Mitigating Risks in Power Reform—
A New World Bank Lending Approach

Power sector reform in the Indian state of Haryana

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The World Bank has agreed to support power sector reforms in Haryana with a new type of lending instrument—the adaptable program loan—recently approved by its board of directors. Under this approach, being applied for the first time, the Bank will provide a series of loans totaling US$600 million over eight to ten years, but will commit the loans only when the state government has reached agreed milestones. This approach allows the state government milestones—not the covenants of standard World Bank loans—to determine the timing of controversial actions. The flexibility is intended to improve the reform program’s chances of success and avoid the stop-start lending pattern that has characterized the Bank’s past lending to state electricity boards. This Note explains Haryana’s reform strategy and how the adaptable program loan applies. Haryana’s reform could have an important demonstration effect.

The power sector of the northern Indian state of Haryana is in poor physical and financial condition. To put the sector on more solid footing, the state government has announced a ten-year program of comprehensive reform to restore its creditworthiness, create an environment conducive to private investment, and eliminate the power deficit. The government will create an independent regulatory commission, unbundle the sector, privatize distribution, and rely on the private sector to create additional generation capacity. It will also rationalize tariffs, notably for power supplied to agriculture, the state’s dominant sector. The strategy is expected to help mobilize about US$5 billion in investment in generation, transmission, and distribution from independent power producers, distributors, central and regional utilities, and Haryana’s state-owned central utilities.

Implementing the reform program will be complex, however, and will entail significant risks, particularly political ones. The sector is dominated by the Haryana State Electricity Board, a state-owned, integrated utility with a monopoly on transmission and distribution. (Although generation was opened to private independent power producers in the early 1990s, there were no takers. Project sponsors were unwilling to enter the market given the power off-taker’s dismal financial condition and the federal government’s unwillingness to extend sovereign guarantees.) As Haryana’s policymakers now largely recognize, the root cause of the sector’s problems is the lack of a commercial outlook in operations and investment and the multiplicity of goals the Board has to pursue (box 1). The Board has been required to charge low tariffs to farmers and residential consumers and to refrain from using normal remedies to collect bills and to eliminate large nontechnical losses. Over the years the Board has been transformed into an extension of the state government.
rating the Board into a generation company, a transmission company, and several distribution companies. Initially the industry structure will follow the single-buyer model; later, it is expected to evolve to wholesale competition.

Third, the government will privatize distribution and rely on the private sector to develop additional generating capacity through a competitive bidding process. It may also allow power imports from neighboring states and from Nepal. The distribution companies, which serve about 3 million consumers, will be privatized through the sale of equity to private strategic investors, with the state keeping a minority equity stake. The first privatization should be completed by the middle of 1999 and the rest before the end of 2001. There is growing consensus in India that privatizing distribution is the best way—if not the only way—to reduce the huge nontechnical losses plaguing the sector. Generation and transmission assets may also be considered for privatization in the long run. In the short term, however, the government of Haryana prefers to focus its privatization efforts on what is most essential to the success of the reform—distribution. Success on that front is expected to ease later privatization efforts in generation and transmission.

Fourth, bulk power, transmission, and retail tariffs will be rebalanced. Over the next four years retail tariffs will be progressively adjusted to restore the creditworthiness of the utilities and to reduce the subsidies given to agricultural and domestic users. By 2001–02 utilities should achieve a return on net worth of at least 16 percent, with a self-financing ratio of at least 20 percent.

Finally, the sector will undergo comprehensive financial restructuring. The state government will forgo its equity and loans to cover accumulated losses, write off losses and contingent liabilities, and provide temporary support to the new utilities. In addition, the Board will discuss with its creditors the possibility of rescheduling some current liabilities and other obligations. This financial workout would in-

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**BOX 1  THE PROBLEM**

The Haryana State Electricity Board, a state-owned, integrated utility with a monopoly on transmission and distribution, cannot meet the demand for electricity. Power shortages exceed 25 percent, costing Haryana’s economy some US$350 million to US$400 million a year, 4.0 to 4.5 percent of the gross state domestic product. For eight years the Board has been unable to afford to add to its generating capacity, which remains at about 2,400 megawatts.

System losses are estimated to exceed 40 percent, and more than half are nontechnical losses (unmetered and unbilled supply, uncollected bills, power theft, pilferage). Power stations operate at an average load factor of only about 45 percent, mainly as a result of poor physical condition, the low quality of coal, and its irregular supply (due in part to the Board’s poor payment record).

