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ECO

Energy Conservation and Commercialization Project

A Program of USAID, Ministry of Power and ICICI

**REPORT ON
ESTABLISHING
SELECTION CRITERIA
AND
SELECTION OF THE
FOCUS STATE
(MILESTONE 11A)
November, 2000**

USAID Contract Number: LAG-I-809-98-00006-00

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A

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Preface

This report is a deliverable for Milestone 11A, establishing selection criteria and selection of the Focus State, of the ECO project. The report covers work under this Milestone, from June 2000 through November 2000.

The ECO project is being implemented by Bechtel National Inc (Nexant Inc) under a USAID contract, LAG-I-00-98-0000. This contract has been issued by the USAID Mission in New Delhi as a part of the IQC (Indefinite Quantity Contract) currently in place through USAID's Global Bureau. The project contract was signed on February 29, 2000, and continues through December 2003.

Executive Summary

This is the initial task for the Demand Side Management (DSM) work under the ECO project. Essentially this task is to select the utility in which the DSM work will be developed. The first step in this process was to develop selection criteria that could be utilized in comparing utilities. Once this was completed, the second step was to select the utility or Focus State. This second phase was further broken down into several steps, including conducting discussions with many different parties, including other donors, in order to develop a short list of candidate states. Once this short list was developed, each state was contacted to solicit its agreement to participate in our review and selection process. Interested states were then visited, and meetings held with high-ranking officials in the utility, the State government, and the regulatory commissions. These meetings were held to obtain information pertinent to the selection criteria, so that the utilities/ states could be compared. This process was developed so that all significant factors could be compared between the utilities. Based on this process, the Focus State utility was selected.

This selection is critical, since efforts for the next three years depend upon initiative and participation of the counterpart utility. Therefore this task was very thoroughly conducted, to ensure that a comprehensive and complete status of the electric utilities within India is properly understood.

This task was undertaken by Nexant staff, in collaboration and with input from the following:

- Ministry of Power
- ICICI
- USAID
- The World Bank
- Asian Development Bank
- Previous USAID projects, specifically EMCAT project- activity 17 on Power Sector Reforms and restructuring
- Various NGO/ESCO/Individuals who are knowledgeable with the Indian Power Sector

The initial effort began with a short list of States to be considered as the Focus State. This short list was developed by USAID staff, based on interactions/discussions with ICICI and MoP and the status of reforms, regulatory commission establishments functional in those states. The short listed states were:

- Andhra Pradesh
- Karnataka
- Rajasthan

- Uttar Pradesh

During the evaluation process, two additional states were added. These were:

- Madhya Pradesh
- Gujarat

A letter was drafted by Nexant staff and forwarded to the Ministry of Power for review. The letter was then sent by the Ministry of Power to the above states. The letter introduced the ECO project, and invited the states to express their interest in being considered as the Focus State for DSM activities. All of these states who responded to the MoP letter were visited during the evaluation process. Uttar Pradesh was not visited because they did not express interest at that time.

To facilitate the selection process, detailed selection criteria were developed. The main parameters that were considered dealt with issues pertaining to the three main bodies (the SEB or utility, the State government and the Regulatory Commission. The selection was based mainly on the willingness and commitment of these organizations to move forward with reforms (unbundling of the utility into separate entities, including generation, transmission, and distribution companies), support for energy efficiency programs and ultimately DSM. Certain other aspects related to management, commercial and technical areas of the SEB/Utility as well as support level and views of state government and regulatory commission were also considered. Financial status of the utility, credit risk rating, and the possibility of funds from other donor programs and agencies were also considered.

The selection criteria were used to develop a set of questions for each State and utility to be visited, to ensure that the same questions were asked. The criteria were summarized into three main categories: policy, institutional and technical issues. In order to weigh the various parameters, a matrix was designed so that responses supplied by the individual states could be assigned a mathematical value. All values for each state were then totaled, allowing a direct comparison to be made between the states. This technique was developed to reduce or eliminate any subjective details in the overall process.

Several individuals visited each state. Nexant staff participated in all visits, typically accompanied by staff from the Ministry of Power, ICICI, and USAID. Visits to the states were scheduled so that the ECO participants could meet at a minimum with the State

Secretary of Energy, the utility or SEB chairman, and the chairman and members of the State Regulatory Commission. Wherever possible, meetings with other members of the utility were also scheduled. Each visit was conducted in order to gain a better understanding and knowledge of the utility, State Government and Regulatory Commission. The information and data collected were entered into the evaluation criteria matrix that had been previously developed.

Initial information gathered during meetings and from background material was entered into the matrix, and points were awarded according to the matrix values. In this evaluation process, Rajasthan emerged as the primary choice for the Focus State, and Karnataka second. This initial evaluation result was discussed with all ECO counterparts. After these discussions, the Ministry of Power supported the idea of selecting two Focus States and not just one. The reason was to provide better geographical coverage to the country, rather than having just one Focus State. The selection of the Focus State is very important because it will be the beneficiary of not only training but also direct technical assistance from both U.S. and Indian consultants. There are no provisions within the existing ECO contract to provide direct technical assistance to more than one state. Therefore, it was decided to select one Focus state for the benefit of providing direct technical assistance to that state, but the training programs would be open to all states. In addition, it was suggested that special effort be made to ensure that other utilities participate. Subsequently, a list of ten states was proposed, each of which would constitute the Core Group to receive DSM training.

Following initial evaluation, a second visit was made to Rajasthan, so that additional members of the ECO project team and stakeholders could also evaluate the choice. The response during this second visit was also extremely positive, and based on all of the data and information collected, it was decided to finalize Rajasthan as the focus state. In November 2000, a team representing USAID, ICICI, MoP, and Nexant traveled to Jaipur to meet with the Rajasthan Secretary of Energy and members of the utility and regulatory commission. These meetings were to formally announce the selection of Rajasthan, and to initiate the planning process for the next steps to be taken.

Nexant staff will now develop a DSM personnel structure chart and reporting chart to be presented to the utility. Once this information is received and discussed, the utility will begin to identify individuals for the required positions. Following the establishment of the DSM cell, Nexant will plan technical assistance to the utility, to work with the newly formed DSM cell. Most training programs include multiple sessions of the same program. Therefore it was determined that one session of each training program will be held in Rajasthan, with a second session in the South. The Core Group will be invited to

send three to four members to each training program, with the intent that this information then be transferred to each utility within the Core Group.

Information collected during the meetings, and background material provided by the various parties, were reviewed and then entered into the matrix. Each aspect was critically examined and analyzed for comparison among the states visited. Certain states did not furnish any information in terms of background material. Therefore more importance was given to information obtained during the meetings. Several attempts were made to secure missing information from the states of Madhya Pradesh and Gujarat. However, in some areas the information was never provided. In these categories a blank was left, meaning that zero points were scored for that category. Finally, based on the detailed analysis and the outcome of the matrix rating, Rajasthan emerged as the best choice for focus state, with Karnataka the second choice.

Background

The importance of energy conservation has been well recognized by India, and USAID and other donor agencies have provided substantial assistance in the past decade to help improve the efficiency of energy use. However, in view of the enormous potential that remains untapped, these efforts need to be continued and expanded.

India is currently the world's sixth largest and second fastest growing source of global Green House Gas (GHG) emissions. Coal-fired power plants, which constitute the majority of the electricity supply resource in India, are the single largest source (48 %) of GHG emissions. To meet the existing deficit and growing power demand, new supply facilities are being planned and added at a phenomenal rate. The shortages in power supply continue to exist, which remains a major bottleneck to the rapid industrial and economic growth of the country.

India's power sector has been noted for several important problems:

- severe shortages of energy supply (both energy and demand capacity), resulting in frequent black-outs in many regions;
- cross-subsidization of sectors, with industry bearing a large portion of the burden of costs; and
- high transmission and distribution (T&D) losses (comprised of both technical and 'non-technical' losses).

Energy shortages have existed for many years, with ten percent normally quoted as the figure. Recent growth of the middle class, and growing demand for consumer goods, has exacerbated this situation. An 8-9% growth in electrical demand per year for the next several years is predicted. In addition, new power plants have been slow to come on line, and foreign investment in power plants has had a difficult time in recent years. The Enron - Dabhol plant came on line in 1999, producing 740 MW in the first phase. The second phase, 1440 mW, is due to come on line in the near future. But the cost of producing power at the plant is so high, the Maharashtra State Electricity Board (MSEB) cannot afford to buy it. The cost per unit from that plant is three and a half times that which MSEB pays to produce its own power.

