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# USAID ENERGY POLICY PROGRAM

## FEEDBACK EVALUATION REPORT OF TRAINING ON POWER SECTOR INTEGRATED MODEL (POWERSIM)

June 2015

*This program is made possible by the support of the American people through the United States Agency for International Development (USAID)*

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December 2013-January 2015

Contract No: AID-EPP-I-00-03-00004

Order No: AID-391-TO-12-00002

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# CONTENT

TRAINING ON POWER SECTOR INTEGRATED MODEL.....	1
ASSESSMENT.....	4
PARTICIPANT FEEDBACK.....	4
ANNEX I: PHOTOGRAPHS.....	7
ANNEX II: AGENDA.....	8
Ministry of Water and Power.....	8
Ministry of Petroleum and Natural Resources.....	9
Planning Commission.....	9
ANNEX III: LIST OF TRAINEES.....	10

# TRAINING ON POWER SECTOR INTEGRATED MODEL

The Energy Policy Program (EPP) conducted three independent training sessions on the Power Sector Integrated Model (Power SIM) training for senior officials and technical staff of the Ministry of Petroleum and Natural Resources (MPNR), Ministry of Water and Power (MWP) and Planning Commission (PC). A total of 16 participants (14 males and 2 females) attended the sessions. The training agenda included an overview of the power sector, a presentation on the salient features of Power SIM and its capabilities and constraints, and its application across various sectors.

Organization	Training Duration	Male	Female	No. of Participants
MWP	December 2-6, 2013	6	-	6
MPNR	June 21, 2014	6	1	7
PC	January 13, 21 & 22, 2015	2	1	3
Total Participants		14	2	16

The training sessions concluded with question-answer discussion during which participants were given an opportunity to provide their comments and feedback. In an effort to determine whether the training sessions were beneficial, EPP asked participants to fill in feedback forms, which were collected at the end of the sessions.

The feedback form focused on various aspects of the training program. Participants were asked to provide ratings from 1 to 5: with 1 for “Did not meet expectations” and 5 for “Outstanding”.

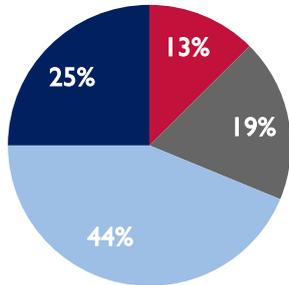
The following is a summary of their responses:

*5 = Outstanding, 4 = Very good, 3 = Satisfactory, 2 = Needs Improvement, 1 = Did not meet expectations*

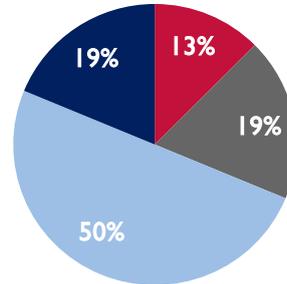
	Did Not Meet Expectations	Needs Improvement	Satisfactory	Very Good	Outstanding
Relevance to your organization’s work area	0	2	3	7	4
Relevance to your work within the organization	0	2	3	8	3
Structure of the program	0	2	4	6	4
Topics covered in the program	1	1	4	4	6
Quality of class room interactions	0	1	3	7	5
Quality of training and reading materials	0	2	4	6	4
Appropriateness of reading materials	1	3	2	7	3
Quality of Speakers/Trainers	1	1	4	4	6
Training Content & Relevance	1	1	4	4	6
Trainer/Speaker Effectiveness	0	2	4	5	5

Did not meet expectations
  Needs improvement
  Satisfactory
  Very good
  Outstanding

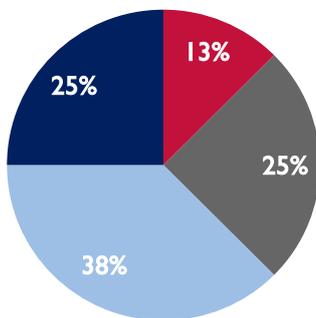
**Relevance to Your Organization's Work Area**



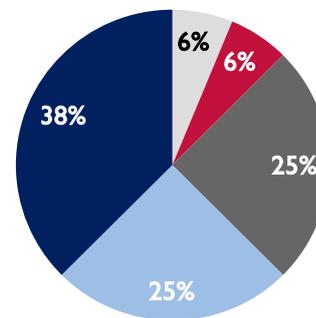
**Relevance to Your Work Within the Organization**