By March 1997 the Board had accumulated financial losses of more than US$850 million, it had a negative worth of US$72 million, and overdue liabilities to suppliers (mostly bulk suppliers of fuel and electricity) exceeded US$250 million. In the past eight years the state has granted the power sector more than US$1 billion in direct and indirect subsidies, equivalent to about 70 percent of the state’s fiscal deficit.

**The reform strategy**

The comprehensive reform program announced by the state government has five main features.

First, the government will develop an autonomous regulatory agency that will issue licenses to transmission and distribution companies and regulate the tariffs and performance of power utilities, whether owned by the government or the private sector. Creating this agency should be a major step in depoliticizing the sector and reducing interference by the state government, especially in tariffs.

Second, the government will unbundle generation, transmission, and distribution, thus sepa-
volve restructuring about US$1 billion of liabilities. But after 2002 the power sector will be able to meet its debt service obligations and become a net contributor to the state budget by paying returns on the state's equity.

Under the investment program new generation capacity will be developed by central and regional utilities (20 to 30 percent of the additional capacity needed) and private interests (70 to 80 percent). Rehabilitating the existing generation facilities and rehabilitating and expanding the transmission and distribution network will require about US$1.8 billion. Funding will come from the World Bank (33 percent), bilateral donors (14 percent), the Haryana state government (16 percent), and internal resources generated by the new power companies (12 percent), with private equity and Indian and foreign commercial banks providing the balance.

**Implementation risks**

The success of the proposed reforms hinges on the state government's ability to achieve three main goals.

First, the state government must be able to significantly increase tariffs over the next four years, especially for electricity supplied to agriculture, which accounts for about 45 percent of the market (compared with 23 percent for industry and 19 percent for residential consumers). Haryana is one of the few states in India in which power rates for agriculture are more than the roughly 1.3 U.S. cents per kilowatt-hour minimum set by a conference of chief ministers at the end of 1996. Most states still provide farmers with free power (as in Punjab and Tamil Nadu) or charge them less than the minimum.

Second, the state government must be able to privatize distribution. The move toward privatization will generate forceful opposition from different constituencies and on various grounds: ideology, employee fears of layoffs, concern about undue increases in tariffs, and unwillingness among vested interests to give up their benefits.

And third, the utilities must be allowed to function as autonomous, accountable, and commercial entities without any external daily interference or micromanagement. They should be expected to pursue only commercial and efficiency objectives; they should not be expected to pursue any social objectives that the state government may have and that in any case would be better achieved through other means.

The complexity of the reform poses another important risk. The program will be both technically and administratively challenging, as demonstrated by a similar reform program launched about two years ago in the Indian state of Orissa and partly funded by the World Bank. The proposed changes are based on concepts and mechanisms new to most of the people who will have to implement them. The program will require increased institutional capacity and a new management culture and attitudes. Full implementation will take about ten years. Among the complex issues that the government of Haryana will have to address:

- Moving from an integrated, monopoly utility to a structure in which several generating companies, a transmission company, and several distribution companies will trade power and operate on a commercial basis.
- Moving from a culture dominated by engineering and technical performance standards, physical targets, administrative controls, and a complex system of accountability to a culture in which the overarching principles, beyond technical excellence, will be quality of service, customer satisfaction, economic and financial efficiency, and clear accountability.

There is a growing consensus in India that privatizing distribution is the best way to reduce huge nontechnical power losses.
Moving from a regulatory mechanism in which the key players are the state government and the State Electricity Board to a regulatory mechanism based on an autonomous commission acting independently, following quasi-judicial procedures, conducting public hearings, and assessing tariff adjustment cases from an efficiency perspective.

- Transferring staff, assets, and liabilities from a single entity to several new corporations, and delineating new service territories for the distribution companies.
- Procuring additional power of about 3,000 megawatts, largely from private sources and through competitive bidding, in five to eight years.
- Privatizing distribution, which will require carrying out extensive preparatory work (asset valuation, financial viability analysis, formulation of bidding documents), defining a privatization strategy, negotiating joint ventures, and dealing with labor, legal, and other complex issues.
- Executing an investment program over the next ten years of about US$1.8 billion, five to six times the size of the Electricity Board’s past programs.