T&D losses is another problem area. For years, everyone talked about the problem and indicated that the losses were approximately 21-24%. This number is huge when compared to those in western countries, which are about 5-7%. Included in these 'losses' are non-technical losses, which translates to theft and non-payment of bills. The

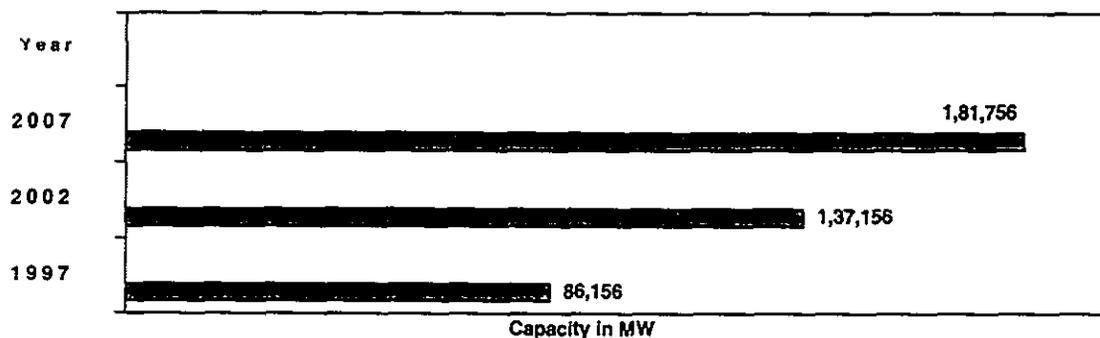
agricultural sector is a main component of these non-technical losses. And even where the farmers do pay, their tariff is extremely low. The recent move to unbundle and privatize the SEBs has lead to further realizations. Recent information reveals that the actual rate of T&D losses is between 40 and 60%! One utility put out tenders for privatization – and received no bidders. While the energy supply scenario in India is bleak, it further underscores the need for energy efficiency improvements. Following is a summary of the country's electrical generation:

INDIA'S ELECTRICAL GENERATION

	CAPACITY PLANNED	CAPACITY ADDITION	TOTAL CAPACITY AT THE END OF PLAN	CAPACITY WITH STATE SECTOR	CAPACITY WITH CENTRAL SECTOR	CAPACITY WITH PRIVATE SECTOR
	MW	MW	MW	MW	MW	MW
7th FIVE YEAR PLAN (1987-1992)	26000	21051	63636	44708	16286	2642
8th FIVE YEAR PLAN (1992-1997)	30538	17667	86156	54466	27040	4650
9th FIVE YEAR PLAN (1997-2002)	51000	-	** 137156	-	-	-
10th FIVE YEAR PLAN (2002-2007)	44600	-	** 181756	-	-	-

** (ASSUMING 100 % CAPACITY IS ADDED)

Projected Capacity Requirement



Efficient use of electricity and reduction of transmission and distribution (T&D) losses would minimize the requirements of additional power generation. This could result in considerable reduction in the rate of growth of GHG emissions. Various studies conducted indicate that there is an enormous opportunity for cost-effective, end-use efficiency improvements in various electricity consuming sectors.

The ECO Project was designed to promote wide spread commercialization of energy efficiency technologies and services in India, thereby contributing by not only reducing the shortages and T&D losses but also reducing the growth of GHG emissions. Under this project technical assistance (TA) and training will be provided to develop a market-oriented environment for commercialization of energy conservation and enhance the capability of financial sectors in deploying market-based mechanism for energy efficiency investment.

At the state level strategies will be developed and assistance provided to a utility in the focus state to introduce DSM/energy efficiency improvement under the regulatory environment. The utility will be assisted in establishing a DSM Cell, assessing the staff requirement, infrastructure facility needed and providing training.

Within the Cell capacity will be built in the areas of planning, designing, screening, implementing and evaluating DSM/Energy Efficiency Programs and policies. The DSM Cell will be assisted in developing consumer awareness and promotional programs. Designing and implementing load research programs will be taken up, to provide valuable information for DSM Program design, impact analysis of tariff aspects on consumer usage pattern and related studies on rates and engineering design of distribution network. This will assist the DSM Cell in identifying the scope, length and type of energy efficiency measures based on detailed screening and cost benefit analysis. It will also enable designing of short term and long term DSM plans. Assistance will also be provided to the DSM Cell to have networking with financial institutions capable of designing and developing energy efficiency financing schemes.

It was also decided to provide training to as many states as possible, so that the pertinent information on DSM and energy efficiency improvements can be received, understood and practiced by all the states that need this. To further this effort, the Ministry of Power suggested formalizing the DSM training programs by trying to organize state participation. The suggestion was to form a Core Group of ten states, in which each state would be requested to nominate three to four individuals to attend each of the training programs. This would help not only to formalize the training to the states in the area of DSM/Energy efficiency but also make sure that the expertise and knowledge provided by the training is passed on and used by the states. These trained individuals should be the ones named to form DSM cells within their own SEB or utility. This core group is

currently being named, so that when the training programs begin, they should already be in place. The core group is to be comprised of the following states/utilities:

North Core Group

Uttar Pradesh
Rajasthan
West Bengal
Madhya Pradesh
Delhi

South Core Group

Gujarat
Karnataka
Andhra Pradesh
Tamil Nadu
Maharashtra

The core group members will be notified of all training programs, and it is hoped that they will participate in all of these events. The training programs will remain open to all interested parties, but special effort will be spent to ensure participation of the core group states.

Selection Criteria

The process of determining how to select a focus state was carefully considered. In order to facilitate the selection process it was decided that it was necessary to establish a set of selection criteria. The criteria would enable the evaluators to judge important parameters of each state, and ultimately to make comparisons between the states/utilities. The criteria to be considered were proposed and discussed with all stakeholders. The criteria included defining parameters pertaining not only to the utility itself, but also to the state government. It was felt that it is important that the state government be supportive of the utility reforms, energy efficiency and DSM programs, and that this support should also be measured by the criteria. The criteria were accordingly modified based on comments received from the various parties.

The criteria fell into three main categories: policy, institutional, and technical.

Within the policy area, parameters evaluated include:

- 1) attitude towards reform,
- 2) tariff reform status,
- 3) agricultural tariff reform status,
- 4) electric duty structure, and
- 5) subsidies.

The institutional parameters include:

- 1) willingness to participate in reforms,
- 2) support level,
- 3) reform status,
- 4) status of regulatory commission, and
- 5) credit/risk rating.

Parameters evaluated under the technical area include:

- 1) T & D loss percentage,
- 2) voltage and frequency stability,
- 3) provision for combating commercial losses,
- 4) time of day tariff, and
- 5) planning.

It is worth noting that certain details are subjective and difficult to assess, such as the willingness of the State/SEB to support or participate in DSM and energy efficiency programs. However, through discussions, interviews and past experience and knowledge of the Indian Power Industry, impressions were formed for each of the

selection criteria. Certain details were also obtained from the Annual Reports and data provided by the SEBs. The willingness was also measured by possible involvement or presence of donor organizations within the state to support reforms. The process of evaluating the states/utilities essentially represents a 'snapshot' in time. This reflects the current climate not only politically within the state but also the status of the reforms within the utility and regulatory commission. While the status of each state will change with time, the 'snapshot' comparison puts all states on an equal basis, and allows for an objective comparison between them.

These criteria were used to develop a matrix, so that the responses from each state/utility could be easily viewed and compared. Responses and data obtained are evaluated and entered on a numerical basis, with the higher number of scores being the most desirable. As most of the attributes were subjective in nature, a scoring system as shown below was followed, for ranking each state against a particular attribute.

<u>Characteristic</u>	<u>Scores</u>
no response	0
below average	1
average	2
better than average	3
very good	4

Each criterion was considered separately when interviewing the state and SEB/utility personnel, and then given scores accordingly. A 'perfect' score would therefore have a 4 for each parameter, while an average response would score values of 2. It was felt that within the criteria, certain parameters have more merit or value than others. Therefore a system to weigh the criteria was incorporated into the matrix. While this weighing factor is subjective, it provides a method of indicating which criteria are the most significant.

Numerous discussions were held at the start of this task about the idea of developing a short list of candidate states to be considered. After many discussions and personal interactions with members of SEBs, utilities and regulatory commissions, other donor nations, institutions, and ECO project counterparts, a short-list of four states was developed. The list was developed on the basis of which states were the most likely to be ready to un-bundle and to participate in energy efficiency DSM programs. The short-listed states were:

Andhra Pradesh (AP)

Karnataka
Rajasthan
Uttar Pradesh (UP)

To encourage their interest in participating in the ECO program, a letter of introduction was drafted by Nexant for the Ministry of Power. This letter was then sent by Mr. Shashi Shekhar of the Ministry of Power to the Energy Secretary of each of the above states. The letter (see Appendix A) introduced the ECO program, and described the objective of identifying a focus state. The letter provided details of the benefits for the focus state, specifically in receiving technical assistance and training on DSM and energy efficiency to the utility staff. It also explained that several states were being considered, and that an evaluation process would be conducted in order to select the state.

