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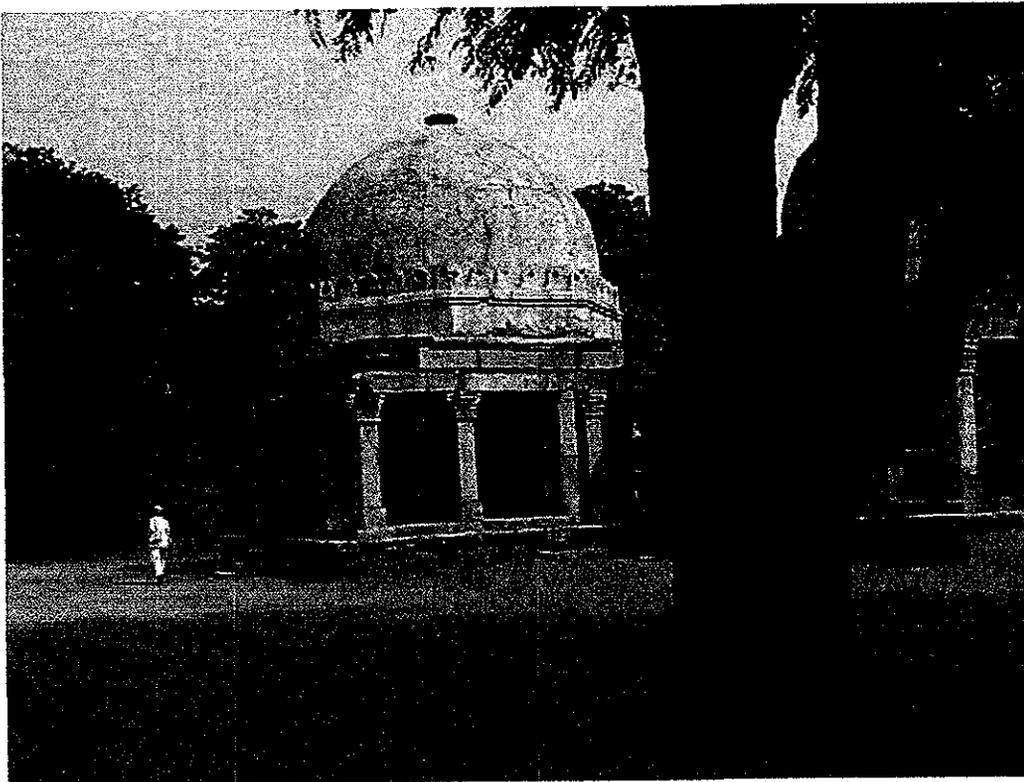
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ECO

Energy Conservation and Commercialization Project

A Program of USAID, Ministry of Power and ICICI

QUARTERLY PROGRESS REPORT #3 October 1 – December 31, 2000



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23865-809-0005

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PREFACE

This is the third Quarterly Report (October 1 – December 31, 2000) written for the USAID ECO Project in New Delhi, India. 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, with project mobilization occurring during March, April and May 2000. The technical assistance work began officially on June 1, 2000.

EXECUTIVE SUMMARY

This quarter marked the first technical achievements under the ECO project. The quarter was highlighted by the selection of Rajasthan as the Focus State under Activity 11. This selection was the result of several months of effort in analyzing the status of Indian SEBs/utilities. This analysis was to ascertain their interest and capability in setting up a DSM Cell in their respective utility. Discussions were held with many individuals and various organizations, in order to develop a short list of states/utilities. Six utilities were ultimately short-listed, and these utilities were then invited for consideration as the Focus State.

Selection criteria were established, and this criteria was utilized in comparing each state and utility. Rajasthan ranked higher than the other states, mainly due to its interest in DSM/energy efficiency; its willingness to establish a DSM Cell; its recent unbundling into three distribution companies, one transmission company and one generation company; and the fact that they have completed the terms for a large World Bank loan for the power sector.

Seven training programs were presented during the quarter. The first training program, a workshop on *Voluntary Energy Auditor Certification* was successfully conducted in Delhi on October 19-20, 2000 at NPC. More than 30 individuals from energy auditing firms, consulting community, industry associations, governmental policy making bodies, and academic institutions participated in the workshop. NPC served as the Indian subcontractor, and AEE (represented by Mr. Larry Good) served as the US subcontractor.

Six training sessions (three separate sessions, each of which were conducted twice) were conducted in the month of November (see below).

- A two-day workshop was held at Mumbai and again at Delhi on *ESCO/Financial Strategies*;
- A one-day workshop was held at Mumbai and Delhi on *Formation of an Indian ESCO Association*; and
- A three-day training program was held at Chennai and Vadodara on *Energy Efficient Technologies*.

Six training sessions were conducted in the month of December:

One-day Workshop was held at Mumbai and again at Delhi on International examples of M&V Protocols.

- A one-day workshop was held in Mumbai and again at Delhi on *International Examples of M&V Protocols*;
- A three day workshop was held at Hyderabad and Delhi on *Energy Auditor Instruction (train the trainers)*;
- A three-day training program was held at Mumbai and Delhi on *M&V Protocols*.

The ECO project participated in the Confederation of Indian Industries Energy Summit and Exhibition at Chennai. A booth was rented for the entire 4-day exhibition, and over 500 contacts were made. The objective was to create awareness of the ECO project, and

to promote participation and interest in ECO related activities. The ECO project brochure was finalized and printed. Five hundred copies were taken to the CII Energy Summit and distributed.

The first technical deliverables were completed during this quarter, as shown below:

- Milestone 1A: Conduct 2 workshops on ESCO/Financial Strategies;
Select ten energy efficiency projects (including 4 in the commercial sector).
- Milestone 3A: Develop business plan and first year agenda for ESCO trade association;
Conduct 2 workshops on formation of an Indian ESCO association;
Draft a model M&V protocol;
Conduct 2 workshops on international examples of M&V protocol;
Conduct 2 courses on M&V protocol.
- Milestone 4A: Conduct 2 courses on efficient technology and systems.
- Milestone 11A: Establish selection criteria and identify the Focus State.

STAFFING

Mr. Sanjeev Tamhane was selected for the position of Senior Financial Consultant in the Mumbai office. Sanjeev has both financial and energy experience, having worked with both ICICI and IIEC. Sanjeev starts full time as of January 2, 2001, although he worked part-time during the months of November and December. Mr. Rajiv Arora joined the Delhi office December 1, 2000 as our training coordinator. Rajiv will be responsible for the coordination and logistics of the training programs.