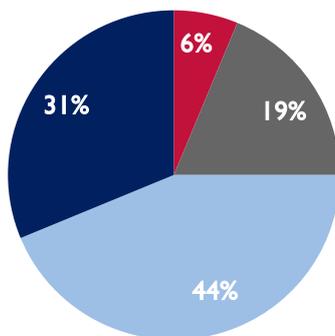
**Structure of the Program**



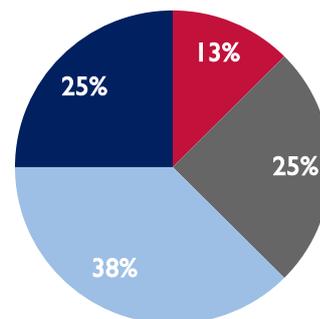
**Topics Covered in the Program**



**Quality of Class Room Interactions**

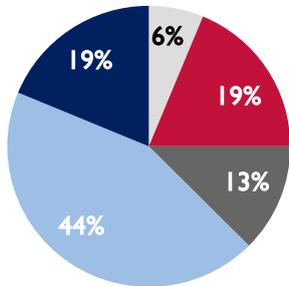


**Quality of Training and Reading Materials**

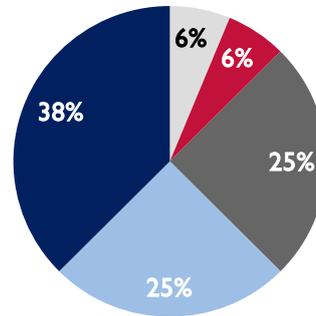


Did not meet expectations
  Needs improvement
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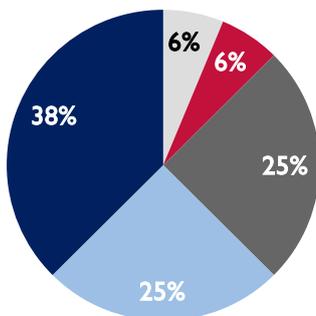
**Appropriateness of Reading Materials**



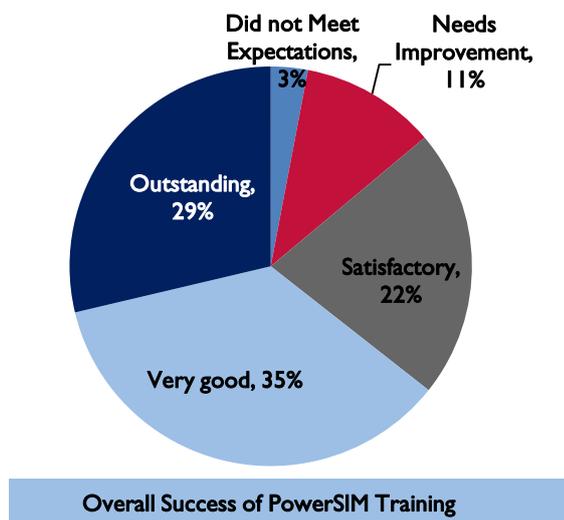
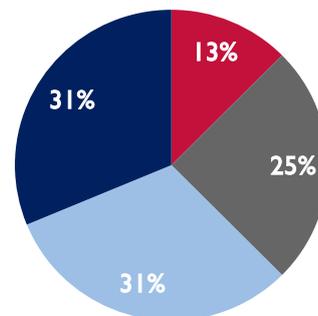
**Quality of Speakers/Trainers**



**Training Content & Relevance**



**Trainer/Speaker Effectiveness**



# ASSESSMENT

Feedback on the structure of the training program was generally positive and the participants found the trainers' knowledge very useful. Principal suggestions for improving the training program were as follows:

- Increase in duration of hands-on training duration for more in-depth analysis of PowerSIM.
- Longer training period to address the material of the training manuals.
- Focus on implementation and customization of the model to the organization requirements.
- Need for a refresher session for previously trained participants.
- Holding of training sessions on weekends in view of heavy workloads during weekdays.

## PARTICIPANT FEEDBACK

The following section compiles quotes from participant from the post-training feedback form.