Responses to the letter of invitation were received from AP, Karnataka, and Rajasthan. Since no response had been received from UP, Ministry officials called them to solicit their interest in the ECO program. It was indicated in this phone call that, while they were interested in the program, the timing was not good for them, as they had several pressing issues that they had to deal with and could not participate in the ECO program at this time. Based on the responses, meetings were set up with the SEB/utility Chairman, the State Energy Secretary, and the chairman of the regulatory commission in each state. These meetings began at the end of June, 2000, with the first evaluation visit to Bangalore.

It was decided that a team of representatives from the Ministry of Power (Government of India), USAID and Nexant would visit and evaluate each of the candidate states. The team was represented by:

<u>Name</u>	<u>Organization and title</u>
Mr. Shashi Shekhar	MoP, Director of Energy Conservation
Dr. Ashok Sarkar	USAID, ECO Project Manager
Mr. Anil Malhotra	ICICI, Vice President, Technology
Division	
Mr. Jaisingh Dhumal	ICICI, Asst. V.P., Technology Division
Mr. Charlie Fafard	Nexant, ECO Chief of Party
Mr. V.M. Thakor	Nexant, ECO Sr. Consultant

It should be noted that everyone was not able to participate in all trips, but for most visits at least three persons participated. It was also thought desirable to meet NGOs and ESCOs located in these states, and this was done to the extent possible.

The initial visits were conducted, and the information gathered and observed was entered into the selection criteria matrix. The initial evaluation indicated that Rajasthan was the highest ranked state, and therefore the preferred state. This judgment was based largely on their willingness and commitment, progress towards unbundling and readiness to set up DSM cells within the newly formed distribution companies. Details of the states visited and meetings held are given in Appendix B.

This initial ranking was discussed with the individuals indicated above, and it was decided to evaluate two more states before finalizing the selection. Therefore, Madhya Pradesh and Gujarat were added to the list. The Asian Development Bank is active in these states, and it was deemed prudent to include them in our analysis. They were visited and meetings were held with the state Secretary of Energy, chairman and members of both the SEB and the state regulatory commission. Since no background material was provided by these states, information gathered during the discussions was entered into the matrix, and then all five states were compared. The chart below compares several parameters of the candidate states. It should be noted that Rajasthan has started the privatization process, by putting out tenders for consultants. The consultants are expected to be hired within a few weeks. The results of this additional evaluation again resulted in Rajasthan as the recommended state. Background material obtained from the site visits is contained in Appendix C.

State	Generation MU	Shortfall MU	Peak Demand MU	PLF %	Initiated measures for T&D loss reduction	Unbundling	Privatization	Regulatory Commission
Rajasthan	9,208	1,131	3,672	82.8	Yes	Implemented	Started	Operational
Madhya Pradesh	22,605	2,655	6,836	82.8	No	Study being done	Not done	Operational
Gujarat	25,311	4,208	7,554	69.3	No	Study being done	Not done	Operational
Karnataka	2,495	2,350	4,591	49.5	Yes	Implemented	Not done	Operational
Andhra Pradesh	32,115	3,003	7,209	82.0	Yes	Implemented	Not done	Operational

Selection Analysis and Recommendation

Following development of the selection criteria, the short-listed states were visited, using the selection criteria as a basis for the evaluation. To assess each state in an equitable and fair manner, a numerical matrix was developed. Responses to questions and observations made during the state visits could then be entered for each state, and the values ultimately totaled. In this manner, the suitability of each state as the Focus State could be evaluated.

Out of the four short-listed states, Andhra Pradesh, Karnataka and Rajasthan were visited and meetings were held as per the details given in Appendix B. Uttar Pradesh did not respond to the initial request, and subsequent discussions between the central government and the state government indicated that DSM was not a priority to them at this time. Following these initial state visits, it was decided to also visit Madhya Pradesh and Gujarat.

A summary of site visits to the five candidate states is given in Appendix D, which highlights major issues faced by the SEBs/utilities. Important observations made during the site visit are summarized in the tables below. These tables cover important parameters related to the State governments, regulatory commissions, and SEBs/utilities for all five States. Comments and values for each parameter indicate the status during the visit. As indicated in the table, Rajasthan has made significant progress in reforms. For example, they have provided meters on about 40 % of their agricultural consumers, and raised the minimum tariff to Rs. 0.70/kWh for metered consumers. They have established a new tariff of Rs. 1.40/kWh for immediate connection for new consumers. These actions are very progressive, and much ahead of the other states under consideration.

In terms of T&D losses, Rajasthan is lower than the other states. Rajasthan is also getting a World Bank loan worth \$850 million, with a first tranche of \$160 million for improving the T&D system. The state government and utility are working closely together and in a cohesive manner compared to the other states, also a favorable factor for Rajasthan. While the industrial sector in Rajasthan is not large, in fact it is more reasonable to adopt DSM. If improvements can be made in the agricultural sector, it will be a significant development for the utility, since they don't have a large industrial sector revenue base. Like the other states, Rajasthan is facing shortages, and the cost of importing electricity is higher than the cost of generation. Therefore, any unit saved through DSM/EE measures will prove to be beneficial to the financial health of the utility. The three DISCOs that have been formed were selected equitably, as far as possible, so that the area, distribution load and system are relatively equal. This will enable implementation of successful DSM projects from one DISCO to the others.

The state Government of Rajasthan issued a policy statement in 1999, titled Power Sector Reforms Program in Rajasthan in 1999 (Appendix E). The policy statement has a specific section that addresses DSM, stating that the objective is to implement DSM measures along with energy efficiency programs to improve the efficiency of electrical supply and end-use. It further states that all resources including energy conservation, use of non-conventional and renewable energy sources will be considered in the power planning process. Thus, the State government is very committed to energy efficiency, and has established a requirement that DSM cells be established in the new distribution companies.

Rajasthan ranked very high in several areas, especially in willingness and commitment, reforms and tariff restructuring. Rajasthan has already unbundled their SEB, having established one-generation company, one transmission company, and three distribution companies.

The first tranche of the World Bank loan, slated for \$160 million, should be available in the first months of 2001. Several discussions have taken place with Jaipur DISCO staff and World Bank staff to allocate some of these funds to support DSM programs.

After all the collected data and observations were entered into the criteria matrix, the points for each state were totaled (Appendix F). Several parameters were considered more critical than others, and they were given a weightage factor of two, indicating that they were considered twice as significant as the other parameters. While this could be viewed as subjective, at the same time it was felt important that factors such as willingness of the utility to participate in the ECO project and to implement DSM and energy efficiency be given extra consideration. Based on the data entered, both with and without the weightage factor, Rajasthan emerged as the state garnering the most points. Therefore it becomes the recommended focus state, with Karnataka being second.

Appendix A
Letter of Introduction



HASHI SHEKHAR

Director 371-6020

Tel: 335-6650

Fax Email: shckhars-2000(g!yahQo.co.uk

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GOVERNMENT OF INDIA

-41" <4

MINISTRY OF POWER

D.O.No.19/5/98-EM

29d1 May~ 2000

Dear Shri

The US Agency for International Development (USAID), together with the Ministry of Power, has initiated a new three and a half year energy conservation project in India. This project is the Energy Conservation and Commercialization Project (ECO), which will provide assistance in many sectors, including financial, markets and policy areas. The basic thrust of the project is to develop market mechanism for investment in energy efficiency and capacity building in the utilities. USAID has hired the American firm Bechtel Consulting (Nexant) to implement the project.

2. One of the first activities under the ECO project is to facilitate the adoption of demand side management (DSM) principles and practices in a state utility. To accomplish this, the Bechtel team will assess several SEBs in order to select one within which to conduct their activities. Once the state is selected, Bechtel will provide technical assistance and training to the utility staff. The technical assistance will be provided to develop capability within the SEB to design, plan, develop and implement DSM projects. Significant efforts will be devoted to development of protocols for screening DSM programs and technical, economical and financial analysis of programmes. Initial efforts will be focused on load research to analyze energy use patterns of customer segments.