One indication of the complexity of the program is the amount of technical assistance required. Despite all the benefits that Haryana is gaining through learning from the Orissa experience, the technical assistance budget exceeds US$30 million.

**Mitigating risk**

Mitigating the risks of the reform program poses challenges not only for the reformers in Haryana, but also for the Bank (as adviser and partner to the state government) and for the bilateral agencies that have agreed to provide assistance. The first challenge was to set the right expectations. The state government needed to get the assurance of long-term financial support and it needed to deliver better service early in the reform process to show that something concrete was happening. But from the Bank’s perspective it was important to reconcile the need for early support with the risk that the reform could be slowed or even reversed. The Bank’s past experience in lending to state electricity boards has been disappointing: of about US$1,800 million in loans committed for state electricity boards, only one-quarter has been disbursed, with the balance canceled because covenants and other commitments could not be met.

The second challenge is to break a vicious circle. Farmers and other consumers will pay higher rates as long as they see more and better-quality power and do not bear the costs of inefficiencies. Experience in Rajasthan bears this out: a scheme in which farmers without electricity but ready to pay the full cost for it will receive immediate service connections (rather than waiting for years) has elicited broad interest. In most states farmers use diesel generators as a backup or substitute for grid-supplied power, producing power at a much higher cost (3.5 to 4 rupees per kilowatt-hour) than that for power from the grid (about 0.6 rupee). Thus the acceptability of the reforms and the state government’s ability to sustain them are directly linked to progress in improving the quantity and quality of supply. The highest priority for the government is therefore to undertake early investments that will reduce system losses—and thereby reduce the tariff hikes needed to cover costs—improve power supply, enhance revenue collection, and lower energy requirements through end-use efficiency improvements.

The third challenge is to deal with the uncertainties and complexity of such a reform program. Clearly, it would have been impossible to define at the beginning of the program all the parameters of the policy measures and of the physical components of the Bank’s support—something that would have been required using existing Bank loan instruments.

**What is different about the adaptable program loan?**

The situation Haryana’s government faces is not unique. The Bank recognized its clients’ need...
for a new instrument allowing a long-term commitment from the Bank to support long-term programs and policies, early support to help overcome initial difficulties, and flexibility to benefit from the lessons of experience and adapt to evolving situations—something existing instruments did not allow for. The adaptable program loan is the instrument it developed to meet this need.

**Adaptable loan structure**

In January 1998 the Bank’s board of directors endorsed Haryana’s reform program and approved a first loan of US$60 million as part of a long-term assistance program of up to US$600 million, dispersed over eight to ten years. The subsequent loans for which the board has delegated approval authority to the Bank’s management (subject to certain procedural conditions) will be processed once agreed milestones have been achieved.

The loan was approved after the state government had demonstrated its political commitment to reforms. It had conducted an extensive public debate on the reform program, and the State Assembly had passed the Haryana Electricity Reform Bill, a major step in implementing the reform. (A standard lending operation would have required much more progress on the reform agenda before commitment of a Bank loan. But that would have delayed Bank support at a time when this support is critical.) The loan will help finance investments in transmission and distribution to increase the supply and quality of power in selected areas where the results will be most visible. It will also finance improvements in customer service (for example, in the operation of complaint centers and in billing procedures) and new safety equipment for staff. Several bilateral donors have agreed to finance a comprehensive program of technical assistance to start the institutional development of the new power sector entities.

If Haryana’s government keeps its current reform schedule and makes timely procurement decisions, the second loan, of US$150 million to US$200 million, could be extended in late 1998 or early 1999. This loan would be aimed at helping to sustain the major reforms and supporting tariff adjustments, notably for power supplied to agriculture. The loan would finance the continuation of the investment program in transmission; basic distribution equipment (meters, transformers, capacitors) and the rehabilitation of more distribution segments; and demand-side management and energy conservation measures (such as replacing inefficient water pumps) to ease the impact of rural tariff increases.

### A significant difference between the traditional and adaptable program loans lies in the way commitments from the clients are handled.

The second loan’s schedule and amount will depend on progress in the investments financed under the first loan, new investment requirements, the pace of procurement decisions, and contributions from other sources (Japan’s Overseas Economic Cooperation Fund and Germany’s KfW are actively considering financing part of the second phase of Haryana’s investment program). The milestones that Haryana’s government will have to achieve before this loan is committed include establishing the regulatory commission and the new power utilities, completing the financial restructuring, and achieving significant progress toward privatization of the first distribution company.