INTERNATIONAL TRAVELERS

Mark Tribble visited India to assist in setting up the Mumbai Office and to work on Milestone 1A and Milestone 3A. He returned to US on October 19, 2000 and was back again on November 1, 2000. He worked in the Mumbai office for three weeks in November. He prepared the groundwork for the lenders forum, working with ICICI and USAID to determine participants and other details for this program.

Brian Wood traveled to India twice, to work on Milestone 4A tasks. Brian worked with M.K. Raju staff in conducting the 3-day course, "Efficient Technology and Systems—Opportunities for Cost Saving," in Chennai on 8-10 November and again in Vadodara on 13-15 November. In addition, Brian worked on the ranking of target energy efficient products and technologies and the assessment of the market potential associated with activities 4B and 5A.

Larry Good of AEE was in India on two separate occasions, conducting first a workshop on Voluntary Energy Auditor Certification and then a workshop on "Energy Auditor Instruction (train the trainers)" as part of Milestone 7A. He presented an overview of available curricula outside India on these two subjects. Emphasis was on teaching a) the practical aspects of the professions rather than the theoretical, and b) the financial aspects of audit analysis and project preparation.

Jim & Shirley Hansen conducted training programs in Mumbai and Delhi as part of Milestones 1A and 3A. They worked with both Conserve and 3EC on these programs. The 3A work involved a training program on setting up an Indian ESCO association. This topic was of considerable interest, as there is already a group of companies that are loosely organized into an ESCO association. This group, the Council of Energy Efficient Companies (CEEC), has not firmly decided to be an ESCO association, although they identify themselves as such. They were concerned that the ECO project might be a duplication to their activities, by setting up another ESCO association. It was pointed out to these companies and individuals that this effort under the ECO project was merely trying to strengthen the ESCO work, and that ECO was not looking to establish a separate entity.

A training needs assessment (TNA) for 'Activity 10: Energy Efficiency through Regulation, Reform and Restructuring' was conducted in October and November. The

team was led by Michael Gembol of IIE, and Wayne Shirley, a consultant to IIE. They were joined by Anita Kochhar and V.M. Thakor in conducting an assessment of four regulatory commissions (Andhra Pradesh, Karnataka, Delhi and Rajasthan). The assessment will help is determining the training needs of the regulators.

The M&V protocol work was led by Mark Stetz of Schiller Associates and R. Vasu of INTESCO. Mr. Vasu set up an 'e-group', a electronic news communication for people who were interested in the M&V topic. Questions were posted, and then sent to a large number of individuals. They could communicate between themselves in discussing each issue. This turned out to be quite effective, and there was considerable activity both prior to and following the training program on this same topic.

Summary of travelers from the U.S.:

| <u>Name</u> | <u>Activity</u> | <u>Approximate dates in India</u> |
|-----------------------------------|----------------------|-----------------------------------|
| Mark Tribble | General coordination | September 19 – October 19 |
| 2 nd trip | Lenders Forum | November 1- 22, 2000 |
| Larry Good | 7A workshop | October 15 – October 23 |
| 2 nd trip | 7A workshop | December 3 – 16, 2000 |
| Brian Wood | 4A | October 1 – 7, 2000 |
| 2 nd trip | 5A, 4B | November 3 – November 19 |
| Michael Gembol & Wayne Shirley | 10A | Oct. 27 – Nov. 18, 2000 |
| Jim & Shirely Hansen | 1A & 3A workshops | Oct 29 – Nov. 11, 2000 |
| Mark Stetz | 3A, M&V training | December 3 –16, 2000 |

Anticipated travel during the next 90 days:

| <u>Name and organization</u> | <u>Activity</u> | <u>Approximate dates in India</u> |
|---|-----------------|-------------------------------------|
| 1. Claire Fulenwider, consultant | 11B | January 7 – 27, 2001 |
| 2. Tom Stoner, Eenergy | 2B | January 9 – 20, 2001 |
| 3. Brian Wood, Nexant | 4B/5A 5B | January 9 – 20, 2001 March, 2001 |
| 4. Mike Ashford, Eenergy | 1B | February, 2001 |
| 5. Tom Dreessen, NAESCO | 3B | February, 2001 |
| 6. Larry Good, AEE | 7B | February, 2001 |
| 7. Michael Gembol, IIE (and other IIE consultants) | 10B 11B | February, 2001 March, 2001 |
| 8. Anand Subbiah, Nexant | 11C | March, 2001 |
| 9. Hameed Nezhad, consultant | 13B | February/March, 2001 |

ACTIVITIES

This section describes specific work done on various Milestones. The Milestones are being worked on based on their completion date – those with the earliest completion date are being conducted first. The information below provides a brief summary of each Milestone, its completion date, Nexant staff managing the task, selected consultants for the task, the work completed, and the work remaining. Also included is a summary of the expected work for the next quarter.

A. MARKET COMPONENT

Activities 1-6 are included in the Market Component. Activities 1-3 involve project development and financing, either through conventional means or involving ESCOs. Work in these Activities is designed to provide more opportunities for financing energy efficiency projects, as well as to strengthen project sponsors and promoters (ESCOs). Activities 4-5 involve the promotion of new energy efficient technologies and products. Activity 6 aims to broaden the industrial applications using cogeneration technology.

ACTIVITY 1: TECHNICAL AND PROJECT STRUCTURING SERVICES FOR SPONSORS

- Milestone A:*
- 1. Select 10 EE projects (including four in commercial sector)*
 - 2. Conduct 2 workshops on ESCO/financial structure*

Work completed this quarter:

Two workshops on ESCO/Financial structure were conducted in New Delhi and Mumbai in the first week of November 2000. Jim and Shirley Hansen of Kiona International and Govind Rao of 3EC participated as instructors for the session. The following Milestone deliverables were submitted:

- A report on the "Selection of Energy Efficiency Projects" was submitted to USAID in December 2000.
- The ESCO/Financial Structure course material was submitted in December, 2000.

Work planned for next 90 days:

The submittal of the deliverables completes this Milestone. However, revisions to the reports will be provided as required.

Scheduled completion date: December 31, 2000

Nexant Coordinating Staff Member: Vijay M. Deshpande

Sub-contractors/Consultants:

US: Kiona
Indian: 3 EC

- Milestone B:**
- 1. Conduct three training courses on Project Screening**
 - 2. Complete 8 investment grade feasibility studies (including 3 in the commercial sector)**

Work completed this quarter:

General planning of this task has begun, with discussions with ICICI staff on the list of potential projects listed in Milestone 1A.

Work planned for next 90 days:

Continue to work to identify which projects to conduct the eight feasibility studies on. Discuss this ICICI and USAID staff. Select the eight project, and then begin the technical assessments of the projects, followed by the financial assessments.

