EXECUTIVE SUMMARY

A. Introduction

This report identifies best practices and specific steps that developing member countries (DMCs) of the Asian Development Bank (ADB) can take to encourage both private sector investment and competition in the power sector. Overall, the objective was to identify best practices that would benefit electricity consumers. In addition to power generation, where there has been by far the most private sector investment and competition to date in developing countries, this report evaluates an area that is only minimally present in the DMCs, namely private sector investment in power transmission and distribution (T&D). The important distinction in emerging competitive markets between distribution (the “wires” business) and retailing (marketing to customers) is also covered. T&D investments by the private sector have tremendous potential for increasing the efficiency of the power sector, creating a financially viable industry and benefiting all consumers.

This report does not identify the *minimum* practices required to induce investment, nor the *package* of best practices that may be required to induce private investment in the power sector in a specific country. Private sector investment can, and clearly does, take place without all these practices being in place. However, it is also true that this investment will be more *sustainable* if these best practices are in place.

B. A Vision and Philosophy of Power Sector Restructuring

Five major steps were identified in implementing best practice, together with their order of precedence. To some extent, these steps may proceed in parallel, but they are best to be considered as sequential actions that will lead to the implementation of a competitive power market:

1. Getting the investment framework right.
2. Deciding on the goals of restructuring and the ideal industry structure.
3. Preparing the players to participate in a competitive market.
4. Privatizing existing and new assets.
5. Ensuring that the competitive market is implemented properly.

The guiding principles for achieving meaningful change in the power sector are:

- The need to achieve lasting benefits for customers in the shortest possible time should drive the restructuring process. This should be the *raison d’etre* of restructuring. Actions which do not achieve or are inconsistent with this goal should be rejected.

- The power sector should be completely unbundled into separate generation, transmission, distribution, and possibly retailing sectors to achieve the maximum benefits for customers.

- Privatization should include the sale of power distribution utilities, as well as generation, and should include existing assets, as well as new projects, using a transparent process.

- Open access to transmission and distribution wires, and the ability to trade power between buyers and sellers in an open market, are critical to achieve a competitive framework.

- In a competitive market, the independent regulator should mainly oversee prices and incentives for the wires (transmission and distribution) businesses.

- Multilateral institutions such as ADB should be partners with the DMCs to help them achieve the maximum benefits for customers through increased private sector participation (PSP).

In defining the means to encourage private sector investment and competition that will benefit consumers, it is important to know what a competitive market would look like, and what its key features would be. A competitive market for power would have the following characteristics:

- Customers can freely choose their supplier of power and many of the characteristics and features of how they receive and use power.

- No one entity can influence the price in the market (i.e., there are many buyers and sellers).

- Information on choices is easily available (through the Internet, power pool, or advertising).

- The monopolistic segments of the industry (T&D) remain regulated, but they are given incentives to perform well.

- The competitive segments (generation and retailing) are regulated only minimally (e.g., for environmental compliance, market power and consumer protection).

In the restructuring process, it is important to recognize the difference between investment and competition. Investment is characterized by a willingness of investors to put their time, effort and money into the purchase or development of power projects. The best practices for investment include activities by DMCs that will encourage investors to expend their resources on one project at a time, and do not take a system-wide perspective. Competition, though, is a set of conditions in which investors vie for the market, and they compete against all other players simultaneously to sell their product. Currently, there is no competition in T&D, because these are by their nature monopoly businesses. However, it is possible to encourage efficiency and improve performance through regulation and setting the right incentives. Competition is a more rigorous set of conditions, and it is harder to achieve than investment.

Of course, involvement of the private sector is not a panacea, and the potential abuses of PSP must be controlled in the process of restructuring the sector. This requires continuing to regulate the T&D segments, and setting clear limits in such areas as market power, environmental compliance and employment impacts in the restructuring process. Restructuring the power industry is not a question of the government versus the private sector, though the two may have different objectives. Rather, it is a cooperative process in which the government and the private sector need to collaborate in order to bring about a satisfying conclusion for both. Over time, the implementation of the best practices discussed below is intended to foster such a “win-win” situation.

In the transition, there will almost certainly be significant impacts on existing employment in the power industry. Increased PSP is likely to lead to lower employment. Also, there is a cultural change that will not be easy for government employees or citizens to adjust to, in that the utility sector will no longer be government owned, and efficiency and profitability will be much more important than in the past. The key is to implement these changes in a balanced manner that captures the private sector benefits, while recognizing and dealing with potential adverse impacts on the society and the individuals.