A third loan, for about US$200 million, could be committed in 2001 or 2002. This loan would support the expansion and rehabilitation of the transmission and distribution network. Again, the schedule and amount of the loan will depend on progress in the reform and investment programs and the sector’s ability to mobilize financing from other sources. The loan would be committed once most of the distribution busi-
ness has been privatized, tariffs have been adjusted to meet agreed financial targets, and all other reforms have been implemented as agreed.

Depending on the sector's needs, one or two more loans amounting to about US$200 million would be committed around 2004–05. As with the previous loans, the schedule and amount of these loans would be based on progress in implementing the reforms and related investments. The milestones triggering these loans have been broadly defined. They include full privatization of distribution, full restoration of the sector's creditworthiness, and further evolution of the power industry (for example, toward a multiple-buyer model).

### Investment and sectoral adjustment loans

The adaptable loan offers several advantages over the Bank's investment loans and sectoral adjustment loans to address situations like Haryana's. The standard investment loan covers only about five years and is committed only after a number of reform measures have been completed, in an attempt to ensure irreversibility of the reform. This is the approach used to support the pioneering Orissa power sector reform; a US$350 million investment loan was approved by the Bank in 1996, when the adaptable program loan was not yet available. With strong political support from the start and commitment from reform-oriented administrators, Orissa was able to take the up-front measures that enabled the Bank to approve the loan. Some of the circumstances under which the reform was initiated in Orissa were unique: agriculture's share of the power market is quite low (about 7 percent of power sales), tariffs have been regulatory adjusted, and the state does not incur power shortages to the same extent as other states, including Haryana.

A World Bank sectoral adjustment loan might, by contrast, be used, when a country faces balance of payments problems. For Haryana this lending instrument would have been less appropriate than an adaptable program loan for several reasons. A sectoral adjustment loan is disbursed in tranches, after specific conditions have been met, not against expenditures, so the link between the physical components of the investment program and the reform program would have been lost. Extending a sectoral adjustment loan over ten years would have been too long for this type of instrument (and a commitment to provide several shorter loans would not have been possible), and the commitment fees paid by Haryana's government would have been very high. And, finally, the conditions under which the tranches can be released would mean the loss of an important element of flexibility.

A further significant difference between these traditional loans and the adaptable program loans lies in the way commitments from clients are handled. In the traditional approach these commitments are covenanted in the legal agreements among the Bank, the borrower, and the beneficiary institutions. Under an adaptable program loan the commitments are milestones that trigger the processing of subsequent loans. A covenant and a milestone are two very different things. A covenant is part of a set of legal commitments on which the Bank has premised its decision to lend. A borrower's failure to meet a covenant constitutes a breach of commitment, and the Bank may have to take remedial actions, including suspending disbursement and canceling loans. These actions are essentially punitive and almost inevitably lead to difficulties in the dialogue between the Bank and the borrower.

A milestone is a target set by the borrower that the Bank has agreed to consider a trigger for processing subsequent loans. The decision to achieve this target rests exclusively with the borrower, and availing itself of a loan from the Bank is only one of the factors in that decision. If achievement of the milestone is delayed, additional lending may be postponed, but the onus will rest with the client.

### The benefits

From the Bank's point of view this proposed approach greatly mitigates the implementation
risk: its initial financial commitment is limited, and additional commitments are contingent on the completion of concrete reform steps. But once each loan is committed, the funds will normally remain available for disbursement unless there is a clear indication that the reform program is being reversed or there is a continuous breach of basic covenants. A slowdown in reform would defer the next loan, but support to investments initiated under preceding loans may not be affected. That ensures continuing support to Haryana during times of difficulty in implementing reform, even if additional lending remains on hold.

The progress of the reform program will depend on how well Haryana can manage multiple constituencies to maintain a consensus for reform. The adaptable program loan approach will enhance the reform program’s chances of success if the flexibility of the loans and of the milestones can be maintained, so that Haryana’s government, not strict dated covenants, determines the timing of controversial actions. This flexibility provides important reassurance to the government, and to other states governments, that the Bank will remain an active partner in the reform program, including during times of trouble.

The proposed power reforms could have an important demonstration effect. Haryana is a high-profile agricultural state near Delhi. If successful, the program could help trigger reforms in other agricultural states facing similar problems and challenges.

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