Scheduled completion date: September 30, 2001

Nexant Coordinating Staff Member: Sunil Kulkarni

Sub-contractors/Consultants:

US: none anticipated
Indian: not yet selected

ACTIVITY 2: DEVELOPMENT OF FINANCIAL INCENTIVES FOR CREDIT ENHANCEMENT/ RISK MITIGATION

Milestone A: 1. Submit initial implementation plan

This Milestone on project mobilization has already been completed and approved.

Milestone B: 1. Develop EE financial incentive mechanisms (at least 5 mechanisms)

Work completed this quarter:

An initial list of participants for the Lenders' Forum was developed and provided to USAID. These people were visited, and the purpose of the Lenders' Forum was discussed. A meeting site was coordinated, and a reservation made to hold the Lenders' Forum on January 17, 2001 in Mumbai.

The financial incentives were also discussed in several of the workshops that were conducted during this quarter, especially the ESCO/Financial structure workshop. Several ideas were already discussed on the establishment of concepts that could serve as financial incentives.

Work planned for next 90 days:

The Lenders' Forum will be held in mid-January. Representatives from many banks and financial institutions will participate in the Forum. The Forum will be led by Tom Stoner of Eenergy International. In preparation for the Lenders' Forum, Mr. Stoner met with USAID staff, Ministry of Power staff, and representatives of many of financial institutions that will participate in the Forum.

The Forum will be used to generate ideas, which will be collected and later distributed to the participants for their review. Mr. Stoner will work with the Lenders' Forum participants to generate at least five mechanisms that can be tested in the market place.

Scheduled completion date: August 30, 2001

Nexant Coordinating Staff Member: Sanjeev Tamhane

Sub-contractors/Consultants:

US: Eenergy International
Indian: none

ACTIVITY 3: SUPPORT TO ENERGY EFFICIENCY SERVICES INDUSTRY

- Milestone A:**
1. *Develop business plan and 1st year agenda for an Indian ESCO trade association;*
 2. *Conduct 2 workshops on Formation of an Indian ESCO Association;*
 3. *Draft a model M&V protocol for verifying energy savings and benefits;*
 4. *Conduct 2 workshops on international examples of M&V protocol;*
 5. *Conduct 2 courses on M&V protocol*

Work completed this quarter:

A one-day workshop was held on the *Formation of an Indian ESCO Association* at Mumbai on November 2 and at Delhi on November 6. A three-day training course on "M&V Protocol" was conducted in New Delhi and Mumbai. A one-day workshop on "International Examples of M&V Protocol" was also held in New Delhi and Mumbai, immediately preceding the M&V Protocol workshops. The following Milestone deliverables were submitted:

- The report on the two workshops on *Development of an Indian ESCO Trade Association* was completed and submitted to USAID.
- The report on the two executive seminars on *International Examples of M&V Protocols* was completed and submitted to USAID.
- The report on the two training courses on *M&V Protocols* was completed and submitted to USAID.
- The business plan and first year agenda for an Indian ESCO trade association was completed and submitted to USAID.
- The India specific M&V protocols for industrial, commercial and residential sectors were completed and submitted to USAID.

Work planned for next 90 days:

The submittal of the deliverables completes this Milestone. However, revisions to the reports will be provided as required.

Scheduled completion date: December 31, 2000

Nexant Coordinating Staff Member: Vijay M. Deshpande

| | | |
|-------------------------------------|-------------------------|----------------------------|
| Sub-contractors/Consultants: | <u>ESCO work</u> | <u>M&V work</u> |
| US: | Kiona | Schiller Associates |
| Indian: | Conserve | Intesco |

- Milestone B:**
1. *Create a business exchange program;*
 2. *Conduct 2 workshops on EE business partnerships*

Work completed this quarter:

General discussions on the business exchange program were held. The 'e-group' communication that was utilized in the M&V tasks were very successful, and it was proposed to base the business exchange program on this concept.

Work planned for next 90 days:

Coordinate with the subcontractors, to develop the business exchange program and to conduct the two workshops.

Scheduled completion date: extended to April 15, 2001

Nexant coordinating staff member: Sanjeev Tamhane

Sub-contractors/Consultants:

US:

NAESCO

Indian:

INTESCO

ACTIVITY 4: EFFICIENT TECHNOLOGY PROMOTION

Milestone A: 1. Complete 2 courses on efficient technology and systems

Work completed this quarter:

A three-day course entitled “Efficient Technologies and Systems” was held in Chennai on 8-10 November in Chennai and in Vadodara on 13-15 November. The following Milestone deliverable was submitted:

- The final report on “Efficient Technology Systems”

Work planned for next 90 days:

The submittal of the deliverables completes this Milestone. However, revisions to the reports will be provided as required.

Scheduled completion date: December 31, 2000

Nexant Coordinating Staff Member: Kapil Thukral

Sub-contractors/Consultants:

US: Brian Wood
Indian: M.K. Raju Consultants Pvt. Ltd.

Milestone B: 1. Submit final market assessment report

Work completed this quarter:

The first draft report was prepared. The report was discussed with USAID for their comments.

Work planned for next 90 days:

Finalize the market assessment report in January, 2001 and submit to USAID for review.

Scheduled completion date: January 31, 2001

Nexant Coordinating Staff Member: Kapil Thukral

Sub-contractors/Consultants:

US: Brian Wood
Indian: A.K. Sachdeva

ACTIVITY 5: MARKET CONDITIONING AND PROMOTION

Milestone A: 1. Submit report on market potential for branded EE products (at least 2 products)

Work completed this quarter:

Prepared spreadsheets on various products, including energy usage and penetration rates. Drafted the report on the branded energy efficient products. Discussed the possible products to be selected for the intensive analysis with USAID staff.

Work planned for next 90 days:

Select at least two products for intensive analysis, and develop energy and marketing information for these products. Finalize the report, based on these products.

Scheduled completion date: extended to February 15, 2000

Nexant Coordinating Staff Member: Kapil Thukral

Sub-contractors/Consultants:

US: Brian Wood
Indian: A.K. Sachdeva

Milestone B: 1. Conduct a marketing course on EE products

Work completed this quarter:

Only preliminary work has started on this Milestone. As Milestone A is being developed (see above), reference is being made to Milestone B, to ensure that each Milestone is conducted knowing what the next objective is... Therefore the work being planned for Milestone A is done with knowledge of what is required for the work under Milestone B.

Work planned for next 90 days:

Select the subcontractors for this task, and plan and conduct the three day course.

