool operations. Payments to the reserve

suppliers will be made from the Fund, while payments from the reserve consumers will be made to the Fund, replenishing the Fund each month

Settlements for all Reserve Pool transactions will be provided through the Market Operator. The NDC will provide the Market Operator with a daily schedule of the reserves and energy used by individual consumers and by the system as a whole as well as the providers of those services. The Market Operator will maintain a continuous record of these schedules and at the end of each month the Market Operator will determine the total amount owed by each user and to each service provider. The Market Operator will then pay each service provider the amount owed out of the Reserve Fund.

At the same time the Market Operator will bill each individual consumer of reserve and energy service from the Reserve Pool for the services that they used during the month. For those reserves and energy used for ancillary services and other system-wide needs not attributed to any one consumer, the Market Operator will bill all wholesale market members based on a pro rated formula. For capacity used for ancillary and other system services, the cost will be pro rated according to each consumer's share of the coincident peak demand of the transmission system for that month. Likewise, the energy costs will be pro rated according to each consumer's share of the total net energy consumption of the entire system for that month. The consumers will be billed for these services at the end of the month and will reimburse the Reserve Fund.

For those reserves that are required to compensate for the unscheduled loss of a generating unit with direct contract obligations, the capacity costs will be billed to that generating company. In addition, the energy costs incurred by the Reserve Pool to replace the energy lost due to the unscheduled shutdown of the unit will also be billed to the generator whose unit was taken offline. These energy costs will continue to be the liability of the responsible generator until the unit is brought back online, or a maximum of two business days. The Market Operator will bill the generator daily for these costs, and the generator will reimburse the Reserve Fund within two business days.

If the provider of reserves is unable to deliver those reserves because it is constrained off by the unavailability of transmission, the constrained-off provider will be compensated by the Fund for the value of its lost opportunity. The value will be based on the difference between what the constrained-off provider would have received and the actual amount that the substitute provider received. This extra cost will be reimbursed to the Reserve Fund by KEGOC. If the provider were to be constrained off by KEGOC for any reason other than *force majeure*, KEGOC will be liable for a penalty. The amount of this penalty will be determined by the Executive Board of the Reserve Pool. The penalty, as well as the extra expense of providing energy from a substitute supplier will be billed to KEGOC at the end of the month, and KEGOC will reimburse the Reserve Fund.

Every provider that submits a bid to provide reserve capacity and energy to the Reserve Pool is expected to be available when called upon by the NDC. In the event that the provider is not available for any reason other than *force majeure*, it will be considered to be in violation of the

Market Regulations of the Reserve Pool and liable to a penalty. The amount of this penalty will be determined by the Executive Board of the Reserve Pool. The defaulted provider will also be liable for the incremental cost incurred by having to use a substitute provider of reserves and energy. The Market Operator will bill that provider for the incremental costs plus the penalty at the end of the month, and the defaulted provider will reimburse the fund.

The current draft Market Regulations provides a framework document for the establishment of the Pool. However, the development of such a spot market for reserves and energy will require more detailed market rules for bidding, settlements, and other related functions. Since market rules will be the central document governing the functions of the Pool and the responsibilities of the Market Operator, it is imperative that they be comprehensive in their scope and detailed in the description of procedures and policies. The continued development of the Market Regulations to serve as the market rules for the Pool should be seen as an ongoing process to be continued even after the Pool has actually started operation, as the Pool develops to be responsible for more trades than reserves and ancillary services.

In addition to being comprehensive, it is critical that the market rules are clear and that their further development is transparent enough to eliminate any ambiguities or misunderstandings among market members in terms of their own rights and responsibilities. This will serve to greatly reduce the time and resources spent currently on litigating disagreements in the national and international court system over wholesale market infractions. As mentioned earlier, the governance rules of the governing body should contain a dispute resolution mechanism to settle disagreements among spot market participants before they evolve into prolonged court battles. By adopting a comprehensive and clear set of market rules, the market members can avoid the majority of such problems.

In addition, if the market rules show clear procedures for realizing additional revenues through the spot market, this will provide private owners with greater confidence in the financial possibilities of the market and potentially increase investment levels in electricity enterprises by improving the overall creditworthiness of the market members themselves. Such a spot market will satisfy the need for both short-term electricity trading to balance the system and a mechanism for securing reserves.

Under the Pool as currently envisioned there will still be a mixed system of settlements and dispatch. Suppliers will bill and collect for all electricity supplied through direct contracts. The Market Operator will bill for all spot market energy and reserve sales. Suppliers with direct contracts will also continue to self dispatch up to the limit of their contracts, while the NDC will only dispatch for energy purchased through the Reserve Pool. While these mixed systems under the initial phase of the Pool are not the most efficient manner of managing the power system, they are far better than the system, or lack of a system, operating today.

2.6 POWER POOL – SECOND PHASE

Following the creation of a market governing body, the establishment of a spot market, ancillary service agreements, open access rules, the formation of an independent regulatory body for the electricity industry, and the completion of the privatization of the remaining state-owned RECS, the market will be prepared to move towards a more formalized power pool structure. The timing of such a move will be discussed in Chapter 3 in the market implementation plan. The following section will discuss the need for and advantages of moving to a more formalized power pool structure.

Even after the initial transition steps are taken during the first phase of the market restructuring, the basic spot market and pool arrangements will be relatively decentralized. This is especially true of such functions as electricity billing and settlement, system dispatch, and the provision of reserves. Centralizing these functions within the power pool structure presents advantages in efficiency that can represent a real reduction in operating and overhead costs to individual pool members that currently have to carry out these functions themselves. The ability of the pool to actually sustain such a system of centralized service will ultimately depend on the reliability of electricity payments by wholesale customers for the services of the Pool.

2.7 CENTRALIZED BILLING AND SETTLEMENTS

Due to the chronic nonpayment problem in the electricity industry of Kazakhstan, electricity suppliers have been forced to create their own billing and settlements directly with their wholesale customers for their electricity services. This decentralized collections process has led to fierce competition among generators for the relatively few wholesale electricity customers, typically industrial consumers, who reliably pay their electricity bills. The non-payments from many of the country's distribution companies has led to reduced service and electricity supply to many of the country's residential, commercial, and other retail customers.

As electricity payments in Kazakhstan increase to acceptable levels, the number of reliable wholesale customers will also increase, including RECs. Increasing the number of reliable customers will reduce the need for electricity suppliers to individually bill and collect from their customers.

In such a system, the Market Operator would perform the settlements and billing for all electricity consumption in the market, including direct contract sales. As system dispatcher, the Market Operator would have immediate access to the actual power flows within the wholesale electricity system. The Market Operator also would have access to the spot market electricity prices. An expansion of the Market Operator's direct contract registry could be made to include the price of electricity in each contract. These prices would be strictly confidential and could not be shared with market members outside of the contracting parties without their permission. However, this modification would allow the Market Operator to total all electricity flows during

the relevant period, including both direct contract sales and spot market purchases, and apply the appropriate prices to each. The Market Operator would then send a consolidated bill to each wholesale customer. To increase the credibility of the billing process and assure accuracy, all wholesale electricity suppliers should be presented with an itemized account of the amount and corresponding price of all electricity and other services supplied to specific wholesale customers from their facilities.