3. The focus of the Bechtel team will be to work cooperatively with the selected utility to define and develop their energy efficiency programmes in India. The DSM team is led by Mr V .M. Thakor, former Commercial Manager at Ahmedabad Electric Company (AEC). Mr. Thakar has over six years of DSM experience in India, as he led AEC during the initial three-year USAID technical assistance DSM Program there. This team will understand the issues and concerns facing the utilities in India and will utilize this knowledge in assisting the utility to plan and develop effective DSM programs. The technical assistance and knowledge of the Bechtel team will be instrumental for the selected state in implementing energy conservation/demand side management programmes.

Benefits to the selected State include:

An Analysis of existing tariff rate structure

A Load research, illustrating the existing demand patterns by customer classifications

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ation Criteria and Selection of the Focus State (Milestone 11A) November, 2000

- ~ Demand side management (DSM) planning, including an analysis of the most cost effective DSM programmes for the selected utility
- ~ On-going training (workshops and co-), including the opportunity for study tours to the U.S.
- ~ Pilot projects and demonstration projects facilitated
- ~ ESCO development
- ~ Assistance in the development of financial programmes for energy efficiency projects, including working with projects right through to implementation

4. The ECO project will provide freedom, technical assistance services for the selected utility, which essentially would be similar to having "in-house" experts in planning and developing energy efficiency programmes. It is essential that the utilities incorporate and encourage energy efficiency in the use of electricity, and the ECO project is available [to provide the necessary expertise to utilities.

5. The Bechtel team will want to meet with members of the utility, including the Chairman, to assess their commitment to reform and to energy efficiency. Information collected will be compared to that of other SEBs. Based on the meetings and data collected, Bechtel will select one State utility in which to focus their work. The selected utility would be expected to develop and staff a DSM cell, and be willing to undertake DSM programs. It is essential that the utility be willing to cooperate in this important effort, and that is one of the most significant factors that the Bechtel team will want to assess.

6. The Bechtel staff has selected your SEB as one of the candidate states for their DSM activity. The Bechtel staff would like to meet with you to assess your SEB for this assistance. They will be contacting you in the near future to set up a meeting to initiate this effort. This is a unique opportunity where the selected utility will have the opportunity to work with experienced DSM consultants who are knowledgeable about the conditions and culture within India. I would like to encourage you to meet with the Bechtel team and to strongly consider participating in this activity. Please contact me directly if you have any questions regarding this programme.

With regards,

Yours sincerely, /s/ JONJ.-

Shashi
--ZIJr
[SHASHI SHEKHAR]

Shri Atul Chaturvedi,
Secretary(power),
Power Deptt.,
Govt. of Uttar
Pradesh Lucknow.

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Appendix B

Utilities Visited and Meetings Held

1.1 KPTRANSCO

Sl. No.	Visit to	Date	Officials met
1.	KPTRANSCO Banglore	28 th June	CMD, Mr. Gokul Ram, IAS Director (P&IT), Mrs. G. Latha Krishna Rao, IAS Technical Advisor to CMD, Mr. P.S. Jagannath Gupta
2.	INTESCO – (ESCO) Banglore	28 th June	Mr. Vasu
3.	Saha Sprague (ESCO) Banglore	28 th June	Mr. R.K. Iyer & his team
4.	KERC Banglore	29 th June	Chairman, Mr. IAS Secretary, Mr. S. Sridharan
5.	Energy Dept. Govt. of Karnataka, Banglore	29 th June	Principal Secretary to Govt., Mr. V.S. Sampath, IAS
6.	KPTCL Banglore	30 th June	Technical Advisor to CMD, Mr. P.S. Jagannath Gupta & his team

1.2 APTRANSCO

Sl. No.	Visit to	Date	Officials met
1.	APTRANSCO Hyderabad	17 th July	CMD, Mr. Anil Kumar Kutty, IAS Director (Dist. & HRD), Mr. P. M. K. Gandhi Chief Engineer (Elect), Projects-Dist, Mr. K. V. Raju Chief Engineer(Elect)Project, Mr. CH. Narsimha Murthy
2.	Global Energy Consulting Engineers (ESCO) Hyderabad	17 th July	Director, Dr. M. V. Krishna Rao Planning and Design specialist, Mr. B.S. Verma
3.	APTRANSCO Hyderabad	17 th July	Director (Dist. & HRD), Mr. P. M. K. Gandhi Chief Engineer (Elect), Projects-Dist, Mr. K. V. Raju Chief Engineer(Elect)Project, Mr. CH. Narsimha Murthy
4.	APER Hyderabad	18 th July	Chairman, Mr. G. P. Rao Member, Mr. A.V. Subba Rao Member, Mr. D. Laxminarayan Secretary, Mr. T. B. Narsimha Rao
5.	State Govt. Hyderabad	18 th July	Principal Secretary, Mr. V. S. Sampat, IAS
6.	NPC (EMC) Hyderabad	18 th July	Assistant Director, Mr. Baijnath
7.	KPTCL, Hyderabad	19 th July	Chief Engineer (Elect), Projects-Dist., Mr. K. V. Raju Chief Engineer(Elect)Project, Mr. CH. Narsimha Murthy
8.	NPC (EMC) Hyderabad	19 th July	Director incharge, Mr. D. Pavan Kumar Dy. Director, Baijayanta Nath

1.3 RTRANSCO AND JDISCO AT JAIPUR

Sl. No.	Visit to	Date	Officials met
1.	Govt. of Rajasthan Jaipur	24 th July	Secretary (Energy) , Mr. C. S. Rajan, IAS
2.	RTRANSCO, Jaipur	24 th July	Chairman, Mr. P.N. Bhandari, IAS
3.	JDISCO, Jaipur	25 th July	MD, Mr. Umesh Kumar, IAS
4.	RERC, Jaipur	25 th July	Chairman, Mr. Arun Kumar, IAS
5.	Consumer Unity Kutch Society (CUTS) an NGO Jaipur	25 th July	Mr. Srinivas Krishna Swamy Mr. Ashok K Baiman
6.	JDISCO, Jaipur	26 th July	Zonal Chief Engineer (Dist.), Mr. S. K. Bishnoi TA to ZCE, Mr. S. N. Hingar

1.4 MPSEB

Sl. No.	Visit to	Date	Officials met
1.	Govt. of Madhya Pradesh, Bhopal	14 th Sept	Principal Secretary (Energy) Mr. Shanker Narayanan, IAS
2.	MPSEB, Jabalpure	15 th Sept	Chairman Mr. S.K. Dasgupta
3.	MPERC, Bhopal	14 th Sept	Chairman Justice Sachindra Dwivedi and Members

1.5 GEB

Sl. No.	Visit to	Date	Officials met
1.	GEB, Vadodara	18 th Sept	Chairman, Mr. Nalin Bhatt & M (A) and M (T)
2.	Govt. of Gujarat, Gandhinagar	19 th Sept	Principal Secretary (Energy) Mr. Vijay Ranchan, IAS
3.	GERC, Ahmedabad	19 th Sept	Members, Mr. Sharma & Mr. Oza

Appendix C

Background Material Obtained

1. KPTRANSCO

- i. Annual Administration Report – 1997-98
- ii. Karnataka Electricity Board Electricity Supply Regulations – 1998
- iii. Electricity Power Tariff – 1998
- iv. Note on reforms restructuring and privatization of Distribution system and Milestone for privatization
- v. Highlights of 1999-2000
- vi. Steps taken to better consumer services
- vii. Perspective power system planning

2. APTRANSCO

- i. Power development in Andhra Pradesh (statistics) 1998-99
Latest Annual Report could not be given as it was yet to be approved by Assembly)
- ii. Terms & condition of Supply
- iii. Tariff notification dated 03-06-2000
- iv. Govt. notification for second transfer scheme to give effect to focus District Co. constituted
- v. Executive summary giving certain system details
- vi. Note on initiative on AG Sector
- vii. Executive summary on Pilot Project on AG Sector

3. RTRANSCO & JDISCO

- i. Annual Report – 1997-98 (partly in Hindi and partly in English)
- ii. Policy statement on Power Sector
- iii. Progress Report (in Hindi) 1999-2000
- iv. General Condition of Supply
- v. AG connection – Direction (in Hindi)

4. MPSEB

No data was made available

5. GEB

No data was made available

Appendix D

Summary of Site Visits

Following are summaries from the site visits to the five candidate states.

KPTRANSCO

- Demand shortages during working day and particularly during evening peaks.
- High T&D losses.
- Despite single phasing (to cut off agricultural load), the supply was used by these consumers through converters, which overload the system. Need was expressed to suggest a system whereby only agricultural consumers could be switched-off, possibly remotely, so that other consumers on the same feeder could be supplied and overload avoided. This phenomena is, however common for all SEBs to varying degrees.
- Power transformers and some of the transmission lines are overloaded, which need to be relieved. Failure rate of distribution transformers is comparatively high.
- System needs reactive compensation due to poor power factor of the consumer load.
- Willingness and interest for energy efficiency/DSM activities were expressed by individuals interviewed.
- Energy conservation cell exists under R&D. It is, however, not functioning effectively and the activities are limited in creating awareness and holding essay competition etc.