Scheduled completion date: April 30, 2001

Nexant Coordinating Staff Member: Kapil Thukral

Sub-contractors/Consultants:

US: not yet determined
Indian: not yet determined

ACTIVITY 6: NON-SUGAR COGENERATION MARKET DEVELOPMENT

Milestone A: 1. Submit a detailed market assessment of the technical and economic potential of cogeneration in the non-sugar industry

Work completed this quarter:

Worked with 3EC staff on developing the market assessment. The draft report has been reviewed, and comments suggested. The draft market assessment report is prepared for USAID review. The final report is being developed.

Work planned for next 90 days:

Submit the report in January 2001.

Scheduled completion date:

January 31, 2001

Nexant Coordinating Staff Member:

Kapil Thukral

Sub-contractors/Consultants:

US:

none

Indian:

3 EC

Milestone B: 1. Conduct 4 regional workshops on cogeneration systems, including technical and financial topics

Work completed this quarter:

A scope of work was developed for the workshops. General planning of where and when the workshops should be held was conducted. Discussed with EPRI representatives about having them conduct this activity.

Work planned for next 90 days:

Continue planning for the workshops.

Scheduled completion date:

February 28, 2002

Nexant Coordinating Staff Member:

Kapil Thukral

Sub-contractors/Consultants:

US:

EPRI

Indian:

none

B. POLICY COMPONENT

This component works with both Central and State Governments, to both strengthen their energy efficiency programs and their policies and procedures. Activities 7 & 8 involve working with the Central Government, and specifically, the Bureau of Energy Efficiency (BEE) once it is formed (The BEE is to be formed when the energy legislation bill is passed). These two activities will work to develop an energy code and an energy auditor certification program. Activity 9 is aimed at local government to improve their energy efficiency and conservation policies and procedures. Activity 10 is training designed specifically for electricity regulatory commissions. Activities 11-13 involve the development of demand side management (DSM) practices into utilities, as they reform and unbundle.

ACTIVITY 7: ENERGY EFFICIENCY POLICY AND INSTITUTIONAL SUPPORT

- Milestone A:*
1. *Submit report identifying candidate institution to certify energy auditors and assessment of abilities and a need to create and sustain a certification program;*
 2. *Present a workshop on voluntary energy auditor certification;*
 3. *Conduct 2 workshops on energy auditor instruction (train the trainers)*

Work completed this quarter:

The two-day workshop on "Voluntary Energy Auditor Certification Program" was conducted in October 2000 in Delhi. A three-day workshop was conducted in December in Hyderabad and Delhi on "Energy Auditor Instruction (train the trainers)". Reports on these two workshops are being completed. Another report on "Candidate Institutes to Undertake Energy Auditor Certification and Training" was drafted.

Work planned for the next 90 days:

Finalize and submit the above three reports to USAID.

Scheduled completion date: extended to January 15, 2001

Nexant Coordinating Staff Member: Vijay M. Deshpande

Sub-contractors/Consultants:

US: Larry Good
Indian: NPC

- Milestone B:*
1. *Complete a strategy paper on the charter, compliance requirements and outreach needed to create a viable certification program;*

2. *Conduct 2 days workshops on financial training for accelerated depreciation;*
3. *Present 2 courses on rational tariff design;*
4. *Establish at least 2 systems for the development of market based EE strategies.*

Work completed this quarter:

General planning for each of the tasks began, and subcontractors for each task were proposed.

Work planned for next 90 days:

A two-day workshop will be conducted in Delhi and Hyderabad on "Financial training on Accelerated Depreciation". A two-day training course will be conducted on "Rational Tariff Design in Jaipur and Bangalore".

Scheduled completion date:

April 30, 2001

Nexant Coordinating Staff Member:

Vijay M. Deshpande

Sub-contractors/Consultants:

| | | |
|----------------------------|----------------|--------------------|
| For Deliverable #1: | US: | AEE |
| | Indian: | not yet determined |
| For Deliverable #2: | US: | not yet determined |
| | Indian: | not yet determined |
| For Deliverable #3: | US: | not yet determined |
| | Indian: | not yet determined |
| For Deliverable #4: | US: | Nexant |
| | Indian: | not yet determined |

ACTIVITY 8: ENERGY EFFICIENCY STANDARDS AND LABELING FOR CONSUMER APPLIANCES

Milestone A: 1. Assist BIS in drafting the implementing regulations for appliance labeling for at least 2 appliances

Work completed this quarter:

Preliminary discussions have taken place with EMC staff regarding future activities.

Work planned for next 90 days:

Work will commence with BIS on selection of at least two appliances to concentrate on, and to begin meeting to draft new regulations for appliance labeling.

Scheduled completion date: December 31, 2001

Nexant Coordinating Staff Member: Vijay Deshpande

Sub-contractors/Consultants:

US: IIEC
Indian: IIEC

*Milestone B: 1. Working with BEE, develop a comprehensive EE standards improvement plan for at least 2 appliances;
2. Conduct 2 workshops on consumer appliance efficiency standards;
3. Conduct 2 training courses on consumer appliance efficiency standards and EE labeling and standards*

Work completed this quarter:

No work has been commenced on this Milestone.

Work planned for next 90 days:

No work is being planned during this quarter for this Milestone.

Scheduled completion date: May 31, 2002

Nexant Coordinating Staff Member: Vijay Deshpande

Sub-contractors/Consultants:

US: not yet determined
Indian: not yet determined

ACTIVITY 9: ENERGY EFFICIENCY IMPROVEMENT IN GOVERNMENT FACILITIES AND PRIVATE BUILDINGS

Milestone A: 1. Prepare a report (using life cycle costing) on at least 2 high-energy use appliances/equipment procured by the government for which minimum standards could be developed.

Work completed this quarter:

Discussed extensively the scope of work, budgets etc., with INNOTEM. Finalized and firmed up the working arrangements and contract. Made initial suggestions for target areas for this task including working with the Indian Railways in their facilities.

Work planned for the next 90 days:

Complete the report on life cycle costing for the procurement of at least two high energy use appliances/equipment being used by local governments.

Scheduled completion date: January 31, 2001

Nexant Coordinating Staff Member: Kapil Thukral & V.M. Thakor

Sub-contractors/Consultants:

US: none
Indian: INNOTEM

*Milestone B: 1. Conduct two training courses for government staff on procurement using life cycle costs;
2. Develop a procedure for government agencies to authorize performance contracts with ESCOs on EE projects;
3. Train government officials on EE performance contracting*

Work completed this quarter:

No work has conducted on this Milestone during this quarter.

Work planned for next 90 days:

Start initial planning for the performance contracting tasks. Work with local ESCOs to discuss current procedures.