### Please share any other observation or comments regarding the trainer/training program/logistics:

A significant number of participants mentioned that the training program was very interesting and were satisfied with the quality of the trainers:

- *"The trainers were good, but they should try to make the training program more interesting; the duration should also be increased to two days."*
- *"It was very interesting."*
- *"Friendly and interactive session."*
- *"It was a very interactive session. We clarified our understanding of power sector dynamics."*
- *"Very impressed with the EPP representative. He welcomed all the participants cordially."*
- *"The training program was excellent. All trainers imparted training in a professional manner and covered almost all aspects that lead to development of the model."*
- *"The training program may be expanded for two weeks, as the time we spent with the trainer was very less but overall the contents we discussed in the introduction session were very useful."*

### How could MPNR/MWP/PC integrate the PowerSIM systems?

- "PSIM can be customized for MPNR by: 1) Interpreting well head prices of all field, 2) By including cost features as determined by OGRA."
- "Power sector is most dependent which are supplied by Ministry of Petroleum, prices of oil and gas have an impact on electricity tariff."
- "MPNR needs effective and efficient model which is easy to understand and easy to use."
- "It will help MPNR to develop model based on gas pricing specially import in LNG, import gas from Iran, Turkmenistan, Qatar."
- "There is no doubt that PowerSIM can ensure best practices in this setup. However, USAID must ensure that this system is adopted implemented and provide some sort of mechanism to ensure sustainability of the system like developer modification contracts & training."
- "Yes because it contains all the parameters which are involved in our system and as a result we will get the results for our own requirements."
- "All the power sector inputs are available, I intend to start with asserting results from PowerSIM by testing the present projects & reforms regime in it."

- “Presently we are dealing with IPP's so we will try to integrate and give suggestions to the concerned department regarding this.”
- “It was a sort of refresher for me helping me in clearing a lot of untouched terms which are not used every day.”
- “Training has given us knowledge of scenarios which are going on in our system.”

### What specific skill(s) did you gain as a result of this training?

A significant number of participants shared the new skills they gained from this training and how these skills would be useful in the performance of their job functions:

- *“Basic understanding of the model.”*
- *“I learned that increase supply of gas to power sector will decrease tariff significantly got understanding of power sector and importance of input fuels.”*
- *“I have been able to get an overall idea of modeling my spread sheets.”*
- *“This training little bit enhanced my capabilities towards my assignments.”*
- *“Firsthand knowledge of power sector pricing and different technical matters.”*
- *“Since the model is Excel-based, it can respond instantly and help us in quick decision-making.”*

### In the future, how will you apply what you have learned? Please detail how you will leverage and deploy any knowledge you have gained?

Participants felt that the training was very useful for carrying out their jobs:

- *“It has given us an idea to develop similar model for pricing.”*
- *“We will suggest developing PowerSIM for MPNR which will enable us to watch oil inventory availability of natural gases CNG and coal.”*
- *“Of course the power SIM model can be tailored for me in gas sector.”*
- *“It will help me while discharging my duty in future.”*
- *“As indicated earlier it will help in fixation of consumer prices on weighted average cost of gas especially utilization of imported LNG and imported gas from Iran.”*

How will your organization benefit from the PowerSIM training in both the short term and long term?

- *“It helped our Finance and Planning officers to get an understanding of power sector.”*
- *“MNPR can use PowerSIM to determine the average gas cost. More importantly, it may determine how much sale prices of different sectors are to be increased and decreased to cover the average gas price/cost.”*
- *“It will help us in having a fair idea of impact of gas or oil prices in power tariffs”*
- *“It will do far better in my assignment.”*
- *“Planning and projection of power sector parameters is a regular part of Planning Commission’s working. Therefore, PSIM would help in carrying out the day-to-day activities of our organization.”*
- *“Self-practice on this PSIM to get better understanding, Medium term planning can be done by consulting with USAID officials for further inquiry.”*
- *“In the medium- and long-term, the streamline or integrated data input will assist the organization to make informed decision-making and policy formulation. Overall, the training was good. Still there is a need for improvement in the structure of the training.”*
- *“In medium-term, we would be able to generate our own data/information instead of getting it from attach departments. Frequent trainings on important policy matters/decision-making.”*
- *“This Model is basically an attempt to unify the financial flow of the Power/Energy sector of the country and is a vital attempt with regards to establishing a well-planned regime in moving forward and future projection of actions being taken in lieu of power sector reforms besides providing an understanding of the enigmatic working of this sector, This program, if pursued properly, can play a key role in devising the way forward to be adopted in planning and*

*understanding the sector and to achieve the desired results, and most importantly, in judging the transparency of an intended reform.”*