Before determining how to best restructure and encourage PSP in the power sector, it is important to examine the country's objectives. A plan that a DMC would develop for involving the private sector should include an analysis of the objectives that the country expects to achieve. Potential objectives of PSP are to:

- lower costs and therefore lower both wholesale and retail power prices to customers;
- increase the reliability and efficiency of the power sector, through better management, and in the process, benefit consumers of power;
- provide customers with greater choice;
- lower the costs of transactions and of regulation;
- control monopoly power in areas (i.e., T&D) that remain monopolies;
- reduce the burden of investment that the power sector places on the country's budget, and allow the re-allocation of scarce resources to other purposes;
- improve the overall climate for foreign investment, and stimulate the economy as a whole through improved balance of payments, technology transfer, employment, etc.;
- help develop domestic capital markets;
- stimulate the introduction of new technology;
- extend coverage to citizens not currently supplied with power;
- raise money for the treasury for multiple purposes through the sale of state-owned assets;
- better achieve environmental objectives or comply with environmental laws;
- provide for a better trained and educated workforce; and
- minimize opportunities for corruption and market-distorting practices.

With the exception of lowering rates, it is likely that PSP can allow the DMCs to achieve all of these objectives.

C. The Best Practice, According to the Five Stages of Restructuring

The *best practices* and *second-best practices* for encouraging private sector investment and competition in the power sector are summarized below, in terms of the five stages of restructuring. Within these five stages, the best practices are subdivided, where appropriate, according to those that are general principles affecting restructuring, generation, and T&D. The best practices are presented in the order that the consultant recommends that they be implemented, though many of these steps are likely to occur simultaneously.

1. Establishing the Investment Framework

- Enhance the country's political and fiscal stability.

- Pursue the restructuring of the power sector in the context of broad economic reform and overall restructuring of government-owned enterprises.

- Establish an unequivocal government commitment and vision in favor of restructuring and eventual competition in the power sector, including the goals of such efforts and an aggressive timetable for action. Establish this commitment quickly and continue this support in spite of changes in government.

- Require full compliance with the government's commitment to restructuring and privatization in the relevant ministries and utilities, and require and approve implementation plans by the ministries and utilities to comply with the government's commitment.

- Establish confidence in the legal system. Including clear commercial law, contract law and property law, and a court system that enforces contracts. In the interim, use alternatives such as third-party arbitration and other country jurisdiction.

- Allow full foreign ownership of assets in the power industry. Do not restrict private or foreign ownership to a minority share.

- Achieve an investment-grade country rating from an international rating agency in order to attract the widest possible array of financing options, including long-term bonds.

  - Second best: Put in place incentives for investment (e.g., grace periods for debt, tax relief) to balance a lack of investment attractiveness for a limited time.

- Ensure that the currency is fully convertible, that the currency can be repatriated, and that sufficient foreign exchange will be available to allow investors to transfer profits out of the country.

- Encourage the development of local capital markets through such techniques as: (i) the removal of subsidies and undue banking controls; (ii) the establishment of pension funds; and (iii) setting up provisional credit entities.

- The government should articulate its commitment to electrification, and its intention to assist in meeting the costs to expand the system to serve non-economic customers.

- Promote the growth of hedging and futures instruments in financial markets that enable buyers and sellers to manage price risk.

2. Determining the Structure of the Power Industry

There are many possible steps and structures towards achieving a competitive market in power, and the specifics of each country will affect those steps. The following principles apply broadly across all such structures:

a. General Principles

- Pass a law to restructure the power sector with a strict timetable, with provisions for: (i)unbundling the sector; (ii) selling existing capacity and distribution utilities; (iii) establishing a regulator and its role, duties and obligations, including a distinction between the policy role of government and the implementing role of the regulator; and (iv) the unbundling of the market, and implementation of wholesale and retail markets.

- Determine, based on the country's resource situation and the government's objectives, whether it makes sense to privatize distribution or generation first, or both together. In Asia, much more attention needs to be placed on privatizing distribution, since this will create a more financially viable entity to which independent power procedures (IPPs) can sell power, and improve the performance for customers.

- Establish a regulatory commission that is separate and independent of the ministry, responsible for tariffs, franchises and performance standards.

- Reconcile differences and clearly establish jurisdictions between federal and local/regional governments through a focused dialogue before the process begins.

b. Generation

- Stimulate the use of domestic fuel sources if it is economical to do so.

- Set goals and a timetable for the use of non-conventional fuels (e.g., renewable energy) and energy conservation, which may be more expensive than conventional power sources, and establish a means for achieving those goals.