Scheduled completion date: May 31, 2002

Nexant Coordinating Staff Member: V.M. Thakor

Sub-contractors/Consultants:

US: not yet determined
Indian: not yet determined

ACTIVITY 10: ENERGY EFFICIENCY THROUGH REGULATORY REFORM AND RESTRUCTURING

Milestone A: *1. Assess training needs for EE through regulation in at least 3 states, and develop a curriculum for training regulatory staff.*

Work completed this quarter:

A team consisting of Mr. Michael Gembol, Mr. Wayne Shirley, Mrs. Anita Kochhar and Mr. V.M. Thakor visited AP, Karnataka, Delhi and Rajasthan during November 2000. Meetings were held with the ERCs, TRANSCOs and various NGOs of the respective states. The training needs assessment (TNA) report was drafted based on these meetings and discussions, and the report was forwarded to USAID. Based on comments received, additional input will be sought from other NGOs and utilities.

Work planned for next 90 days:

Additional comments of utilities and consumer groups are being sought. The TNA report will be finalized and submitted to USAID.

Scheduled completion date: March 31, 2001

Nexant Coordinating Staff Member: Anita Kochhar

Sub-contractors/Consultants:

| | |
|----------------|------|
| US: | IIE |
| Indian: | none |

Milestone B: *1. Prepare and conduct an integrated training program targeted at regulatory personnel (including courses on access to regulatory process for industrial and commercial customers;*
2. Awareness in regulation for residential consumers;
3. Conduct a U.S. study tour for utility staff on the access to the regulatory process.

Work completed this quarter:

Based on the draft TNA report, preparation work on the training courses for access to the regulatory process began. It was suggested that agriculture also be added as an additional sector, and that the three courses each be two days in length.

Work planned for next 90 days:

The training programs will be held in February, in Bangalore and Jaipur. Planning will begin for the US study tour, which is tentatively scheduled for April, 2001.

Scheduled completion date: May 31, 2001

Nexant Coordinating Staff Member: Anita Kochhar

Sub-contractors/Consultants:

US:

IIE

Indian:

none

ACTIVITY 11: ELECTRIC UTILITY DSM/ENERGY CAPACITY BUILDING

Milestone A: 1. Establish selection criteria and identify the focus state

Work completed this quarter:

Rajasthan was selected as the focus state for DSM work, based on interviews and an intensive analysis of several candidate states. The final Report on "Establish Selection Criteria and Identify the Focus State" was submitted to USAID. Revisions were made based on USAID comments, and the report was re-submitted.

Work planned for the next 90 days:

The submittal of the deliverables completes this Milestone.

Scheduled completion date:

November 30, 2000

Nexant Coordinating Staff Member:

V.M. Thakor

Sub-contractors/Consultants:

| | |
|----------------|------|
| US: | none |
| Indian: | None |

- ### ***Milestone B: 1. Establish a DSM Cell in at least 1 DISCO of the focus state and assess their staff needs;***
- 2. Conduct at least 2 workshops on Cell Organization and Management;***
 - 3. Conduct 2 regional training programs on the role of EE.***

Work completed this quarter:

Provided a brief outline for a DSM Cell to the managing director of the Jaipur distribution company. The outline requires that the Cell consist of at least six individuals, and specifies their roles and responsibilities. Selected the subcontractors to conduct the training program on Cell organization and management. Planned the training program, including identifying the training sites, preparing the course materials, and inviting participants. Also planned for an opening ceremony for the initiation of the DSM Cell at the start of the training program in Jaipur.

Work planned for the next 90 days:

Continue to plan for the training programs. Since Bangalore and Jaipur will be the sites for many DSM programs, host institutions in these cities will be sought. Host institutions can help in planning and conducting the training programs, which will add to the value of the programs but also make the programs easier to conduct.

Scheduled completion date:

April 30, 2001

Nexant Coordinating Staff Member:

V.M. Thakor

Sub-contractors/Consultants:

| | | |
|--------------------------------------|----------------|-----------------------|
| For deliverables #1 & #2: | US: | Dr. Claire Fulenwider |
| | Indian: | Saha Sprague Limited |
| For deliverable #3: | US: | IIE |
| | Indian: | none |

Milestone B: 1. *Assist in the design and implementation of a load research program;*
2. *Provide the necessary training and conduct 2 workshops on application of load research to other utility functions;*
3. *Conduct 1 U.S. study tour to introduce participants to successful utility-driven EE programs.*

Work completed this quarter:

Initiated discussions with subcontractors to undertake these tasks.

Work planned for the next 90 days:

Finalize selection of subcontractors and plan for technical assistance work to begin, probably in late February or early March.

Scheduled completion date:

November 30, 2001

Nexant Coordinating Staff Member:

V.M. Thakor

Sub-contractors/Consultants:

| | | |
|--------------------------------------|----------------|----------------------|
| For deliverables #1 & #2: | US: | Dr. Hameed Nezhad |
| | Indian: | Saha Sprague Limited |
| For deliverable #3: | US: | IIE |
| | Indian: | none |

ACTIVITY 12: STATE ENERGY EFFICIENCY FINANCING (SEEF) SCHEMES

Milestone A: 1. Selection of the financial institution in the focus state.

Work completed this quarter:

No work has been commenced on this Milestone.

Work planned for next 90 days:

Based on the outcome of the Lenders' Forum meeting and the activities being undertaken in Milestone 2B, preliminary screening of financial institutions in Jaipur will begin.

Scheduled completion date:

May 31, 2001

Nexant Coordinating Staff Member:

Sanjeev Tamhane

Sub-contractors/Consultants:

US:

NAESCO

Indian:

not yet determined

*Milestone B: 1. Design an EE financing scheme with the financing institution for statewide programs;
2. Conduct a workshop on state energy efficiency financing (SEEF) for government and back officials*

Work completed this quarter:

No work has been commenced on this Milestone.

Work planned for next 90 days:

Based on the outcome of the Lenders' Forum meeting and the activities being undertaken in Milestone 2B, preliminary financing schemes can be developed for discussions with financial institutions in Jaipur.

Scheduled completion date:

August 30, 2001

Nexant Coordinating Staff Member:

Sanjeev Tamhane

Sub-contractors/Consultants:

US:

NAESCO

Indian:

not yet determined

**ACTIVITY 13: DSM/ENERGY EFFICIENCY WITHIN PRIVATIZED
DISTRIBUTION UTILITIES**

Milestone A: 1. Submit detailed work plan.

This Milestone relating to project mobilization and the first year work plan has already been completed and approved.