Payments could also be centralized under the Market Operator or under a separate Market Funds Administrator, such as a bank, that is also subordinate to the governing body of the wholesale market members. The payments from wholesale electricity customers would be made directly to the settlement agent, whether this is the Market Operator or a Market Funds Administrator. The settlement agent is then responsible for disbursing payments to the appropriate wholesale market suppliers. It is vital for the credibility of the settlements function that the process be transparent to all market members and subject to the review of the governing body of the power pool and regulatory authority. The decision to delegate the settlements function to the Market Operator or to a Market Funds Administrator should be made by the governing body of the power pool at the appropriate time.

2.8 CENTRALIZED SYSTEM DISPATCH

Increased electricity payment and the centralization of the settlement and billing process will also allow for the centralization of system dispatch. Under the initial phase of the market transition, the Market Operator will provide reserve capacity that is determined on the basis of least cost to the NDC, who will dispatch plants according to the least cost to the consumer. The generators will continue to self-dispatch for amounts specified under their direct contracts. While this is an improvement over the current situation in which generators self-dispatch and the NDC only utilizes load shedding to keep the system in balance, it still does not provide the dispatch center with the ability to completely optimize the electricity system to provide for the most economic dispatch system wide. Once the level of confidence in electricity payments has increased to a sufficient degree, the governing body of the power pool should consider granting the Market Operator full authority over the dispatch function.

CHAPTER 3 IMPLEMENTATION PLAN

The steps required to create a fully functioning power pool in Kazakhstan can be divided into two phases, based on the priorities discussed in Chapter 2. The first phase of the transition process should include the changes needed most urgently by the market participants. This includes the development of a Reserve Pool organization with a governing body, the completion of the privatization of the generation and distribution companies, the creation of a basic spot market for reserves and ancillary services, and the development of clear provisions for open access to the high voltage electricity grid.

3.1 PHASE ONE

During the first phase of the transition, the responsibility for certain types of system dispatch and settlements will be divided between suppliers, purchasers and the Market Operator. The Market Operator will determine which generating plants will supply reserves and ancillary services based on their bids, as well as manage settlements for these services. The Market Operator will also manage the spot market, matching electricity supply bids with demand and tracking the electricity and payment flows. However, generators will continue to self-dispatch according to their long-term contracts for baseload generation. The generators will also continue to collect for these sales directly from their customers.

During this first phase of market development the governing body should develop governance rules for the Reserve Pool. These governance rules should contain details on market membership, voting rights, and other procedural matters. Once these rules are in place, the governing body can then turn to the task of adopting industry guidelines on dispatch, settlements procedures, statutory fund provisions, and other market policies. The initial market rules should focus on the basic elements needed to operate the Pool efficiently. These rules must be sufficiently clear and detailed in to reduce potential conflicts due to ambiguities in the market guidelines. The process of developing governance and market rules for the Reserve Pool is already underway. The progress made in these areas is reflected in the Reserve Pool Charter and the Market Provisions document.

The privatization of the remaining state-owned REC'S should be completed during the first phase of the market transition. Privatizing these assets will focus the enterprise management on the goal of operating these companies as businesses, increasing their creditworthiness and improving their collections rates. Similarly, KEGOC should be separated from generation and

distribution service to establish itself as an independent and unbiased service company in accordance with the Law on Natural Monopolies

A period of at least six months will be needed to complete the first stage of the transition process. The formation of a spot market for reserves and the creation of supporting rules and guidelines is moving ahead. The separation of the remaining state-owned generation and distribution companies from KEGOC and their privatization to strategic investors needs to proceed as well.

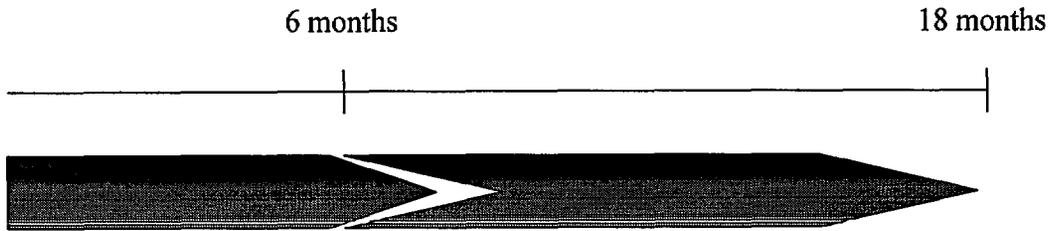
3.2 PHASE TWO

The beginning of the second phase of the development of the power pool can be said to commence when the remaining state-owned distribution and generation assets are privatized. This event will mark the completion of the restructuring process within the electricity industry and the transformation of KEGOC into an independent system operator. The key milestone signifying the completion of the second phase in the development of the Power Pool will be the decision by the Pool members to centralize dispatch, settlements and other system services.

In order for the Pool members to agree to such a change, collections must be dramatically improved within the wholesale market. Therefore, the focus of activities during the second phase will be to increase collections within the Pool to a level that provides the Pool members with the confidence to relinquish their billing and settlements responsibilities to the Market Operator. The Pool itself will need time to demonstrate its capability to handle these functions for all wholesale market members and to prove that the system is viable for the long-run. In order to properly handle these increased responsibilities, more complete pool rules will need to be adopted specifying the process and procedures for providing system dispatch, settlements, and other services by the Pool.

It is difficult to estimate how much time will be needed to improve collections and Pool operations to the point when dispatch and collections can be centralized. However, based on similar experience in other power pools, a minimum of 12 to 18 months may be needed before this point is reached. Once system services are centralized within the Pool, the development of the basic Reserve Pool into a fully functional Power Pool will be complete. The focus of Pool activities will then turn from Pool development to Pool support and improvement.