- Consider utilizing a "single buyer" (either a single utility or the transmission system) with longer-term contracts for initial projects. However, once a more viable investment climate and industry structure emerges, the country can implement a power exchange (PX) and independent system operator (ISO).

- Support private ownership and operation of the transmission system, as long as appropriate regulatory controls and incentives are in place.

- To ensure competition in generation, the transmission company should have three components: (i) ownership and maintenance of wires, (ii) system upgrade and generation dispatch (i.e., the ISO), and (iii) a PX.

- Shift responsibility for the operation of transmission wires to an ISO, whose role is to facilitate investment in the grid and carry out system dispatch. In larger countries, set up regional ISOs.

- Ensure that the ISO is truly independent.

- The ISO should be a non-profit corporation.

- Make the ISO board answerable to the regulator, which has the final decision on rates.

- Set up an independent organization (e.g., a PX) to manage power transactions between wholesale and retail buyers and sellers, and to handle financial settlements that are separate from the ISO and the ownership of wires.

c. Transmission and Distribution

- Make an absolute commitment to involve the private sector in power distribution, and allow majority ownership and control.

- Require unbundling of the “wires” from the retailing function within a distribution area.

- Mandate open access to the distribution system to allow other retailers to compete freely with the retailer that is affiliated with the local “wires” company.

- Separate completely the parent company from its retail affiliates.

- Allow investors in T&D to provide all utility services, not just power, either in an enclave or a wider distribution area.

- Establish an agreement, in the case of privatization in distribution, between the federal government and the regional or municipal governments, as these agencies may have competing agendas.

- Define clearly the geographic boundaries between cooperatives and concessions.

3. Preparing the Market for Private Sector Investment and Competition

a. General Principles

- Move power generation and distribution companies through a systematic process of commercialization and corporatization.

- Before privatization, the regulator should reduce and remove subsidies and cross-subsidies on power and fuel. In regard to the universal service obligations of the government, it should directly fund the poor and disadvantaged customers from the budget.

    - Second best: Continue subsidies and cross subsidies from government revenues for targeted low-income groups for a limited period of time.

- If assistance is provided to specific customer groups, there should be a process in place to determine that customers need this assistance.

- The regulator should set forth and actively monitor the rules of market participation.

- Train regulatory staff to ensure that proper analytical and industrial oversight skills exist at both the central and regional levels. First, set an example at the central government level, then transfer these regulatory skills to the regional level.

- Improve the operation of existing entities before privatizing them, but only if this can be done expeditiously. Do not delay restructuring and privatization for this purpose. Take into account the cost of improvements, which may be exorbitant.

- Allow the strategic investor to obtain management and operational control whether selling an exisiting asset or creating a new one. Local firms, or the utility itself, may add value as minority partners of the consortium.

- Ensure and enlist public support for privatization; which may mean an extensive education program, providing the ability to invest, and using a phase-in of higher tariffs.

- Eliminate inconsistencies between the regional and central levels of government with regard to tariffs and investment policies.

- The decision on how to address high levels of debt in state-owned companies slated for privatization should be taken in light of the government's goals for privatization. Mutual debt cancellation may be a good way to clear the books.

- Undertake the transition from government accounting to commercial or international accounting standards on a defined schedule, with adequate training.

b. Generation

- Develop standard contracts for independent power producers (IPPs) that are internally consistent and which meet international standards, including an implementation agreement and power purchase agreement.

- Use flexible resource planning in the early stages or the transition period, to determine what type and amount of capacity to add — allow the transmission entity to establish the level and timing of required capacity. Later, allow the market to determine what capacity to add.

- Use build-own-operate contracts to develop new capacity.

    - Second best: Use build-operate-transfer (BOTs) to get the market for PSP started, and establish clear terms for the conditions of the transfer of the plant back to the government; or use concessions, and grant long concession terms.

- Eliminate as many long-term “take or pay” contracts as financially feasible that were signed with IPPs during the investment period. Use government shares as currency to buy out contracts and facilitate the move to a competitive market.

- As a transition issue, establish a clear mechanism to calculate and compensate the owners of power plants for any verifiable stranded costs.

- Allow and foster wholesale power trading as an important pre-condition for a competitive wholesale and retail market, but be sure to put the conditions in place for such trading first.

- To establish a competitive market for generation, the ISO should establish and enforce a grid code — including a merit dispatch order and open access to the transmission system.