*Milestone B: 1. Analyze at least two distribution zones/systems (1 urban / 1 rural) and make recommendations on reducing commercial losses.
2. Host 2 workshops with case studies to assist utilities in reducing commercial losses.*

Work completed this quarter:

No work has been commenced on this Milestone.

Work planned for next 90 days:

Initiate work in selecting the two distribution zones/systems in which to conduct this task.

Scheduled completion date:

July 31, 2001

Nexant Coordinating Staff Member:

V.M. Thakor

Sub-contractors/Consultants:

US:

Nexant

Indian:

Saha Sprague Limited

TRAINING

Seven training programs were conducted during the quarter, having a total of thirteen sessions. Most of these programs were workshops, in which the participants interacted to provide insight into various technical topics. The participants were typically asked to describe existing conditions in India, whether it was in regards to ESCOs or energy auditor certification. These discussions will be used to help determine the emphasis for future tasks under the ECO project.

A summary of the training programs held during this quarter is shown in the next page. This summary gives general information about each program.

INCOUNTRY TRAINING ACTIVITIES REPORT
October 1, 2000 to March 31, 2001

Project/Activity Name: **Energy Conservation and Commercialization Project**
 Project /Activity Number: **LAG-I-809-98-0006-00**
 Strategic Objective Number: **4.1**
 Contractor/Grantee: **Nexant Inc.**

| Training Activity/Program Name | | Field of Study (Mgt, Computer, Tech. Skill, Others – specify | Training | | ing Type | Gender | |
|--------------------------------|---|---|------------|----------|-----------------|--------|--------|
| S.No | | | Start Date | End Date | | Male | Female |
| 1. | Energy Auditor certification Program & Training | Energy efficiency | 10/19/00 | 10/20/00 | Workshop | 36 | 1 |
| 2. | ESCO/Financial Strategies | Energy efficiency | 11/01/11 | 11/02/00 | Workshop | 31 | - |
| 3. | Formation of Indian ESCO Association | Energy efficiency | 11/03/00 | 11/03/00 | Workshop | 27 | - |
| 4. | Formation of Indian ESCO Association | Energy efficiency | 11/06/00 | 11/03/00 | Workshop | 22 | 3 |
| 5. | ESCO Financial Strategies | Energy efficiency | 11/07/00 | 11/08/00 | Workshop | 30 | 2 |
| 6. | Efficient Technology & Systems | Energy efficiency | 11/08/00 | 11/10/00 | Training course | | |
| 7. | Efficient technology & Systems | Energy efficiency | 11/13/00 | 11/15/00 | Training Course | | |
| 8. | International Examples of M&V protocol | Energy efficiency | 12/5/00 | 12/5/00 | Workshop | | |
| Training Activity/Program Name | | Field of Study (Mgt, Computer, | Training | | ing Type | Gender | |

Quarterly Progress Report # 3 (October 1 – December 31, 2000)

| S.No | | Tech. Skill, Others – specify | | | | | |
|------|---------------------------------------|----------------------------------|---------------|----------|-----------------|------|--------|
| | | | Start Date | End Date | | Male | Female |
| 9. | Energy Auditor Instruction | Energy Efficiency | 12/6/00 | 12/8/00 | Workshop | | |
| 10. | M&V Protocol | Energy Efficiency | 12/6/00 | 12/8/00 | Training Course | | |
| 11. | Energy Auditor Instruction | Energy Efficiency | 12/11/00 | 12/13/00 | Workshop | | |
| 12. | International Examples of Protocol | Energy Efficiency | 12/11/00 | 12/11/00 | Workshop | | |
| 13. | M&V Protocol | Energy Efficiency | 12/12/00 | 12/14/00 | Training Course | | |

MEETINGS

➤ ECO Advisory Committee

The first ECO Advisory Committee meeting was held on October 12, 2000 at the ICICI building in Mumbai. A list of the Advisory Committee members and the minutes of the October 12 meeting is shown in Appendix A.

The meeting was chaired by Mrs. Lalita Gupte, Joint Managing Director and Chief Operating Officer of ICICI. Since this was the first meeting, a general presentation was made on the scope of work that is included in the ECO project. General discussion followed, with specific interests in the following topics:

- Status of the pending energy legislation
- The selection of Rajasthan as the Focus State
- A request for ECO to leverage the GTZ Indo-German project
- The details concerning the ECO load fund
- The need to stress DSM in the agricultural sector
- Suggestion to place an emphasis on proper billing and metering of utility customers
- Covering risk for ESCOs and lending institutions for financing energy projects
- Consider carrying out DSM in more than one state
- Explore using the Development Credit Authority to guarantee loans (they do this for power plant projects)
- ECO training schedules should be disseminated to other websites for broader coverage

The complete minutes of the Advisory Committee meeting is included in Appendix A.

FINANCIAL INFORMATION

During the second Quarter, two Milestones were achieved. Deliverables for each Milestone were submitted to USAID. These deliverables were approved by USAID, and although the actual transfer of funds may not have taken place, the payments for those deliverables are shown as occurring during this quarter. Financial summary information is shown below:

| | | |
|---|------------------|---------------------------|
| PROJECT TOTAL BUDGET: | | \$9,396,458 |
| CUMULATIVE PAYMENTS TO BEGINNING OF QUARTER: | <u>\$101,920</u> | |
| BALANCE AT BEGINNING OF QUARTER: | | <u>\$9,294,538</u> |
| MILESTONES PAID THIS QUARTER: | | |
| 4A: Complete 2 courses on efficient technology and systems. | \$100,514 | |
| 11A: Establish selection criteria and select Focus State. | \$ 93,232 | |
| SUM OF MILESTONES PAID THIS QUARTER: | | \$ 193,746 |
| BALANCE: | | <u>\$9,100,792</u> |

PERFORMANCE INDICATORS

The ECO project Activities are shown on the Performance Indicator chart (Appendix B). This is a preliminary chart, to illustrate the methodology that is being proposed to track the project performance.

Each of the Activities has several Milestones, and within the Milestones are several deliverables. Some of the deliverables and Milestones are 'soft', in that they influence policy but don't produce any direct energy savings in or of themselves. Most of this type of Milestone will not produce quantifiable or measurable results. Rather, most of these are the initial or preliminary tasks, leading up to major policy or institutional changes in later Milestones. Examples of this type of effort would be training programs, which by themselves do not produce energy savings. Other deliverables and Milestones produce direct results, which can be easily quantified.

To analyze the results of each Activity, it is necessary to establish a method of tracking the progress for each Milestone, regardless of whether the Milestone has quantifiable results or is more subjective. of these policy-related Milestones is required. Training programs can be "measured" by the number of participants. This can be measured against the participation "goal" stated in the RFP for each program, such as "2 regional programs, 20 participants each". Methods such as this can be utilized to evaluate the success of subjective Milestones. These types of methodologies will be utilized in assessing the achievements of the Milestones. The results will be tabulated to track the progress of the emission reduction effort.