Market Reform Timeline



Phase One	Phase Two
<ul style="list-style-type: none">- Pool governing body- Spot reserve market- Ancillary service plan- Privatization- Open access provisions	<ul style="list-style-type: none">- Increase collections- Development of complete market rules- Centralization of dispatch- Centralization of settlements

APPENDIX A

CHARTER OF CLOSED TYPE JOINT STOCK COMPANY

" Reserve Pool of Kazakhstan"

1 Name, Location and Term of Company

Name of Company Closed Type Joint Stock Company "The Reserve Pool of Kazakhstan" (the "Pool")

Address of Registered Joint Stock Company

1.3 Term of the Pool Unlimited

2 Objectives and Types of Activities of the Pool

Principal Objectives of the Pool

Operate and develop the Market for Reserves for the Electricity Sector of Kazakhstan in accordance with the Pool Members' Agreements, the Market Regulations and the Technical Requirements of the Pool

The Pool shall not engage in any business other than that specified in the above documents

Types of Activities of the Pool

Provide the rules and procedures (the Market Regulations) for the operation of a system for the trading of spinning, hot and cold reserves

Establish and maintain a register of all current Pool Members

Operate and administer a market for reserves in accordance with the Market Regulations including

the provision of mutual free access of all the Pool shareholders to the Pool data base,

the use of information to publish the pre-dispatch schedules and forecasts for spinning, hot and cold reserves prices,

the compilation and publication of reserve market trading statistics,

the establishment and definition of regions and regional reference nodes for the determination of prices for spinning, hot and cold reserves,

informing the Pool members of inter-regional loss corrections, and

the collection and dissemination of information necessary to enable the market to operate efficiently

Establish procedures for consultation with the Members of the Pool with respect to the manner in which the Pool fulfills its functions and obligations

2.3.5 Trade in capacity reserves by meeting the unexpected energy requirements of the customers through a spot market

2.3.6 Provide a financial settlements service by creating a fund with initial contributions from all members of the Pool, and maintaining the fund as indicated in the Market Regulations

3 Legal Status of the Pool

The Pool shall be a legal entity incorporated under the laws of the Republic of Kazakhstan in the form of a closed Type Joint Stock Company named "The Reserve Pool of Kazakhstan" and duly registered with the Justice bodies of the Republic of Kazakhstan. It shall obtain the rights and obligations of a legal entity from its date of registration.

In its activities, the Pool shall observe the applicable laws of the Republic of Kazakhstan and its foundation documents.

4 Company Property and Charter Capital

The property of the Pool consists of its basic funds and working assets and all other assets, indicated in the Pool's balance sheet.

The Pool owns, uses and disposes of its property in conformity with its goal of permitted activities.

Any item of expenditure greater than that authorized by annual budget for the financial year, shall be subject to approval by the Executive Board.

The Charter Capital of the Pool is comprised of a _____ fee from every Member of the Pool.

5 Rights and Obligations of the Pool

The Pool shall have a right and may exercise all of the powers and privileges granted by law or this Charter, together with any other powers and privileges incidental thereto, in so far as such powers and privileges are necessary or convenient to the conduct, promotion or attainment of the Pool's corporate purposes set forth in Article 2 of this Charter.

Subject to Section 2 of this Charter and the legislation of the Republic of Kazakhstan, the Pool shall have a right to

5.2.1 exist in perpetuity, unless and until the winding up and dissolution of the Pool pursuant to the term of Paragraph 11 of this Charter,

wind up and dissolve the Pool in the manner provided in this Charter,

have a corporate seal, trademark and logo registered with the Patent Office of the Ministry of Energy, Industry and Trade of the Republic of Kazakhstan,

sue and defend itself in a court of law, arbitration proceedings, administrative proceedings,

enter into contracts and other legally binding agreements in accordance with the laws,

acquire, own, lease improve, employ, use and otherwise deal in and with real and personal property or any income therein,

sell, convey, lease, exchange, transfer, mortgage, pledge or otherwise dispose of any property, real or personal, of the Pool, including but not limited to the means of production and other assets of material value,

maintain settlement and hard currency accounts,

appoint such officers and agents as the business of the Pool requires, and provide pay to such officers with suitable compensation,

adopt, amend and repeal this Charter or any of its provisions,

conduct its business (including the establishment of a budget and accounting procedures), carry on its operations and exercise its powers and rights within and outside of the Republic of Kazakhstan,

incur liabilities and obligations, including the borrowing of money and secure such obligations by mortgage, pledge or other encumbrance, and

to take any other lawful actions in furtherance of its stated corporate purpose

6 The Pool's Membership and Voting Rights

The Pool Members shall be the Shareholders of the Pool

The Pool Shareholders Voting Rights

The rules for voting are

Every Pool member shall have one vote A majority of two-thirds of the Total Votes is required to pass any resolution in General Meetings which will change the Market Regulations, or the Settlement Procedures All other resolutions shall require a simple majority to pass

6 3 The Shareholders' have the right, subject to the laws of Kazakhstan

6 3 1 to participate and vote in person or by proxy in the Pool Shareholders' General Meetings,

6 3 2 to elect by cumulative vote and to stand for election to the Executive Board, to elect the Audit Committee and the other administrative bodies of the Pool,

6 3 3 to obtain information about the Pool's activity, the Pool must submit copies of its annual balance sheets and other officially reported documents, Pool's reports, and minutes of all meetings, for their first-hand view, photocopies will be provided at the Shareholder's request without unreasonable delay

6 3 6 to obtain a share of the residual property of the Pool in case of its liquidation, but in accordance with a number of votes,

6 4 The Pool Shareholders have the obligation

6 4 1 to adhere to the founding documents of the Pool, including this Charter and all other governing documents of the Pool,

to execute the decisions of the Pool's General Meeting and its other management bodies,

to vote on Pool membership applications as recommended by the Executive Board,

to fulfill any other obligations required of them pursuant to the laws of Kazakhstan

6 5 The Shareholders are financially responsible for the Pool's obligations within the limit of their contributions and according to the obligations set forward in the Market Regulations, and they shall not bear any further financial responsibility for any financial liabilities and other obligations of the Pool

7 Administrative Bodies of the Pool

7 1 The institutions of the Company are

General Meeting - the highest management body,

The Executive Board - the highest executive body, and

The Audit Commission - the control body

General Meeting

The General Meeting of the Pool Shareholders is the highest decision making body of the Pool,

The Pool Shareholders or their representatives and proxies select the Executive Board at the first General Meeting and at Annual or any special General Meeting,

A quorum at a General Meeting shall consist of votes representing 50% or more of aggregate numbers of votes,

Decisions on election of Executive Board by Shareholders shall be made on the basis of a simple majority of votes,

A General Meeting shall be presided over by the Chairman of the Executive Board or by his proxy. In the case of their absence, the Chairman of the Meeting shall be elected from the represented Board Members

7 2 6 Other activities to be performed at a General Meeting are

Approval of the Annual Report prepared by the Executive Board reporting on operations of the Pool,

Review and approve changes to the Charter of the Pool, Market Regulations and other official documents recommended by the Executive Board,

Review of recommendations for actions in the following year made by the Executive Board,

Review and approve recommendations for changes in the operation of the Pool,

Consideration and resolution of issues raised (with prior notice) by any Pool Shareholder,

Approve the Pool Audit Commission,

Select the Pool's Independent Auditor,

Vote on the admission of new Pool Members who have met the requirements as determined in Article 7 3 14 7 of this Charter Such approval must not unreasonably withheld

Perform other activities as determined by this Charter

The Executive Board

The Executive Board in between the Shareholders' Meetings will represent the Pool Members in the supervision of the Pool,

The Executive Board shall have 5 Members, and each Member of the Executive Board shall have one vote while making a decision, and its makeup shall be as follows

One (1) voting representative each of big Thermal Plants, CHP, main electric networks, regional electric networks, big customers