APTRANSCO

- Demand shortage is particularly high during peak hours, although maintaining a flat load curve by using supply side measures.
- High T&D losses.
- Agriculture consumption is high and losses and theft are also high. The chairman is interested in giving a higher priority and focus to DSM activities in this area.
- Single phase HVD (high voltage distribution) for about 3000 agricultural pump sets was successfully tried out. However, due to some specific problems, it was not pursued further.
- A numbers of studies have been conducted, but no solutions have been found.
- Failure rate of distribution transformers is high.
- Chairman and his team as well as APREC expressed willingness and interest for energy efficiency/DSM. Response from the State Secretary of Energy was not encouraging.
- Chairman was anxious that the DSM activities should be focused on agricultural sector.
- DISCOs are formed and would be operational soon. It would be necessary to decide about opening DSM Cell under APTRANSCO or any of the DISCOs.

RTRANSCO/JDISCO

- High system demand and facing demand shortage during the day.
- Over 40 % of the supply requirement is met by importing electricity, which is expensive.
- T&D losses are high, although they have already implemented a program to reduce them. They have so far reduced losses from 42 % to 27 %.
- There is a major shift in the consumer mix and the demand is becoming higher for agricultural and domestic sectors.
- Rate of growth of industrial tariff is faster than the other categories, while the load growth is almost stagnant. Industrial load is about 1/3 while revenue is 2/3. It is necessary to look into the tariff aspect to improve the growth of the industrial sector.
- Agricultural load is close to 40 % while it contributes only 7 to 8 % of the revenue. They have recently increased the tariffs, including agriculture, from 30 to 70 %. They have developed a unique two-track system for agricultural consumers. (1) Normal, having rate of 70 paise/unit and (2) Fast track having rate of Rs. 1.40 paise/unit.
- The chairman of RTRANSCO and MD of JDISCO and RERC expressed a high degree of willingness and interest for energy efficiency/DSM.
- The MD of the JDISCO appeared quite enthusiastic, as they had recently separated into DISCOs successfully, despite initial resistance from the Union.
- Since JDISCOs head office is also at Jaipur and it has a good mix of all consumer sectors, it would be an ideal place for setting up DSM cell.
- Both SEB and State Govt. operate with a high degree of co-operation and cohesiveness.
- All three DISCOs are formed with uniform parameters in terms of geographical area, T&D system, load and consumers. It would be easy to replicate DSM programs under such situation.

MPSEB

- Heavy demand shortages, as number of IPP have been held up due to litigation and capacity addition has not taken place.
- AG load is high. It is likely to rise this year due to shortfall in rains.
- Due to heavy import, overall cost is high.
- T&D losses are high.
- Secretary (Energy), Chairman SEB and MPREC expressed willingness and interest for DSM-EE activities.
- Reform bill is likely to be passed in this winter session of Vidhan Sabha, and then reform will take place.
- There are some issues pertaining to separating and merging part of MPSEB with the newly formed State of Chhattisgarh.

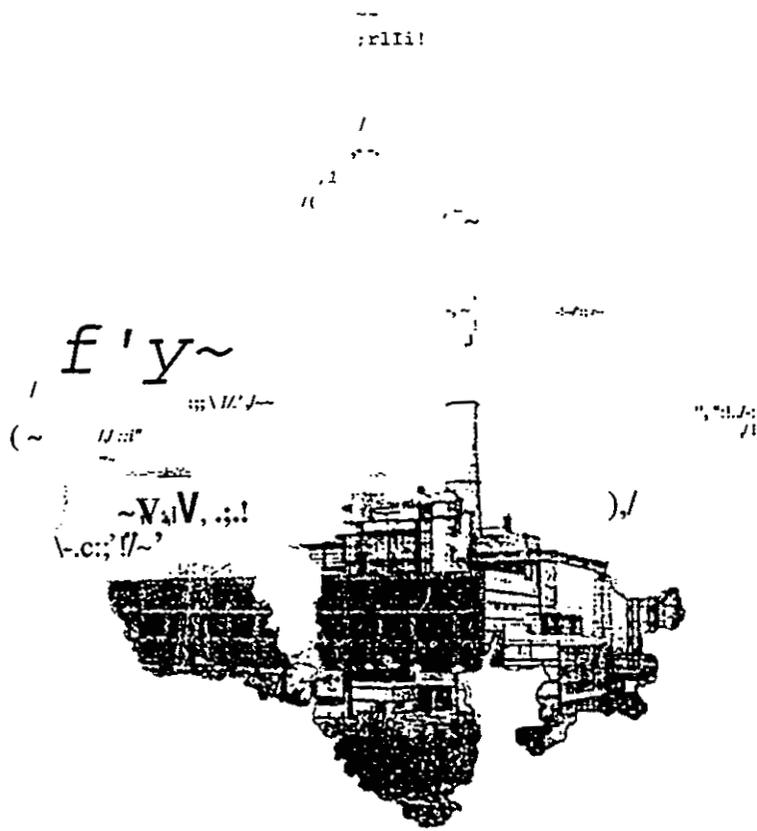
- The agricultural load is high and due to poor rainfall, serious water shortage is envisaged and the agricultural load will increase considerably as farmers have to draw water from deeper in the ground or further away.
- The number of IPPs is being held up due to litigation, resulting in a severe shortage of capacity.

GEB

- Demand shortages are high particularly during peak.
- T&D losses are high.
- Profit center concept ineffective and unsuccessful.
- Capacity addition is necessary and advocated.
- The Secretary (Energy) and Members of GERC expressed willingness and interest for DSM-EE activities. However, there were mixed views on the part of the SEB, as one member was not in favor of DSM activities. The chairman expressed no view.
- Reforms in terms of unbundling are yet to take place. A profit center was established, which was not found to be effective or successful.
- They are facing demand shortages during day and particularly during peak periods.
- DSM was previously initiated, but was discontinued.

Appendix E

Policy Statement on power Sector Reforms Program in Rajasthan, 1999



Policy Statement On Power Sector Reforms Programme ⁱⁿ Rajasthan, 1999.

Government of Rajasthan

ECO Project

Policy Statement on Power Sector Reforms Programme in Rajasthan

Power Scenario in Rajasthan

At the time of the formation of the State in 1949 the installed capacity was a mere 13.27 MW and electricity supply was limited to the princely States and few towns. The power sector in Rajasthan received impetus after the formation of RSEB on 1st July 1957 and planned growth in installed capacity, transmission network and rural electrification took place with the State investing 28-30% of its plan outlay in the initial years in the power sector.

The State grid, as on March 99, has access to 3356 MW of installed capacity. Of this 1302 MW is exclusively owned and operated by RSEB whereas the State has a share of 949 MW in the inter-state partnership projects, both Hydro and thermal, and has an allocation of 1105 MW in the central sector power stations. The transmission & distribution system covers a large geographical area of 342,000 Sq. Kms., 2/3rd of which is desert with low population density, serving over 50 lac consumers from different categories. Electricity sales have been growing at an annual average of 11%. The unmet demand is significant, as evidenced by a backlog of over 6 lac applications in service collections.

At present Rajasthan State Electricity Board (RSEB), a vertically integrated State owned utility constituted under the Electricity (Supply) Act, 1948, is the sole supplier of electricity to consumers of the State. However, without Government's subvention, RSEB has not been able to achieve the rate of return of 3% on net fixed assets after interest, as stipulated in the Electricity (Supply) Act 1948.

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Like most other States in the country, the power system in Rajasthan is characterized by problems of frequent service interruptions, high system losses, unexpected voltage and frequency swings, restrictions on demand, poor cost recovery and heavy commercial losses. The State is also facing chronic power shortage, both in terms of peaking availability as well as energy availability to the extent of 36% and 11% respectively. The State's power scenario is unlikely to improve in the next few years and shortages, both in terms of MW and energy, would continue till the End of the 10th Five-Year Plan

Policy initiatives taken by the Government of Rajasthan

In 1991, Government of India opened the power generation industry to private sector investment in an effort to mobilize resources for power generation. In 1993, Government of Rajasthan decided to reform its power sector with the objective of creating conditions for sustainable development of the power sector and improving efficiency and quality of service to the consumers by allowing private participation in the State power sector, particularly in generation. This was followed by a Broad Reform Policy Statement, issued in September 1995, with the aim of attracting private investment and expertise to expand and improve electricity services in the State and to enable the sector to gain access to capital markets and commercial financing.