- Set up the pricing system so that wholesale prices for power decrease when there is a surplus of capacity and increase when capacity is short to signal the need to add new generation capacity at the right times and places.

  - Second best: Have the ISO solicit for new capacity as required.

- Allow contracts that generators hold for transmission access and transmission rights to be transferred to third parties, with a ceiling on the price of what the seller paid.

c. Transmission and Distribution

- Establish clear regulatory rules and a process for setting T&D tariffs.

  - Second best: Utilize regulation by contract.

- Carry out detailed transmission planning, remove bottlenecks, and establish a grid that supports the transfer of power between and within regions and between countries.

- Reduce theft and lower levels of collection, and legally ensure that new private owners can crack down on violators.

- Before privatization, the ISO should propose, and the regulator should establish, transmission rates that accurately reflect the cost of service, and take into account the distance over which the power is being transmitted.

- Transmission prices should signal to generators the need for transmission system development to expand access and remove constraints.

- Certain T&D services should be exempted from RPI-X regulation, and the companies should submit proposed prices directly to the commission for approval.

- Performance standards and tariff mechanisms for investors in T&D should not require frequent regulatory approval, so that investors have sufficient time to achieve performance targets.

- Train staff to ensure that good skills for grid operation are in place at the central and regional levels.

- Provide adequate customer data to all retailers equivalent to that available to the utility's affiliate to foster market entry by new retailers.

- Require the retailer affiliated with the local wires company to pay the same price for the use of the distribution lines as all other users.

- Ensure consumer protection in the competitive market through standards, access to information and provision of a standard offer service package.

4. Opening the Market and Carrying Out Privatization

a. General Principles

- Allow investors to optimize the staff required to best meet the competitive challenge and to serve customers, but establish principles for employment in the transition to private ownership. This may include stock ownership, training, early retirement packages, and limits on annual staff reductions.
- Give the private sector the flexibility to assemble the best consortium to bid for the project and operate it. Do not impose conditions such as requiring the use of government suppliers or local firms, or requiring the private sector to pay large fees.
  - Second best: Maintain a favored position for local firms for only a limited period to enable a government owned entity to adapt to new market conditions and also ensure that the acquiring firm trains local staff.
- Unbundle existing assets of government owned integrated power companies (including non-power subsidiaries).
  - Second best: Allow functional unbundling for a period of time.
- Strictly limit cross-ownership to restrict market power.
  - Second best: Allow cross-ownership during a transition period.
- To either obtain investment in new generation, before a competitive market is in place, or to sell existing generation and T&D assets, use a well-publicized, competitive, and open request for proposal (RFP) process.
- Do not predetermine what type or level of financing the winning bidder should use.

b. Generation

- In setting the price for which to purchase power, the buyer should focus on the credibility of the provider and the attractiveness of the price, not on the generators' potential rate of return.
- Organize the sale of existing power plants in a systematic manner — determine which plants will be sold, in what packages (if any), and carry out all sales within a short time.
- Unbundle and privatize existing power plants without granting long-term contracts in order to create competition sooner, along with more opportunities for customers.
  - Second best: Provide contracts for sale for a short period, in order to wean the producers off their captive distribution customers.
- To support the development of new capacity, make available government owned sites with existing power plants that are zoned for power project development.

- Utilize build-own-operate contracts for new projects, which provide fewer complications and a cleaner transaction than BOTs, and use rehabilitate-own-operate rather than rehabilitate-operate-transfer for existing ones.

    - Second Best: Utilize BOTs, and establish clear terms for the conditions of the ultimate transfer of the plant back to the government. Use concession agreements as a third choice, and grant long concession terms.

- Limit financial exposure to IPP contracts, and facilitate the emergence of a competitive market for generation.

- Allow the market, through price signals in the PX and power contracts, to determine when and where merchant plants will be added. Reverse RFPs, in which investors offer to build a plant only if there is sufficient interest, may also be an attractive option.

c. Transmission and Distribution

- Carry out the privatization of distribution systems using a flexible bidding system that accepts bids for one or more companies at the same time.

- Allow investors to provide power and other services (e.g., Internet, water supply and wastewater treatment, and security services) within a distribution enclave or industrial zone.

- The government should provide financing support, including the refinancing or absorption of some debt associated with the existing system.

    - Second Best: Debt can be restructured and left in the company, and purchasers will pay a lower price and can refinance the debt later.

- The ISO or entity other than the owner of the wires should undertake expansion of the transmission system and hold competitive tenders for this work.