7 3 3 The terms of the Executive Board shall be

Individual members of the Executive Board are elected for a period of two years,

To provide continuity, two out of five of the initial Executive Board members who are representatives of Sellers or Buyers will have a one-year term

Each member of the Executive Board can resign from his membership upon the provision of a written notification to the Chairman of the Executive Board, such notification to be submitted not later than 90 days before the resignation takes effect

If a member of the Executive Board resigns or is otherwise incapacitated before the end of his term, extra elections shall be conducted at a specially called General Meeting to select a new member of the Board The newly elected member shall be elected from the same voting category as the resigned member, and he will serve only until the end of the term of the resigned member

The Executive Board shall annually elect one of its Members as Board Chairman If the Chairman resigns or cannot serve because of some incapacity, the Executive Board shall immediately elect a new Chairman for the remaining term

Meetings of the Executive Board shall be conducted at least quarterly with written notice from the Chairman to be provided not later than 14 days before the meeting date If necessary, the Chairman can give notice orally This notice shall have communicated with it the agenda of the meeting A quorum for a meeting of the Executive Board will be no less than 3 of its members

The decisions of the Executive Board are adopted by a simple majority of votes, unless the law or this Charter requires otherwise Tie votes will be broken by a vote of the full

five-member Executive Board

The Chairman is authorized to take such measures as are necessary for the implementation of the decisions made

A member of the Executive Board can assign his authority to another member in writing, allowing that member to represent him and to vote at the meeting of the Executive Board

Decisions of the meeting of the Executive Board shall be reflected in written minutes, to be signed by all members of the Board voting at the meeting. The minutes shall indicate the time and place of the meeting, the participants, the agenda, the general provisions discussed and the decision of the Executive Board. Issues not concluded with relevant decisions shall also be reflected in the minutes. These minutes shall be submitted by the Chairman to the members of the Board immediately after the meeting for their signatures

Responsibilities of the Executive Board,

7.3.12.1 Control over the activity of the Market Operator,

7.3.12.2 Appoint the Officers of the Market Operator for a term of one year,

Examine and approve the financial and accounting records of the Pool. To carry out this responsibility the Executive Board can delegate certain tasks to its members or to certain experts, however the members of the Board will remain personally responsible for negligence in the discharge of their duties in this regard, or involve the specialists on the contractual basis,

Obtain from the Officers a quarterly written report on the activity of the Pool at any time, and other written reports upon request,

Examine the annual report and affirm all information about the business performance of the Pool for accuracy, and prepare a report for the General Meeting

Convene Special Meetings of the Pool Shareholders whenever required by law, this Charter or in order to protect the Pool Shareholders' interests

7.3.12.7 Specify the process for membership application to the Pool in accordance with the requirements set out in the Market Regulations

Within 30 days of receipt of all required information for application for Pool membership, administer vote at General Meeting and notify candidate of decision

Audit Commission

Verification of the economic/financial activity of the Pool is exercised by the Audit Commission which is approved by the Pool Shareholders at a General Meeting

Verifications are conducted annually or at the demand of the Audit Commission's own initiative, or at the demand of one or more Shareholders

The Audit Commission reports only to the Pool Shareholders as constituted at a General Meeting. The Commission submits verification documents to the Pool Shareholders

as constituted at a meeting of the Executive Board This Commission will consist of no less than three members, all of whom must be the Pool Shareholders

The Audit Commission has the right to invite experts and auditing companies to provide assistance The Commission and its duly appointed agents shall have unrestricted access to the premises of the Pool, its books, records and correspondence

The Audit Commission completes conclusions on the basis of annual reports and balances The Executive Board can only approve the financial statements if the Audit Commission's conclusions are included

The Audit Commission shall demand an Executive Board meeting if its investigations reveal a threat to the interests of the Pool, or if it has revealed abuses or misconduct on the part of Pool officials If this meeting does not sufficiently satisfy the Commission, it shall demand a Pool Shareholder General Meeting

8 Officers of the Pool

The Officers of the Pool will be at a minimum the President and the Treasurer These Officers will constitute the Working Body which will manage the current activities of the Pool, including hiring of staff necessary to perform the functions of the Market Operator, in accordance with the Market regulations and the approved annual budget of the Pool

All powers of the Officers are delegated by the Pool Shareholders through the Executive Board

The President and the Treasurer shall be recommended by the Executive Board and approved by 2/3 of votes at the General Meeting of the Pool Shareholders Any other Officers shall be appointed by the President after every candidate was approved by the Executive Board

The President represents the Pool and is responsible for performing the Market Operator tasks, running the daily activity of the Pool and implementing the decisions of the Executive Board

Issues of authority, terms of activity and material maintenance of the President and the Treasurer are determined in the contract which is completed separately between the President, the Treasurer and the Executive Board as agreed by the Pool Shareholders

Officers will conduct the management of the Pool according to the law and to the present Charter, or in specific cases, based on internal rules determined by the Executive Board Certain decisions will be under the Executive Board competence, including

- any purchase, assignment and legal encumbrances of real property pledge,

- establishment of commitments for periods longer than 12 months, or taking financial obligations of amounts exceeding 10% of the annual budget,

- determination of the annual budget for next year including financing, expenses and investments, as well as general planning for following fiscal years,

- issuing or invalidation of general trade letters or letters of credit,

- negotiating or dealing with legal entities or with their representatives, in which the Pool Shareholders or their representatives have an interest, and

activity other than regular activity of the Pool, which is similar to the above-listed activity

9 Accounting and Reporting

The Pool keeps operation and accounting records as well as statistical accounting

The Pool's fiscal year corresponds to the calendar year. The period between the day of registration of the Pool and December 31 of the year of registration is a partial fiscal year of the Pool

The Pool's activity shall be exercised in conformity with the goals of the Pool and any plans of the Pool developed and approved by the Executive Board and/or the Officers of the Pool

10 Procedure for Introducing Changes into the Pool's Charter

The right to introduce any changes in the Pool's Charter is within the exclusive competence and authority of the Pool Shareholders

Any revisions to the Charter must be approved by the Pool Shareholders representing not less than 75% of the votes of the General Meeting

11 Interruption of Activity of the Pool

A decision to liquidate the Pool can be made by approval of at least 75% of the votes of the General Meeting of the Pool

12 Disputes

Resolution of any disputes between counterparts of the Pool, concerning the rights and responsibilities reflected in the Charter, or disputes concerning the definitions used shall be resolved in accordance with the established dispute resolution procedure through the International Arbitrage Court

13 Provisions in Part

If any provision of this Charter becomes invalid, this shall not affect the Charter as a whole, and the remainder of the Charter will remain valid. The invalid provisions will be replaced with valid provisions pursuant to Article 10.2 of this Charter

APPENDIX B

Market Regulations of The Reserve Pool of Kazakhstan

Goal

The goal of the Reserve Pool is to provide the necessary capacity reserves for adequate supply of electric power during normal operation and during emergency operating conditions and to maintain frequency and voltage control of the RK UPS in the least cost manner