**APPENDIX A
ECO PARTNER'S MEETING MINUTES**



ENERGY CONSERVATION & COMMERCIALISATION
(ECO) PROGRAMME

Summary of the Proceedings of the First Advisory Committee Meeting
held on October 12, 2000 at 11.00 a.m. at ICICI, Mumbai

The list of members and invitees that attended the First Advisory Committee Meeting held on October 12, 2000 at ICICI, Mumbai is given in the annexure.

Smt Lalita D. Gupte, Joint Managing Director & Chief Operating Officer, ICICI chaired the meeting and Shri J. Vasudevan, Additional Secretary, Ministry of Power co-chaired the meeting. Smt. Lalita D. Gupte, Chairperson, welcomed all the members and invitees to the first advisory committee meeting. She briefly described the background of ECO Programme and highlighted the efforts taken by the GOI to draft the Energy Conservation Bill.

Shri Vasudevan described the work being done by MoP in this sector and the status of the draft Energy Conservation Bill. He pointed out that the bill would stress on development, standards for appliances, information and communication and use of tax and subsidy to promote energy efficiency. He said that though legal framework would be a part of the proposed legislation development activities like information campaigns and education will also be given importance to create awareness. He mentioned of their plan to set up a group to advise on tariff policy for flattening the load curve. He requested that the ECO experience be replicated and stressed that education and training should form an important part of such programmes. He sought assistance for advice on the tariff policy and promotion of energy efficiency. Mr. Edwards of USAID mentioned that they could provide assistance through consultants to address these issues.

Mr. Richard Edwards, Director, Office of Energy, Environment & Enterprise, USAID while welcoming the members also briefed them on the current US focus on global climate change particularly reduction of greenhouse gas emissions. He stressed the need to address areas where energy efficiency had a major role to play namely clean coal technologies, transmission & distribution of power etc. Mr. Edwards mentioned of the protocol of intent signed for training of personnel from the Ministry of Power.

Shri Ashok Sarkar of USAID made a presentation on the ECO Programme to the members. He highlighted the objectives of the programme and described the project framework. He also described the markets and the policy components of the programme. Mr. Sarkar mentioned about the ECO Loan fund, which would be implemented by ICICI. He also introduced the ECO Institutional Contractor, Nexant and their targets. Thereafter, Mr. Charles Fafard, Chief of Party, Nexant Inc, made a presentation on the mandate given to them (deliverables). He also described briefly the criteria being followed for selection of the

Focus State to implement DSM activities. He thanked MoP & ICICI for supporting Nexant in its efforts to select the focus State. The members were informed that Rajasthan has been finalised as the focus State. Further he informed the members that about six more visits are being planned for the balance period of the first year to some states and sought participation from MoP and ICICI for these visits.

Shri Shashi Shekhar of MoP suggested combining the legal framework, fixing of standards with markets transformation. He also mentioned that at least two states should be selected and capacity building exercise should be carried out in more reforming states. Further, he mentioned that each state be requested to identify a core team for the capacity building exercise to be successful. He called for the need to make these projects or assistance demonstrative in nature. He mentioned that substantial energy efficiency could be achieved through efficient ground water pumping. He stressed the need for a study and suggested that Coimbatore may be a promising area to undertake such a ground water table study. Mr. Charles Fafard mentioned of the need to create a lenders forum and an ESCO association to start a dialogue with financial institutions.

During the general discussions Smt Gupte suggested that Nexant involve CII, IEMA, other chambers of commerce and also manufacturers of appliances like BPL, Videocon (for labeling) and offered ICICI assistance whenever required. She requested Nexant to leverage experience of the Indo German Energy Efficiency Project. Shri Bapat offered CII's assistance for these activities as CII does similar activities and most electrical equipment manufacturers are members of CII. Shri Padmanabhan of USAID stressed on the need to implement DSM activities in the agricultural sector where large savings potential exists and that these savings then could be sold to the industry resulting in additional revenue to the utilities. Shri Chari of IDFC mentioned that IDFC has experience in this sector and would help the project. Shri Asthana of NPC suggested that the Programme concentrate on sectors such as paper, petrochem, manmade fibre and on expansion of captive power. He also suggested capacity building for state utilities and nodal agencies. Shri Prabhakara mentioned that an energy conservation project was a net gain to all – the user and the utility. He said that due to poor quality of power most equipment is designed for a wide range of voltage making them energy inefficient. Shri Prabhakara stated the importance for proper billing and metering in power intensive sectors like agriculture. Mr. Kaupp of GTZ mentioned risk cover to be a very important issue while funding ESCO's and that FI's and banks address this issue first. Shri Padmanabhan felt the customer and the ESCO should share this risk. Shri Dua of BSES highlighted the importance of consumer education. He also suggested that differential tariff should be first implemented at inter region transfer point rather than at the consumer end as bulk monitoring would be easier. To achieve this, he suggested that Power Grid Corporation install time of day meters. Mr. Charles Fafard confirmed that DSM activities would be carried out in more than one state. Mr. Edwards suggested that Development Credit Authority (DCA) has provided limited guarantees for a proposed power plant based on renewable sources of energy in Rajasthan and that DCA could be explored for providing guarantees to other projects also. Smt Gupte requested that training schedules should be disseminated in advance and possibility of using CII and other websites for this purpose should be explored.

ANNEXURE

| List of Participants | Designation | Organisation |
|-----------------------|--------------------------------------|--|
| Members | | |
| Smt Lalita D. Gupte | Jt M.D. & Chief Operating Officer | ICICI |
| J. Vasudevan, I.A.S | Additional Secretary | Ministry of Power |
| Richard Edwards | Director - EEE | USAID |
| B.R. Prabhakara | Chief Executive | M.S. Ramaiah Institute of Technology |
| A.K. Asthana | Director (EM) | National Productivity Council |
| Dr. Albert Kaupp | Coordinator | Urban & Industrial Environment & Resource Protection - GTZ |
| S.S. Dua | Director (Technical) | BSES Limited |
| P.R. Bapat | Chairman-CII Energy SubCommittee -WR | Confederation of Indian Industry |
| A.K.T. Chari | Chief Operations Officer | Infrastructure Development Finance Co. Ltd |
| Invitees | | |
| Shashi Shekhar, I.A.S | Director (Thermal) | Ministry of Power |
| Ashok Sarkar | Project Officer | USAID |
| Madhumita Gupta | Dy. Director | USAID |
| S. Khasnobis | General Manager | ICICI |
| Neeta Mukerjee | Regional Manager | ICICI |
| S. Padmanabhan | Senior Energy Advisor | USAID |
| Anil Malhotra | Vice President | ICICI |
| Jaisingh Dhumal | Assist. Vice President | ICICI |
| Girish Mahajan | Assist. Vice President | ICICI |
| Charles Fafard | Chief of Party | Nexant Inc. |
| Mark Tribble | Consultant | Nexant Inc. |