In the past almost exclusive reliance was placed on facilitating private power generation through Independent Power Producers (IPPs) and transfer of selected existing generating stations to the private sector adopting the international competitive bidding route. Letters of intent were issued for liquid fuel based power plants of smaller capacity ranging between 50 MW to 166 MW having low gestation period and Power Purchase Agreements (PPAs) were signed for 2646 MW capacity. PPAs were also signed for 702 MW naphtha based and 500 MW lignite based projects. Though these two projects received the techno-economic clearance of Central Electricity Authority (CEA), yet in neither case financial closure has

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been attained. Thus there has been virtually no progress in regard to implementation of these projects. Slowly progress in private sector projects have given rise to the need to pursue the power generation projects in the State sector with greater vigor, while continuing to support private sector initiatives in generation.

With this end, the State Government has decided to take up the 2x250 MW Suralgarh Thermal Power Station Stage II in the State sector. Simultaneously, on the basis of the recommendations of a Cabinet Sub Committee, especially set up for this purpose, some of the PPAs, previously signed, have been reviewed with a view to increase the prospects of their achieving quick financial closure.

Government of Rajasthan has also announced a policy to encourage generation based on non-conventional energy sources, on 11 March 99, in which a number of concessions have been offered.

Investment Requirements of Power Sector

In order to meet the expected shortage during the X Plan Period, installed capacity will be required to be raised by 5000 MW. This would require an investment of about Rs.20,000 crores in generation and an equivalent amount in developing the transmission & distribution system. With its limited resources and the competing needs for investments in other sectors of economy and for Welfare of the weaker & other vulnerable sections of society, the State will not be able to support such a program without mobilizing private investment in a big way.

Need for Reforms in Power Sector

The State Government is concerned that rapid and self-sustaining growth of power sector and its financial viability is essential for a speedier and sustained socio-economic development of the State. Given the grave difficulties being faced by the power sector in terms of investment, its

Management, and regulation. Rajasthan Government of India has initiated a series of reforms in the power sector to facilitate and attract investments in the power sector. Two conferences of Chief Ministers were convened in 1996, towards this end, leading to the adoption of the Common Minimum National Action Plan on Power. The Electricity Regulatory Commission Act was enacted by Government of India in July 1998. More recently, in a conference of the Chief Ministers in December 1998, a Power Reform Initiative was endorsed. However, a number of steps are required to be taken at the State level provide a comprehensive solution for restructuring the power sector. In the recent past many States have initiated measures to reform the power sector and to set up regulatory bodies. Orissa, Andhra Pradesh and Haryana have already enacted the required legislation for supporting reforms. Many other States have either established the Regulatory Commission or are in the process of doing so as also restructuring their power sectors.

- ii. To take effective steps to enable the power sector to mobilize. From within the sector. Adequate financial resources for financing grid expansion requirements:
- iii. To create an operating and regulatory environment conducive to investment and competition so as to foster entry of private participants into power generation. Transmission and distribution and to attract the capital and expertise required to 'support power system upgradation. Expansion and service quality improvement

Agenda for Reforms

The Government of Rajasthan is firmly committed to bring about comprehensive reforms in the power sector to achieve the aforesaid objectives and accordingly. This Statement of its Policy on Power Sector Reforms Programme is being issued replacing the Policy Statements of 1995. Revised in 1997 and 1998.

The main components of the proposed reform programme are:

- i. Establishment "of an independent Regulatory Commission to regulate the functioning of the power sector on sound commercial principles: to safeguard the interests of customers in respect of quality, reliability and fair price for electricity); to set cost and efficiency based tariffs to ensure the creditworthiness and viability of the power sector and to progressively eliminate tariff distortions and subsidies.
- ii. Segregation of the generation, transmission and distribution functions into separate services to be provided by separate autonomous companies.
- iii. Reconfiguration of the distribution system into distinct economically viable geographical zones each) served
-by an autonomous distribution company.

- iv. Corporatisation and commercialization of the " ~. Emerging power sector entities to make the power sector attractive for the prospective investors.
- v. Retention of the role of policy formulation \with the State Government.
- vi. Promotion of competition among various power sector entities.
- vii. Management of demand to conserve and promote efficient use of energy and ensure environmental protection.

8. Structural Changes in the Power Sector

- 8.1 The power sector will be restructured to encourage I functional specialization; decentralization. autonomy and accountability in decision making: to facilitate and encourage private sector participation: to progressively promote competition in different segments of the sector: and to ensure/ ~ an effective. efficient and independent regulation of the .sector. The new power companies will operate within an independent regulatory regime, which promotes efficiency and makes the companies accountable for UIe quality and reliability of tlie service provided to the customers.
- 8.2 The functions presently being performed by the vertically integrated RSEB will be segregated into separate generation. transmission and distribution companies to be incorporated under the Indian Companies Act. 1956.
- .Separate profit centres will be established \within tliese companies to further promote productivity and efficiency. To grant appropriate managerial and operational autonomy to the new companies. \while these are State owned. the Government will ensure that at least one fifth of the I ~ .Directors are from outside the Government entities. and That for each company the Directors are appointed exclusively on the basis of professional merit. .

The existing generating stations of RSEB will be group. under a separate power generation company. Transmission of power will be entrusted to a separate transmission company. Power distribution will be assigned to a number of independent power distribution companies.

The State Government has decided to set up the Rajasthan Electricity Regulatory Commission (RERC), under the Electricity Regulatory Commission Act 1998: enacted by the Government of India, for establishing a regulatory framework which will seek to balance the interests of various stakeholders e.g. customers, investors, lender suppliers, the government as the trustee of the public interest, the utilities and the people of Rajasthan.

The State Government also intends to redefine its role in the power sector from an operator and regulator of utility to a facilitator towards greater investment and promoter productivity & efficiency. The State Government will be focusing on broad policy formulation in the power sector. With the reform programme the State Government is confident of channelising a larger investment in the power sector to rehabilitate and expand the transmission and distribution system.

Power Generation

The existing power stations and those under commissioning in the State sector. Will be transferred to a separate generation company to be registered under the Indian Companies Act, 1956. The company will start its operations, as a wholly State owned company and the State Government may, at a later stage, invite private sector participation in this company. The company, like other IPPs, will sell power to the transmission company for further sale to the distribution companies. This Company: will be responsible for generating power from all the existing generating stations of RSEB and complete the projects under commissioning by RSEB.

In future new power generation projects in Rajasthan will be mainly developed by:

- i. Independent Power Producers (IPPs) selected through international competitive bidding (ICE):
- ii. Central sector generating corporations: or
- iii. by the generation company itself or in joint venture with private partners, other States or Central undertakings

The Government of Rajasthan may make investments in power generation for extension of the existing power stations as well as to bridge the shortfall in the availability of power.

Power Transmission ,

A State owned Transmission Company, to be incorporated under the Companies Act, 1956, will be entrusted with the power transmission network (of extra high-tension lines including O&M of inter-state tie lines, in so far as they pertain to the State. The transmission company will be responsible for purchasing power from generating company and various IPPs in Rajasthan, importing and exchanging of power from and with central power generation corporations, jointly owned projects, regional projects, other SEBs, other power projects within or outside the country. The pooled power will be supplied to different distribution companies. The transmission company will be the principal transmission utility in the State.

The transmission company will take over the entitlements and commitments undertaken by RSEE regarding the procurement of bulk power and will fulfill them in accordance with its own corporate objectives, subject to the directives of the Regulatory Commission. The transmission company will dispatch the power on merit order basis, subject to the limitations of PPAs already entered into, so as to avail the least cost power available in the grid.

Power Distribution

The State will be geographically divided into a number of distribution companies to be formed on consideration of viability and operational ease. These distribution companies will operate under a license to be granted by RERC. They will approach RERC individually for fixing their retail tariffs, and amongst the distribution companies differential tariffs may progressively emerge based on relative costs and performance.

These distribution companies, although initially owned by the State Government, will, in a phased manner, be converted into joint ventures (JVC) where the private partners hold majority shares and management control including obligations in the required investments and to meet the performance obligations under the license. The selection of the private partner will be done through a career designed international competitive bidding process to ensure selection of a technically and financially competent partner.

To motivate the employees, who are important stakeholders in the growth of these companies, the Government of Rajasthan considers it desirable to invite the employees of RERC and its successor companies to participate in these new companies. The entire process for the JVCs and transferring the distribution business is expected to be completed by the end of 2004, although a more rapid schedule is targeted.