Organization

The Reserve Pool is a joint stock company composed of producers and wholesale purchasers of electric power and the national grid company (KEGOC) The functions of the Reserve Pool are to provide for un-interruptible electric power to all consumers of electricity under imbalance of supply and demand and under unusual operating circumstances The capacity of the Reserve Pool will be provided by the power producers under these pool regulations Determination of the technical requirements that set the amount of reserves required at any time is the responsibility of the National Dispatch Center, whose job it is to maintain frequency and voltage control for the UPS

Providers of reserve capacity are

- Generating companies

- Wholesale customers with interruptible load

Customers of reserve capacity are

- Wholesale buyers of electricity who need stable frequency and voltage

- Generating companies who need to cover their firm power contracts

Technical requirements are provided by

- The National Dispatch Center (NDC)

The members of the Reserve Pool shall all be licensed members of the UPS, and shall be governed by the Charter of the Reserve Pool

The management of the Reserve Pool shall be conducted by a Market Operator appointed by the Executive Board of the Reserve Pool

Technical Requirements

The NDC shall determine the amount of spinning, hot and cold reserve capacity required to

Meet normal load increases and balance unplanned load changes,

Maintain adequate frequency and voltage levels in the UPS,

Maintain standard operation following the loss of the largest generating unit on line at any given time

The NDC will communicate their plan for the required reserve capacity to the Reserve Pool on a weekly basis, updated on a daily basis on the day before the actual reserves need to be in place

Creation of the Reserve Pool

After the NDC has determined the amount of reserve capacity required to be furnished by the Reserve Pool (the Technical Requirements), the members of the Reserve Pool who supply capacity reserves will submit their bids for capacity and energy to the Reserve Pool. These bids will be for a specified number of MW at a specified price for capacity and a price for kW hours for energy, the price depending on the category of reserve being offered – spinning, hot or cold

The Market Operator (MO) will evaluate the amount of capacity for which bids have been received, and determine if the Technical Requirements have been met. These bids can come from generators bidding capacity or from consumers bidding to shed load. If the results of the bids do not meet the Technical Requirements, the MO will request a second round of bids for capacity, and will continue until the total amount of bids received is equal to the Technical Requirements

When all of the bids have been received, the MO will determine the lowest priced bids (by category of reserve bid) that meet the Technical Requirements, and these bidders will be notified that they are the suppliers of reserves for the Reserve Pool for the following day (the Pool Suppliers). The Pool Suppliers will be paid their bid price for supplying capacity, whether it is spinning reserve, hot reserve or cold reserve. The costs of providing these capacity reserves will be added to the wholesale price of electricity by a charge of Tenge per MW for all purchasers of electric power from the wholesale market

Use of Reserve Capacity from the Reserve Pool

The MO will provide the bids for capacity and the price of these bids to the NDC daily 24 hours before the start of the trading day. When the need for reserves arises to meet the requirement of balancing load with supply, controlling frequency or voltage, or for an emergency, the NDC will be instructed to dispatch the reserves provided by the MO in a manner which, when combined with the transmission costs and the losses, will provide for the lowest cost electric power to the purchaser. If transmission cost and losses are the same for all bidders into the Reserve Pool, then the bidder with the lowest energy price will be dispatched first, and then the next lowest priced bidder until the total capacity requirement is met. As these reserve suppliers are dispatched, they will receive their bid price for supplying electric energy

Reserve Fund

A reserve fund (the Fund) will be created by the members of the Reserve Pool to act as insurance against the payment for capacity that would be used from the Reserve Pool. The amount of this Fund will be determined by the MO, who will use the estimates of spinning, hot and cold reserves obtained from the NDC, and the pricing estimates of these reserves obtained from the generating companies. Once the total amount of the Fund is determined, the MO will bill each member of the Reserve Pool an equal amount to accumulate the Fund. The MO will manage the Fund, will determine the settlements, liabilities and credits from the Fund, and will be responsible for billing and payments.

Settlements for Use of Reserves

The NDC will provide the MO with a daily schedule of the use of reserves from the Reserve Pool and the providers of these reserves. The MO will maintain a continuous record of use of reserves, and at the end of each month the MO will determine the total costs of providing these reserves and will pay the providers of the reserves out of the Fund.

The MO will determine how these reserves have been used, and will bill the users of the capacity and energy that have been deployed. For those reserves that are used for frequency or voltage control and are not attributable to any single supplier or purchaser, the capacity costs will be pro rated according to the coincident demand of each purchaser at the time of monthly peak system demand for that month. Likewise, the energy costs will be pro rated according to the amount of energy each purchaser uses for the month compared to the total energy of the system for that month. At the end of the month, the MO will bill each purchaser according to his pro rated use of capacity and energy, and these purchasers will reimburse the Fund.

For those reserves that are used to compensate for the loss of a generating unit, the capacity costs will be billed to the generating companies pro rated by the relative size of each company's largest unit that is on line. At the end of the month, the MO will bill each Generator for its capacity charge, and the generators will reimburse the Fund. When these reserves are called upon, the energy costs of the generator(s) that are brought on line will be compensated by the Fund. The energy costs for these reserves will be billed to the generator whose unit was taken off line to cause the use of the reserves. These energy costs will continue to be the liability of the generator with the lost unit until this unit is brought back on line. At the end of the month, the MO will bill the generator who caused the use of reserves for the energy costs, and that generator will reimburse the Fund.

If the provider of reserves is unable to deliver those reserves because it is constrained-off by the unavailability of transmission, this constrained-off provider will be paid from the Fund for his lost opportunity. The amount of this lost opportunity will be the difference between the energy payment he would have received and the energy payment that the substitute provider received. This extra cost will be billed to KEGOC at the end of the month, and KEGOC will reimburse the Fund.

Penalty for Failure to Supply

When a provider of reserves, either a generator bidding capacity or a wholesale consumer bidding interruptible capacity, makes a bid to supply reserves on the following day, this provider is expected to be available to provide the capacity it has bid. If it is not available when called upon, unless for a reason of force majeure, it will be considered to be in default of its contract, and will be liable to a penalty. The amount of the penalty will be the incremental amount of the cost of reserves that result in having to use the next higher bidder, plus a penalty to be determined by the Reserve Pool Executive Board. The MO will bill that provider at the end of the month, and the provider will reimburse the Fund.

If the KEGOC is not able to provide transmission facilities to deliver available reserves for reasons other than force majeure, it shall be liable to a penalty. The amount of the penalty will be the incremental amount of the cost of reserves that result in having to use the next higher bidder, plus a penalty to be determined by the Reserve Pool Executive Board. The MO will bill KEGOC at the end of the month and KEGOC will reimburse the Fund.