APPENDIX B
PERFORMANCE INDICATORS CHART

FIGURE 1: PERFORMANCE INDICATORS (continued)

MARKET COMPONENT

| ACTIVITY & INDICATORS | DESCRIPTION | ESTIMATED ENERGY SAVINGS, MILLION KWH | ANTICIPATED RESULTS (PERCENTAGE BY YEAR) | | | | EXPECTED RESULTS- MILLION TONS CO ₂ |
|---|--|---------------------------------------|--|------|------|------|--|
| | | | 2000 | 2001 | 2002 | 2003 | |
| 1. Technical and Project Structuring Services for Sponsors Indicators: select 10 projects | AVERAGED SAVINGS FROM INITIAL PROJECTS - 5.857 MILLION KWH SAVED/PROJECT | 23.4 | 0 | 25 | 75 | 100 | 0.0234 |
| 2. Development of Financial Incentives for Credit Enhancement/Risk Mitigation Indicators: establish at least 5 financing mechanisms | BASED ON #1 ABOVE, BUT ASSUME 10 PROJECTS/YEAR | 234 | 0 | 25 | 60 | 100 | 0.234 |
| 3. Support to Energy Efficiency Services Industry Indicators: development of a national ESCO association, using ECO loan funds | BASED ON #1 ABOVE, BUT ASSUME 10 PROJECTS/YEAR | 234 | 0 | 25 | 50 | 100 | 0.234 |
| 4. Efficiency Technology Promotion Indicators: develop EE technology promotion program and establish energy information clearinghouse | ASSUME 100 KW/YR SAVINGS @ 4000 HOURS | 0.4 | 0 | 20 | 50 | 100 | 0.0004 |
| 5. Market Conditioning and Promotion Indicators: assess market for 4 EE processes and facilitate a labeling program for at least 2 appliances | ASSUME 1000 KW/YR @ 2000 HOURS | 2.08 | 0 | 20 | 60 | 100 | 0.00208 |
| 6. Non-Sugar Cogeneration Market Development Indicators: facilitate the design, development and implementation of at least one non-sugar cogeneration system | BASED ON 40 KW SYSTEM, OPERATING 8000 HOURS/YR. | 0.32 | 0 | 25 | 50 | 100 | 0.00032 |
| COMPONENT TOTAL: | | | | | | | 0.4942 |

NOTES: DATA FOR THE 'EXPECTED RESULTS - MILLION TONS OF CO₂ HAS BEEN ESTIMATED BASED ON EXPECTED IMPACT OF EACH ACTIVITY AND KNOWING WHEN EACH ACTIVITY IS LIKELY TO BE COMPLETED. THIS INFORMATION WILL THEN BE UTILIZED TO TRACK THE PROJECT'S PERFORMANCE AGAINST THE REDUCTION IN EMISSIONS.

FIGURE 1: PERFORMANCE INDICATORS (continued)

POLICY COMPONENT

| ACTIVITY & INDICATORS | DESCRIPTION | ESTIMATED ENERGY SAVINGS, MILLION KWH | ANTICIPATED RESULTS (PERCENTAGE BY YEAR) | | | | EXPECTED RESULTS - MILLION TONS CO ₂ |
|---|---|---------------------------------------|--|------|------|------|---|
| | | | 2000 | 2001 | 2002 | 2003 | |
| 7. Energy Efficiency Policy and Institutional Support Indicators: develop a voluntary auditor certification program, curriculum, and a national EE promotion plan | ASSUME 1000 KW @ 2080 HRS | 2.08 | 0 | 40 | 80 | 100 | 0.00208 |
| 8. Energy Efficiency Standards and Labeling for consumer Appliances Indicators: facilitate 2 appliance labels, develop criteria for a certified EE testing laboratory | ASSUME 100,000 APPLIANCES SAVING 1 KW/YR @ 2080 HRS | 208 | 0 | 20 | 60 | 100 | 0.208 |
| 9. Energy Efficiency Improvement in Government Facilities and Private Buildings Indicators: facilitate local government EE procurement practices and a national building energy code | ASSUME 1,000,000 LAMPS, EACH SAVING 25 W/YR @ 2080 HRS | 52 | 0 | 25 | 50 | 100 | 0.052 |
| 10. Energy Efficiency through Regulatory Reform and Restructuring Indicators: train regulatory staff on IRP and DSM | TARIFF CHANGES MAY INCREASE REVENUES, BUT NOT AFFECT EFFICIENCY. TOD CHANGES WILL ALSO NOT SAVE ENERGY. | 0 | 0 | 0 | 0 | 0 | 0 |
| 11. Electric Utility DSM / Energy Efficiency Capacity Building Indicators: select focus state, develop DSM cell, conduct load research, develop DSM programs, finance pilot program | ASSUME 1000 NEW AG PUMPS, BUT EACH SAVES ONLY 1 KW @ 2000 HRS/YR | 2 | 0 | 25 | 70 | 100 | 0.002 |
| 12. Development of State Energy Efficiency Financing Schemes Indicators: select financing institution in focus state, assist in developing financing intermediation mechanisms | ASSUME 100 KW @ 2080 HRS/YR | 0.2 | 0 | 25 | 60 | 100 | 0.0002 |
| 13. DSM / Energy Efficiency within Privatized Distribution Utilities Indicators: promote DSM in privatized DISCOs, design 2 pilots in distribution efficiency including financing | ASSUME 1000 NEW AG PUMPS, BUT EACH SAVES ONLY 1 KW @ 2000 HRS/YR | 2 | 0 | 25 | 50 | 100 | 0.002 |

COMPONENT TOTAL: 0.26628

PROJECT TOTAL: 0.76048

NOTES: DATA FOR THE 'EXPECTED RESULTS - MILLION TONS OF CO2 HAS BEEN ESTIMATED BASED ON EXPECTED IMPACT OF EACH ACTIVITY AND KNOWING WHEN EACH ACTIVITY IS LIKELY TO BE COMPLETED. THIS INFORMATION WILL THEN BE UTILIZED TO TRACK THE PROJECT'S PERFORMANCE AGAINST THE REDUCTION IN EMISSIONS.

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