5. Implementing the Changes Effectively

a. Generation

- Set government environmental, permitting and other standards for power generation so that investors can determine which types of plants to build.

- Support inside-the-fence or industrial zone generation to encourage other generators to become more reliable and cost-eftective, with limited commitment periods.

- After setting up a competitive wholesale market, regulate generation minimally to lower administrative and transactions costs.

b. Transmission and Distribution

- Regulate distribution rates with performance-based (e.g., RPI-X) or benchmark competition, with performance bonuses, to make these entities reliable and financially viable. The commission should not utilize pure rate-base regulation or self-regulation.

  - Second best: Set norms for utility performance (as in Philippines and Malaysia) that T&D companies should attempt to meet.

- Pass some efficiency gains in T&D to the consumer while maintaining the utility's incentives to increase efficiency.

- Conduct a pilot customer choice program at the distribution level, and then allow retail choice for all customers at the same time, or the same share of each customer type over time. Include a standard offer or price that small customers will receive if they do not choose to switch suppliers, and allow contracts for differences that limit price volatility.

  - Second best: Allow large customers to first have access to a choice of power suppliers, and move the size threshold down to all customers over a relatively short period.

- After establishing a retail market, the regulator should oversee retailers only minimally to lessen administrative and transactions costs.

D. The Role of ADB

ADB can play a key catalytic role in promoting private sector investment and competition in DMC's as follows:

- Providing models and encouraging the passage of legislation demonstrating government commitment to restructuring and privatization.

- Using its influence and regional experience to strongly encourage DMCs to commit to a program of privatization.

- Sponsoring country-specific studies on restructuring the power sector.

- Assisting in developing a legal framework through inviting international legal experts to advise on drafting laws to address issues central to investment in the power sector.

- Supporting the creation of an independent regulatory body.

- Organizing training seminars and long-term in-country advisors with industry expertise to enhance the skills and experience of employees of the unbundled utility and the regulator.

- Using its experience and financial expertise to advise on the privatization process itself.

- Assisting DMC governments in mobilizing capital by setting up facilities for infrastructure development in the power sector, and setting regulations for their lending policies.

- Assisting the DMCs in improving the operation of existing entities prior to privatization in order for the government to realize a higher sale price for the entity.

- Utilize build-own-operate contracts for new projects, which provide fewer complications and a cleaner transaction than BOTs, and use rehabilitate-own-operate rather than rehabilitate-operate-transfer for existing ones.

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- Limit financial exposure to IPP contracts, and facilitate the emergence of a competitive market for generation.

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- Support inside-the-fence or industrial zone generation to encourage other generators to become more reliable and cost-eftective, with limited commitment periods.

- After setting up a competitive wholesale market, regulate generation minimally to lower administrative and transactions costs.

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- Regulate distribution rates with performance-based (e.g., RPI-X) or benchmark competition, with performance bonuses, to make these entities reliable and financially viable. The commission should not utilize pure rate-base regulation or self-regulation.

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    - Second best: Allow large customers to first have access to a choice of power suppliers, and move the size threshold down to all customers over a relatively short period.

- After establishing a retail market, the regulator should oversee retailers only minimally to lessen administrative and transactions costs.

D. The Role of ADB

ADB can play a key catalytic role in promoting private sector investment and competition in DMC's as follows:

- Providing models and encouraging the passage of legislation demonstrating government commitment to restructuring and privatization.

- Using its influence and regional experience to strongly encourage DMCs to commit to a program of privatization.

- Sponsoring country-specific studies on restructuring the power sector.

- Assisting in developing a legal framework through inviting international legal experts to advise on drafting laws to address issues central to investment in the power sector.

- Supporting the creation of an independent regulatory body.

- Organizing training seminars and long-term in-country advisors with industry expertise to enhance the skills and experience of employees of the unbundled utility and the regulator.

- Using its experience and financial expertise to advise on the privatization process itself.

- Assisting DMC governments in mobilizing capital by setting up facilities for infrastructure development in the power sector, and setting regulations for their lending policies.

- Assisting the DMCs in improving the operation of existing entities prior to privatization in order for the government to realize a higher sale price for the entity.

- Advising DMCs on establishing a well-publicized, competitive and open RFP process to award the right to develop greenfield projects or sell existing government assets.

- Helping DMCs develop standard IPP contracts that are internally consistent and which meet international standards.

- Funding and assisting in the organization of a program to educate the employees of government owned assets and the public on the need for privatization in the power sector.

- Finally, ADB could improve the investment climate and facilitate better economic decision making that will support private sector investments.