CHARTER OF CLOSED TYPE JOINT STOCK COMPANY

" Reserve Pool of Kazakhstan"

1 Name, Location and Term of Company

Name of Company Closed Type Joint Stock Company "The Reserve Pool of Kazakhstan" (the "Pool")

Address of Registered Joint Stock Company

1 3 Term of the Pool Unlimited

2 Objectives and Types of Activities of the Pool

Principal Objectives of the Pool

Operate and develop the Market for Reserves for the Electricity Sector of Kazakhstan in accordance with the Pool Members' Agreements, the Market Regulations and the Technical Requirements of the Pool

The Pool shall not engage in any business other than that specified in the above documents

Types of Activities of the Pool

Provide the rules and procedures (the Market Regulations) for the operation of a system for the trading of spinning, hot and cold reserves

Establish and maintain a register of all current Pool Members

Operate and administer a market for reserves in accordance with the Market Regulations including

the provision of mutual free access of all the Pool shareholders to the Pool data base,

the use of information to publish the pre-dispatch schedules and forecasts for spinning, hot and cold reserves prices,

the compilation and publication of reserve market trading statistics,

the establishment and definition of regions and regional reference nodes for the determination of prices for spinning, hot and cold reserves,

informing the Pool members of inter-regional loss corrections, and

the collection and dissemination of information necessary to enable the market to operate efficiently

Establish procedures for consultation with the Members of the Pool with respect to the manner in which the Pool fulfills its functions and obligations

2 3 5 Trade in capacity reserves by meeting the unexpected energy requirements of the customers through a spot market

2 3 6 Provide a financial settlements service by creating a fund with initial contributions from all members of the Pool, and maintaining the fund as indicated in the Market Regulations

3 Legal Status of the Pool

The Pool shall be a legal entity incorporated under the laws of the Republic of Kazakhstan in the form of a closed Type Joint Stock Company named "The Reserve Pool of Kazakhstan" and duly registered with the Justice bodies of the Republic of Kazakhstan. It shall obtain the rights and obligations of a legal entity from its date of registration

In its activities, the Pool shall observe the applicable laws of the Republic of Kazakhstan and its foundation documents

4 Company Property and Charter Capital

The property of the Pool consists of its basic funds and working assets and all other assets, indicated in the Pool's balance sheet

The Pool owns, uses and disposes of its property in conformity with its goal of permitted activities

Any item of expenditure greater than that authorized by annual budget for the financial year, shall be subject to approval by the Executive Board

The Charter Capital of the Pool is comprised of a _____ fee from every Member of the Pool

5 Rights and Obligations of the Pool

The Pool shall have a right and may exercise all of the powers and privileges granted by law or this Charter, together with any other powers and privileges incidental therefore, in so far as such powers and privileges are necessary or convenient to the conduct, promotion or attainment of the Pool's corporate purposes set forth in Article 2 of this Charter

Subject to Section 2 of this Charter and the legislation of the Republic of Kazakhstan, the Pool shall have a right to

5 2 1 exist in perpetuity, unless and until the winding up and dissolution of the Pool pursuant to the term of Paragraph 11 of this Charter,

wind up and dissolve the Pool in the manner provided in this Charter,

have a corporate seal, trademark and logo registered with the Patent Office of the Ministry of Energy, Industry and Trade of the Republic of Kazakhstan,

sue and defend itself in a court of law, arbitration proceedings, administrative proceedings,

enter into contracts and other legally binding agreements in accordance with the laws,

acquire, own lease, improve, employ, use and otherwise deal in and with real and personal property or any income therein,

sell, convey, lease, exchange, transfer, mortgage, pledge or otherwise dispose of any property, real or personal, of the Pool, including but not limited to the means of production and other assets of material value,

maintain settlement and hard currency accounts,

appoint such officers and agents as the business of the Pool requires, and provide pay to such officers with suitable compensation,

adopt, amend and repeal this Charter or any of its provisions,

conduct its business (including the establishment of a budget and accounting procedures), carry on its operations and exercise its powers and rights within and outside of the Republic of Kazakhstan,

incur liabilities and obligations, including the borrowing of money and secure such obligations by mortgage, pledge or other encumbrance, and

to take any other lawful actions in furtherance of its stated corporate purpose

6 The Pool's Membership and Voting Rights

The Pool Members shall be the Shareholders of the Pool

The Pool Shareholders Voting Rights

The rules for voting are

Every Pool member shall have one vote. A majority of two-thirds of the Total Votes is required to pass any resolution in General Meetings which will change the Market Regulations, or the Settlement Procedures. All other resolutions shall require a simple majority to pass.

6.3 The Shareholders' have the right, subject to the laws of Kazakhstan

6.3.1 to participate and vote in person or by proxy in the Pool Shareholders' General Meetings,

6.3.2 to elect by cumulative vote and to stand for election to the Executive Board, to elect the Audit Committee and the other administrative bodies of the Pool,

6.3.3 to obtain information about the Pool's activity, the Pool must submit copies of its annual balance sheets and other officially reported documents, Pool's reports, and minutes of all meetings, for their first-hand view, photocopies will be provided at the Shareholder's request without unreasonable delay

6.3.6 to obtain a share of the residual property of the Pool in case of its liquidation, but in accordance with a number of votes,

6.4 The Pool Shareholders have the obligation

6 4 1 to adhere to the founding documents of the Pool, including this Charter and all other governing documents of the Pool,

to execute the decisions of the Pool's General Meeting and its other management bodies,

to vote on Pool membership applications as recommended by the Executive Board,

to fulfill any other obligations required of them pursuant to the laws of Kazakhstan

6 5 The Shareholders are financially responsible for the Pool's obligations within the limit of their contributions and according to the obligations set forward in the Market Regulations, and they shall not bear any further financial responsibility for any financial liabilities and other obligations of the Pool

7 Administrative Bodies of the Pool

7 1 The institutions of the Company are

General Meeting - the highest management body,

The Executive Board - the highest executive body, and

The Audit Commission - the control body

General Meeting

The General Meeting of the Pool Shareholders is the highest decision making body of the Pool,

The Pool Shareholders or their representatives and proxies select the Executive Board at the first General Meeting and at Annual or any special General Meeting,

A quorum at a General Meeting shall consist of votes representing 50% or more of aggregate numbers of votes,

Decisions on election of Executive Board by Shareholders shall be made on the basis of a simple majority of votes;

A General Meeting shall be presided over by the Chairman of the Executive Board or by his proxy. In the case of their absence, the Chairman of the Meeting shall be elected from the represented Board Members

7 2 6 Other activities to be performed at a General Meeting are

Approval of the Annual Report prepared by the Executive Board reporting on operations of the Pool,

Review and approve changes to the Charter of the Pool, Market Regulations and other official documents recommended by the Executive Board,

Review of recommendations for actions in the following year made by the Executive Board,

Review and approve recommendations for changes in the operation of the Pool,

Consideration and resolution of issues raised (with prior notice) by any Pool Shareholder,

Approve the Pool Audit Commission,

Select the Pool's Independent Auditor,

Vote on the admission of new Pool Members who have met the requirements as determined in Article 7 3 14 7 of this Charter Such approval must not unreasonably withheld

Perform other activities as determined by this Charter

The Executive Board

The Executive Board in between the Shareholders' Meetings will represent the Pool Members in the supervision of the Pool,