Regulation of Power Sector

As stated earlier, the Government of Rajasthan has already taken a decision to set up the Rajasthan Electricity Regulatory Commission (RERC) under the provision of the Electricity Regulatory Commissions Act, 1998 enacted by the Government of India. The Rajasthan Power Sector Reforms Bill, 1999 will be enacted to provide for the restructuring of the power sector. This Bill will recognize the Rajasthan Electricity Regulatory Commission, being set up under the Electricity Regulatory Commissions Act, 1998.

RERC will, as an autonomous regulatory authority, regulate power purchase and procurement process of the transmission and distribution utilities, determine tariff for electricity transmission and supply, promote transparency, efficiency and economy in the operation and management of the power utilities, encourage competition and help the power sector in Rajasthan to attract private capital for development while ensuring a fair deal to the customers. The RERC will have three members each having a fixed tenure and appointed by the State Government on the recommendations of an independent Selection Committee as stipulated under the Act. It is also proposed to confer the power upon RERC to issue licenses, to transmission and distribution companies, under the proposed Power Sector Reforms Bill, 99.

The Government of Rajasthan is committed to take all- necessary steps to facilitate and ensure the independent functioning of the RERC. The Government will also abide by the provisions of the Reform legislation with regard to fixation of tariff by the Commission and whenever the Government decides to subsidize the supply of power to specific groups of consumers, it will pay the required subsidies.

Financial Restructuring For Reforms

Given the present financial situation of RSEB, major financial restructuring is critical to enable the new companies to start their operations on a financially viable basis. The financial restructuring will include rationalization of tariffs; restructuring of the balance -sheets of the functionally unbundled power sector entities through identification and write off of and provisioning for doubtful or non-performing assets; settlement of un-funded liabilities; and design and implementation of a suitable -mechanism to clear the accumulated debt and overdue commercial liabilities.

Presently the agricultural sector, and to a lesser extent the domestic sector, are highly subsidized, resulting in

annual revenue deficit of about Rs. 1000 crores. shortfall is compensated by subsidies from the E Government and, long-term borrowings from the market and financial institutions. The reforms program aims to eliminate need for any State subsidies in a ph: manner and make the power sector not only self-reliance but also a net generator of resources for the State's econ over a period of time.

To meet the growing requirements of investment in P(sector for improved availability of power. the S Government undertakes that the resources generated; as a result of the divestures of the existing entities ~ be ploughed back(specifically for the development of power sector. .

Power Sector Reforms Bill

In order to pave the way for the reform process Rajasthan Power Sector Reforms Bill, 1999 will be enacted to pro the legislative framework for the setting up ; functioning of the autonomous regulatory commission segregation of specialized functions to the separate entity and creation of an environment for the growth and efficient functioning of t11e power sector .

Human Resource Development

The Rajasthan Power Sector Reform Bill will provide safeguarding the interests of the employees of the RS It will ensure that any change in service condition! rules will not be less favorable than t110se existing too The benefits available to the employees and their ser conditions are. therefore, ensured and protected. All existing employees of RSEB will be absorbed in t11e J power utilities. Transfer of employees will be based 0 time bound transfer scheme to be prepared by the SI Government. -

With the anticipated growth of the power system. personnel policies and employment conditions of companies \would need to be much more progressive{

attracting and retaining highly skilled staff and providing incentives to the staff for constantly upgrading their skills. The staff should be among the beneficiaries and not the losers of the reform program.

The reform process will be accompanied by training and other human resource development programs to improve skills and work environment and to enable the employees to discharge their responsibilities and functions in a more efficient manner under the commercially oriented companies. A key objective of restructuring is to create a culture where customer service and commercial functioning are paramount. The employees will have new opportunities to undertake greater responsibility, be accountable for delivering results and have higher opportunities for career advancement.

Intermediate Investment Plan

The Government of Rajasthan recognizes 'that the process, of reforming the power sector is likely to be long drawn. In fact, it may take few/v years before the full benefits of the reforms are experienced. In the short and medium term, ' there is a dire need to address the most urgent needs of the sector, improve the quality of power in the most critically affected areas, improve the interface with consumers and improve these safety and working conditions of staff duly employing information technology tools to score radical benefits. An Intermediate Investment Plan will be developed and financed jointly by the State Government and external aid, agencies to address these investment requirements.

Communication Strategy

The Government of Rajasthan is conscious that success of the reform process critically depends on its acceptance by the stakeholders e.g. consumers, employees, investors, lenders, creditors, and above all the people of the State. In addition to ensuring that all the technical aspects of

the reform process are properly addressed implementation strategy will use participatory approach to address and balance the genuine concerns of the various stockholders and will aim at building a broad and diverse constituency for change.

The Government and the management of RSEB and successors will continue and intensify the communication campaign to educate and enlighten the stakeholder public at large about the need for reforms, its various components, implementation strategy, time table and expected benefits to various categories of stakeholder. Communication efforts will necessarily focus on the various groups of RSEB employees, end users-industry, agricultural and domestic consumers, Government functionaries, academicians, opinion leaders,

Government organizations etc. This feedback during this process will also help to improve the design implementation of the reform measures.

Demand Side Management

The reform programme will also focus on Utility demand management (DSM) with Utility objective to improve effectively in supply and end-use of electricity. All resource including energy conservation and use of non-conventional and renewable energy sources, will be considered in process of power planning to manage the power delivery effectively and reduce the need for additional conventional generation capacity. The main focus of the strategy demand side management will be on:

i. Introduction of tariff linked demand side management ii.

Improvement of efficiency of agriculture tube and industrial installations

iii. Launching of consumer awareness campaign with various energy conservation measures. -

Various options to bring in demand side management measures will be explored and suitable policies will

notified in consultation with the RERC. Energy efficiency and DSM programmes will be promoted through developing bankable strategies and programmes in consultation with the stakeholders.

Environmental and Social Aspects

The Government reaffirms its commitment to ensure a fair, efficient and transparent handling of all matters relating to land acquisition and involuntary resettlement, including loss of assets and other negative impacts on Project Affected Persons (PAPS) resulting from various developmental projects, irrespective of sources of financing. In this context, the State Government is formulating the Rehabilitation & Resettlement (R&R) policy for the people affected by acquisition of land for various - developmental projects.

Environmental aspects of power generation and supply under the reform programme will receive the utmost attention of the State Government. Environmental impact will be fully integrated into planning and implementation of all generation, transmission and distribution projects. The renovation and modernization of existing power generation stations, already undertaken, will minimize the adverse environmental impacts on the surrounding areas. New projects will be developed in accordance with applicable environmental standards and resettlement and rehabilitation policies. Reform initiatives such as reduction in transmission, and distribution losses, improved metering, billing and collections, improvement in energy efficiency, and promotion of demand side management will have a positive impact on the environment.

Implementation Strategy

-In order to guide and closely monitor the implementation of the reform programme, the Government will formulate a Project Implementation Plan (PIP) which will spell out

clearly the implementation actions, steps, rest responsibilities, milestones and schedule: implementation plan will constitute the ref framework{ for monitoring the progress in carrying reform programme.

A Reform Guidance Committee chaired by the Minister is being set up to guide the reform progress This will be in addition to the existing Steering Cor under the chairmanship of the Chief Secretary.

Force headed by Chairman, RSEB would operation the policy decisions taken by the State Government Reform Guidance Committee and Steering Commit would co-ordinate and monitors the implementation reform programme. A Reforms Office, headed by E~ Director in RSEB, to effectively manage the " J process has been set up. Specialized \working group be formed to study various aspects of the reform r prepare the blue print, set time schedules and f; the implementation of the reform administration. ~ of outside experts and consultants will be eng. further professionalise the process.

Improved Consumer Interface

Consumers have often been the most neglected ~ in the state owned and operated infrastructure Ensuring better quality of service and protect interest of the consumer is one of the key element the' reform process. With greater investment flow\v the sector and its effective regulation. the available \veil as quality of power will improve benefiting all : of the consumers. A vigorous campaign to educate consumers on their rights, to disseminate inform; - the regulatory decisions and on the quality standard -- mechanisms available for the redressal of co. -

-I " complaints will be taken up.

An Advisory Committee with representatives from consumer, agriculture, industry, commerce, trade, labour and electricity for transmission and distribution will be set up to advise the State Regulatory Commission on major policy issues and quality of service provided to consumers. Availability of ample power at competitive rates will have a multiplier effect on the economy of the State through increase in investments and improved productivity of agriculture, industry and commerce. With the turn around and self sustained growth of the power sector, huge resources presently being spent

Impact on the Development of the State

on the power sector will be available for investment in - socially more desirable activities. In fact, the power Sector will become a major contributor to the finances of the State through inter-alia, returns on equity held by the Government. The Government of Rajasthan intends to use these funds for poverty alleviation and socio-economic uplift of the oppressed sections of population through increased investments in programmes like education, health, family welfare and welfare of weaker sections.