The Executive Board shall have 5 Members and each Member of the Executive Board shall have one vote while making a decision, and its makeup shall be as follows

One (1) voting representative each of big Thermal Plants, CHP, main electric networks, regional electric networks, big customers

7 3 3 The terms of the Executive Board shall be

Individual members of the Executive Board are elected for a period of two years,

To provide continuity, two out of five of the initial Executive Board members who are representatives of Sellers or Buyers will have a one-year term

Each member of the Executive Board can resign from his membership upon the provision of a written notification to the Chairman of the Executive Board, such notification to be submitted not later than 90 days before the resignation takes effect

If a member of the Executive Board resigns or is otherwise incapacitated before the end of his term, extra elections shall be conducted at a specially called General Meeting to select a new member of the Board The newly elected member shall be elected from the same voting category as the resigned member, and he will serve only until the end of the term of the resigned member

The Executive Board shall annually elect one of its Members as Board Chairman If the Chairman resigns or cannot serve because of some incapacity, the Executive Board shall immediately elect a new Chairman for the remaining term

Meetings of the Executive Board shall be conducted at least quarterly with written notice from the Chairman to be provided not later than 14 days before the meeting date If necessary, the Chairman can give notice orally This notice shall have communicated with it the agenda of the meeting A quorum for a meeting of the Executive Board will be no less than 3 of its members

The decisions of the Executive Board are adopted by a simple majority of votes, unless the law or this Charter requires otherwise Tie votes will be broken by a vote of the full

five-member Executive Board

The Chairman is authorized to take such measures as are necessary for the implementation of the decisions made

A member of the Executive Board can assign his authority to another member in writing, allowing that member to represent him and to vote at the meeting of the Executive Board

Decisions of the meeting of the Executive Board shall be reflected in written minutes, to be signed by all members of the Board voting at the meeting. The minutes shall indicate the time and place of the meeting, the participants, the agenda, the general provisions discussed and the decision of the Executive Board. Issues not concluded with relevant decisions shall also be reflected in the minutes. These minutes shall be submitted by the Chairman to the members of the Board immediately after the meeting for their signatures

Responsibilities of the Executive Board,

7 3 12 1 Control over the activity of the Market Operator,

7 3 12 2 Appoint the Officers of the Market Operator for a term of one year,

Examine and approve the financial and accounting records of the Pool. To carry out this responsibility the Executive Board can delegate certain tasks to its members or to certain experts, however the members of the Board will remain personally responsible for negligence in the discharge of their duties in this regard, or involve the specialists on the contractual basis,

Obtain from the Officers a quarterly written report on the activity of the Pool at any time, and other written reports upon request,

Examine the annual report and affirm all information about the business performance of the Pool for accuracy, and prepare a report for the General Meeting

Convene Special Meetings of the Pool Shareholders whenever required by law, this Charter or in order to protect the Pool Shareholders' interests

7 3 12 7 Specify the process for membership application to the Pool in accordance with the requirements set out in the Market Regulations

Within 30 days of receipt of all required information for application for Pool membership, administer vote at General Meeting and notify candidate of decision

Audit Commission

Verification of the economic/financial activity of the Pool is exercised by the Audit Commission which is approved by the Pool Shareholders at a General Meeting

Verifications are conducted annually or at the demand of the Audit Commission's own initiative or at the demand of one or more Shareholders

The Audit Commission reports only to the Pool Shareholders as constituted at a General Meeting. The Commission submits verification documents to the Pool Shareholders

as constituted at a meeting of the Executive Board This Commission will consist of no less than three members, all of whom must be the Pool Shareholders

The Audit Commission has the right to invite experts and auditing companies to provide assistance The Commission and its duly appointed agents shall have unrestricted access to the premises of the Pool, its books, records and correspondence

The Audit Commission completes conclusions on the basis of annual reports and balances The Executive Board can only approve the financial statements if the Audit Commission's conclusions are included

The Audit Commission shall demand an Executive Board meeting if its investigations reveal a threat to the interests of the Pool, or if it has revealed abuses or misconduct on the part of Pool officials If this meeting does not sufficiently satisfy the Commission, it shall demand a Pool Shareholder General Meeting

8 Officers of the Pool

The Officers of the Pool will be at a minimum the President and the Treasurer These Officers will constitute the Working Body which will manage the current activities of the Pool, including hiring of staff necessary to perform the functions of the Market Operator, in accordance with the Market regulations and the approved annual budget of the Pool

All powers of the Officers are delegated by the Pool Shareholders through the Executive Board

The President and the Treasurer shall be recommended by the Executive Board and approved by 2/3 of votes at the General Meeting of the Pool Shareholders Any other Officers shall be appointed by the President after every candidate was approved by the Executive Board

The President represents the Pool, and is responsible for performing the Market Operator tasks, running the daily activity of the Pool and implementing the decisions of the Executive Board

Issues of authority, terms of activity and material maintenance of the President and the Treasurer are determined in the contract which is completed separately between the President, the Treasurer and the Executive Board, as agreed by the Pool Shareholders

Officers will conduct the management of the Pool according to the law and to the present Charter, or in specific cases, based on internal rules determined by the Executive Board Certain decisions will be under the Executive Board competence, including

any purchase, assignment and legal encumbrances of real property pledge,

establishment of commitments for periods longer than 12 months, or taking financial obligations of amounts exceeding 10% of the annual budget,

determination of the annual budget for next year including financing, expenses and investments, as well as general planning for following fiscal years,

issuing or invalidation of general trade letters or letters of credit,

negotiating or dealing with legal entities or with their representatives, in which the Pool Shareholders or their representatives have an interest, and

activity other than regular activity of the Pool, which is similar to the above-listed activity

9 Accounting and Reporting

The Pool keeps operation and accounting records as well as statistical accounting

The Pool's fiscal year corresponds to the calendar year. The period between the day of registration of the Pool and December 31 of the year of registration is a partial fiscal year of the Pool

The Pool's activity shall be exercised in conformity with the goals of the Pool and any plans of the Pool developed and approved by the Executive Board and/or the Officers of the Pool

10 Procedure for Introducing Changes into the Pool's Charter

The right to introduce any changes in the Pool's Charter is within the exclusive competence and authority of the Pool Shareholders

Any revisions to the Charter must be approved by the Pool Shareholders representing not less than 75% of the votes of the General Meeting

11 Interruption of Activity of the Pool

A decision to liquidate the Pool can be made by approval of at least 75% of the votes of the General Meeting of the Pool

12 Disputes

Resolution of any disputes between counterparts of the Pool, concerning the rights and responsibilities reflected in the Charter, or disputes concerning the definitions used shall be resolved in accordance with the established dispute resolution procedure through the International Arbitrage Court

13 Provisions in Part

If any provision of this Charter becomes invalid, this shall not affect the Charter as a whole, and the remainder of the Charter will remain valid. The invalid provisions will be replaced with valid provisions pursuant to Article 10.2 of this Charter

APPENDIX B

Market Regulations of The Reserve Pool of Kazakhstan

Goal

The goal of the Reserve Pool is to provide the necessary capacity reserves for adequate supply of electric power during normal operation and during emergency operating conditions and to maintain frequency and voltage control of the RK UPS in the least cost manner

Organization

The Reserve Pool is a joint stock company composed of producers and wholesale purchasers of electric power and the national grid company (KEGOC) The functions of the Reserve Pool are to provide for un-interruptible electric power to all consumers of electricity under imbalance of supply and demand and under unusual operating circumstances The capacity of the Reserve Pool will be provided by the power producers under these pool regulations Determination of the technical requirements that set the amount of reserves required at any time is the responsibility of the National Dispatch Center, whose job it is to maintain frequency and voltage control for the UPS

Providers of reserve capacity are

- Generating companies

- Wholesale customers with interruptible load

Customers of reserve capacity are

- Wholesale buyers of electricity who need stable frequency and voltage

- Generating companies who need to cover their firm power contracts

Technical requirements are provided by

- The National Dispatch Center (NDC)

The members of the Reserve Pool shall all be licensed members of the UPS, and shall be governed by the Charter of the Reserve Pool

The management of the Reserve Pool shall be conducted by a Market Operator appointed by the Executive Board of the Reserve Pool

Technical Requirements

The NDC shall determine the amount of spinning, hot and cold reserve capacity required to

Meet normal load increases and balance unplanned load changes,

Maintain adequate frequency and voltage levels in the UPS,

Maintain standard operation following the loss of the largest generating unit on line at any given time

The NDC will communicate their plan for the required reserve capacity to the Reserve Pool on a weekly basis, updated on a daily basis on the day before the actual reserves need to be in place

Creation of the Reserve Pool

After the NDC has determined the amount of reserve capacity required to be furnished by the Reserve Pool (the Technical Requirements), the members of the Reserve Pool who supply capacity reserves will submit their bids for capacity and energy to the Reserve Pool. These bids will be for a specified number of MW at a specified price for capacity and a price for kW hours for energy, the price depending on the category of reserve being offered – spinning, hot or cold

The Market Operator (MO) will evaluate the amount of capacity for which bids have been received, and determine if the Technical Requirements have been met. These bids can come from generators bidding capacity or from consumers bidding to shed load. If the results of the bids do not meet the Technical Requirements, the MO will request a second round of bids for capacity, and will continue until the total amount of bids received is equal to the Technical Requirements

When all of the bids have been received, the MO will determine the lowest priced bids (by category of reserve bid) that meet the Technical Requirements, and these bidders will be notified that they are the suppliers of reserves for the Reserve Pool for the following day (the Pool Suppliers). The Pool Suppliers will be paid their bid price for supplying capacity, whether it is spinning reserve, hot reserve or cold reserve. The costs of providing these capacity reserves will be added to the wholesale price of electricity by a charge of Tenge per MW for all purchasers of electric power from the wholesale market

Use of Reserve Capacity from the Reserve Pool

The MO will provide the bids for capacity and the price of these bids to the NDC daily 24 hours before the start of the trading day. When the need for reserves arises to meet the requirement of balancing load with supply, controlling frequency or voltage, or for an emergency, the NDC will be instructed to dispatch the reserves provided by the MO in a manner which, when combined with the transmission costs and the losses, will provide for the lowest cost electric power to the purchaser. If transmission cost and losses are the same for all bidders into the Reserve Pool, then the bidder with the lowest energy price will be dispatched first, and then the next lowest priced bidder until the total capacity requirement is met. As these reserve suppliers are dispatched, they will receive their bid price for supplying electric energy

Reserve Fund

A reserve fund (the Fund) will be created by the members of the Reserve Pool to act as insurance against the payment for capacity that would be used from the Reserve Pool. The amount of this Fund will be determined by the MO, who will use the estimates of spinning, hot and cold reserves obtained from the NDC, and the pricing estimates of these reserves obtained from the generating companies. Once the total amount of the Fund is determined, the MO will bill each member of the Reserve Pool an equal amount to accumulate the Fund. The MO will manage the Fund, will determine the settlements, liabilities and credits from the Fund, and will be responsible for billing and payments.

Settlements for Use of Reserves

The NDC will provide the MO with a daily schedule of the use of reserves from the Reserve Pool and the providers of these reserves. The MO will maintain a continuous record of use of reserves, and at the end of each month the MO will determine the total costs of providing these reserves and will pay the providers of the reserves out of the Fund.

The MO will determine how these reserves have been used, and will bill the users of the capacity and energy that have been deployed. For those reserves that are used for frequency or voltage control and are not attributable to any single supplier or purchaser, the capacity costs will be pro rated according to the coincident demand of each purchaser at the time of monthly peak system demand for that month. Likewise, the energy costs will be pro rated according to the amount of energy each purchaser uses for the month compared to the total energy of the system for that month. At the end of the month, the MO will bill each purchaser according to his pro rated use of capacity and energy, and these purchasers will reimburse the Fund.

For those reserves that are used to compensate for the loss of a generating unit, the capacity costs will be billed to the generating companies pro rated by the relative size of each company's largest unit that is on line. At the end of the month, the MO will bill each Generator for its capacity charge, and the generators will reimburse the Fund. When these reserves are called upon, the energy costs of the generator(s) that are brought on line will be compensated by the Fund. The energy costs for these reserves will be billed to the generator whose unit was taken off line to cause the use of the reserves. These energy costs will continue to be the liability of the generator with the lost unit until this unit is brought back on line. At the end of the month, the MO will bill the generator who caused the use of reserves for the energy costs, and that generator will reimburse the Fund.

If the provider of reserves is unable to deliver those reserves because it is constrained-off by the unavailability of transmission, this constrained-off provider will be paid from the Fund for his lost opportunity. The amount of this lost opportunity will be the difference between the energy payment he would have received and the energy payment that the substitute provider received. This extra cost will be billed to KEGOC at the end of the month, and KEGOC will reimburse the Fund.

Penalty for Failure to Supply

When a provider of reserves, either a generator bidding capacity or a wholesale consumer bidding interruptible capacity, makes a bid to supply reserves on the following day, this provider is expected to be available to provide the capacity it has bid. If it is not available when called upon, unless for a reason of force majeure, it will be considered to be in default of its contract, and will be liable to a penalty. The amount of the penalty will be the incremental amount of the cost of reserves that result in having to use the next higher bidder, plus a penalty to be determined by the Reserve Pool Executive Board. The MO will bill that provider at the end of the month, and the provider will reimburse the Fund.

If the KEGOC is not able to provide transmission facilities to deliver available reserves for reasons other than force majeure, it shall be liable to a penalty. The amount of the penalty will be the incremental amount of the cost of reserves that result in having to use the next higher bidder, plus a penalty to be determined by the Reserve Pool Executive Board. The MO will bill KEGOC at the end of the month and KEGOC will reimburse the Fund.