Government of Rajasthan is, thus, fully committed to bringing about comprehensive reforms in the power sector in the State. The Rajasthan Power Sector Reforms Bill 1999 will put in place the required legislative framework. The institutional changes required to implement the "reform process is already under implementation. Given its clear commitment to the people of Rajasthan to provide quality power, efficiently, reliably and at reasonable rates, the Government of Rajasthan dedicates itself to the task of reforming, restructuring and restoring the credit worthiness of the power sector for the larger benefit of the people of the State.

Appendix F

Selection Criteria Matrix

Report on establishing Selection Criteria and Selection of the Focus State (Milestone 11A) November, 2000

Comparison of criteria/attribute for the states visited						
	Criteria/Attribute	States visited				
		Karnataka	Andhra Pradesh	Rajasthan	Madhya Pradesh	Gujarat
A.	STATE GOVERNMENT					
1.	E.E.- DSM Activities				No response, not visited.	
i	Willingness	Positive	Positive more emphasis on AG	Positive	mixed	Mixed
ii	Support Level	Supportive	Not clear	Positive	Not clear	Not clear
2.	Reform Status	In process	Carried out	Carried out	Bill to be passed	Being Studied
3.	Regulatory Commission	Established & Functional	Established & Functional	Established & Functional	Established & Functional	Established & Functional
4.	Out-Look/Support					
i	SEB's Meeting R. R.	Positive	Not clear	Positive	Not clear	Not clear
ii	Overall Tariff Revision	Supportive but to be carried out	Not clear	Supportive & carried out	Not available	Supportive & under consideration
iii	Agricultural Tariff Revision	Not available	Not available	Revised 40 to 70 % Avg. 70 p/Kwh. For immediate connection Rs. 1.40 p/KWh. Meters fixed on such consumers.	Not available	Not available
iv	Elec. Duty Structure	Low	Low	Low	Low	Very high
5.	Others					
i	Political Stability	Stable	Stable	Stable	Stable	Stable
ii	Financial Institutional Assts.	Available	Available	Available	Not known	Available
iii	Level Of Independence To SEB	Low	Low	Well coordinated	Not known	Not known
iv	Credit/Risk rating	Not known	Rs. 16 billion subsidy towards AG would be eliminated on reforms	1 Billion \$ loan of World Bank approved for Privatization for which bids are under negotiation.	Not known	Not known

Comparison of criteria/attribute for the states visited

Criteria / Attribute		Karnataka	Andhra Pradesh	Rajasthan	Madhya Pradesh	Gujarat
B.	STATE ELECTRICITY BOARD Management					
i.	EE - DSM Activities Exist	EC Cell exists, not effective. Only awareness aspect	No dedicated Cell. Activities related to metering, capacitors and AG sector taken-up.	No dedicated Cell. Specific provision for DSM activities made in policy statement of	Does not exist	Does not exist
ii.	Willingness To Adopt EE - DSM Activities	Willing	Willing	Willing and anxious	Willing	Low response
iii.	Level of Commitment	Average	Average	High	Average	Low
iv.	Willingness for DSM Cell & Resources	Willing	Willing	Willing & ready	Willing	Low response
v.	Willingness for Reforms & Status	Willing & being	Willing & being reformed	Willing and carried out	Bill to be passed	Under study
vi.	Relation With Union Technical	Cordial	Cordial	Healthy	Not known	Not known
2	Supply Demand Scenario					
a.	Shortfall in Peak Demand	300 to 400 MW	950 MW	500 to 600 MW	Not available	Not available
b.	Shortfall in M.U.	2350	3003	2350	2655	4208
c.	PLF	49.5 %	82%	82.80%	69.30%	66.70%
d.	T & D Losses (M.U. %)	38 % in 1999-00	31.80%	30%	Not available	Not available
	HT/LT Ratios					
i.	No. of Consumers	0.00036	0.0003757	N.A.	Not available	Not available
ii.	Sales in MU	0.22 (1:22)	0.28 (1:28)	0.25 (1:25)	Not available	Not available
iii.	T & D System	1:3	1:2	1:25	Not available	Not available
e.	System Planning & Upgradation					
i.	Capacity Addition	800 MW in last 5 years	8382 MW planned till 2004-05	Adequate provision in 5 year plans. Priority to Generation	Not available	Not available
ii.	T & D Loss Reduction	8 % in 5 years @ Rs. 6000 crores capital investment	3 EHV substation, 420 MVA cap. installed	Action for PF improvement, theft reduction and improved metering taken	Not available	Not available
3	Commercial					
a.	Need and Measures For Meeting Demand/Energy Shortfall	Exists. Power cuts & restricted hours of supply to AG	Exists. Load shedding & 9 hours to AG	Exists. Power cuts & restricted hours of supply to AG	Exists. Power cuts & restricted hours of supply to AG	Exists. Power cuts & restricted hours of supply to AG
b.	Conditions Of Supply					
i.	Minimum PF & Penalty/Rebate for Improvement	0.85%	0.9% & penalty for poor PF	0.9% & penalty for poor PF	Not available	0.90% & penalty for poor PF
ii.	Provision For Theft curbing	Exists.	Exists. Intensive raids and separate Act enacted	Exists. Heavy penalty charged	Not available	Not available
c.	Tariffs					
i.	Average Cost Of Supply	2.07 p/u	2.78 p/u	2.76 p/u	2.32 p/u	2.66 p/u
ii.	Average Tariff	1.66 p/u	1.73 p/u	1.84 p/u	1.61 p/u	2.03 p/u
d.	Able To Earn 3 % Of Assets	Yes, 3 % in 1999-00	Not clear but about 3 % (report of 1998-99)	Yes, able to earn 3 % subject to realization of subsidy	Not available	Not available
4	General Aspect					
i.	USAID Experience In Various Projects During Last 3-4 Years About State response	Not availed so far. Pilot projects for EC done	N.A.	Some meters were received and installed.	Not available	Not available
ii.	Presence Of Other SO4 Activities.	Exists	Exists	Exists	Not available	Not available
iii.	Presence /Absence Of Other Bilateral Donor Agencies (DFID, CIDA, etc.)	DFID, World Bank, OECF, CIDA (consultant) are present	DFID, OECF, CIDA (consultant), KFW, PFC & REC are present	World Bank & PFC	Not available	Not available
C	OVERALL ASSESSMENT					

COMPLETED SELECTION CRITERIA MATRIX

SUMMARY TABLE - WEIGHTED

CRITERIA	INITIAL EVALUATION POINTS					WEIGHTING FACTOR	FINAL EVALUATION POINTS					
	ANDHRA PRADESH	KARNATAKA	RAJASTHAN	GUJARAT	MADHYA PRADESH		ANDHRA PRADESH	KARNATAKA	RAJASTHAN	GUJARAT	MADHYA PRADESH	
Factor	POLICY					2						
1	Positive Attitude Towards Reform	2	3	4	1		1	4	6	8	2	2
2	Tariff Book Reform	0	4	4	0		0	0	8	8	0	0
3	Agriculture Tariff Reform	1	1	2	1		0	2	2	4	2	0
4	Electric Duty Structure	2	3	4	1		2	4	6	8	2	4
5	Subsidies	0	1	2	0	0	0	2	4	0	0	
	INSTITUTIONAL					2						
6	Willingness	1	3	4	1		2	2	6	8	2	4
7	Support Level	2	3	4	1		2	4	6	8	2	4
8	Reform Status	0	4	4	0		0	0	8	8	0	0
9	Regulatory Commission	3	3	3	3		3	6	6	6	6	6
10	Credit / Risk Rating	1	1	2	1	0	2	2	4	2	0	
	TECHNICAL					1						
11	T & D Losses (MU%)	1	2	3	0		0	1	2	3	0	0
12	Voltage & Frequency Stability	2	2	3	2		1	2	2	3	2	1
13	Provision for Combating Commercial Losses	0	2	3	1		0	0	2	3	1	0
14	Time of Day Tariff	0	2	3	1		1	0	2	3	1	1
15	Planning	1	3	4	0	0	1	3	4	0	0	
	TOTAL:	16	37	49	13	12	28	63	82	22	22	
NOTES:												
EVALUATION POINTS: HIGH = 3, AVERAGE = 2, LOW = 1, NO RESPONSE = 0												
WEIGHTING FACTORS INDICATE THE RELATIVE IMPORTANCE OF THE CRITERIA.												
THE WEIGHTING FACTORS ARE MULTIPLIED BY THE INITIAL EVALUATION POINTS TO DETERMINE SPECIFIC CRITERIA POINTS.												