- *“In the long-term, it will be very effective. If the input values required in PowerSIM be accurate, then the result will be very helpful for implementation in the system, because it contains all the parameters which are involved in our system, and as result, we will get results for our own requirements.”*

## What was missing in the PowerSIM Training?

Participants raised various issues that they felt were missing from the training:

- *“Relevance to MPNR.”*
- *“PSIM was basically for power sector, by obtaining training inputs, now it should be customized for MPNR and some current figures are to be taken to solve prevailing problem/situation.”*
- *“I think it is a fairly good model.”*
- *“There is nothing missing but it seems confusing how this will apply in gas pricing.”*
- *“It should have been for a longer duration instead of one day.”*
- *“Planning Commission has received only introductory lectures in the training, therefore, further training is required.”*
- *“If possible, a refresher or discussion session should be held; a sort of a help desk or knowledge base with graphic details.”*
- *“Longer training period will be more helpful as we will be able to develop better understanding of the systems.”*

## Do you have any suggestions for how we could improve future PowerSIM trainings?

- *“While inviting the relevant officers, the duration of the training should be increased to at least three days, followed by some assignment or scenarios.”*
- *“Suggestions will be after next session when we will have SIM customized for Ministry of Petroleum & Natural Resources (MPNR).”*
- *“It should give more flexibility to users to change inputs.”*
- *“Training instruction should be in Urdu language.”*
- *“We hope USAID will help MPNR in developing a model for gas consumers including power sector.”*
- *“Should be continued, laptops should be provided to internees after training for suggestions in model”*
- *“Future trainings are a must for officers of MWOP from technical and financial side.”*
- *“Time duration should be increased in addition to provision of necessary equipment, necessary notebooks i.e. laptops to the participants to get handy with the software.”*
- *“Due to busy schedule/working in the ministry, training on weekends may be more feasible as compare to weekdays.”*
- *“Facilitation of material be made convenient.”*
- *“Debriefing session should be held on how this model is prepared and what key performance indicator have been taken into account.”*
- *“Overall the training was good. Still, there is a need for improvement in the structure of the training.”*
- *“Frequent trainings on important policy matters/decision-making.”*
- *“Please ensure that you train the personnel on all levels in their respective fields; it is eminent in this time of crises.”*

# ANNEX I: PHOTOGRAPHS



# ANNEX II: AGENDA

## MINISTRY OF WATER AND POWER

**Date:** December 2-6, 2013

**Location:** EPP Office, Conference Room

**Objective:**

- Familiarize the Ministry staff with PowerSIM
- Provide training for MWP staff to enter data, run scenarios and generate results
- Provide training for updating PowerSIM

### Training Schedule

Day 1	Dec. 2, 2013	Overview/General Inputs <ul style="list-style-type: none"><li>• Model Overview – Data Flow Diagram</li><li>• Demand and Energy Forecast Inputs</li><li>• System Inputs</li><li>• General Assumptions</li></ul>
Day 2	Dec. 3, 2013	Generation Inputs <ul style="list-style-type: none"><li>• Generation Operational Database</li><li>• Cost of Production (EPP &amp; CPP calculations)</li><li>• Merit Order/Economic Dispatch</li></ul>
Day 3	Dec. 4, 2013	Distribution/Transmission Inputs <ul style="list-style-type: none"><li>• Transmission Charge/Losses</li><li>• Distribution Margin/T&amp;D Losses/Recoveries</li><li>• Cost of Service</li><li>• Slab-wise Units Sold/Tariffs/Subsidy/Deficit/</li><li>• Circular Debt</li></ul>
Day 4	Dec. 5, 2013	Model Configuration/Data Entry <ul style="list-style-type: none"><li>• Base Model Setup demonstration</li><li>• Input/output relations</li><li>• Interpretation of outputs</li></ul>
Day 5	Dec. 6, 2013	Scenario Analysis <ul style="list-style-type: none"><li>• Pre-determined scenarios (tariff changes/fuel substitution/gas allocation)</li><li>• Q&amp;A Session</li><li>• General Feedback/Next Steps</li></ul>

## MINISTRY OF PETROLEUM AND NATURAL RESOURCES

**Date:** June 21, 2014

**Location:** EPP Office, Conference Room

### First Session – Introduction

Start Time	Activity	Speaker	Duration (min.)
09:15 am	Registration/Morning Tea		
09:30 am	Opening Remarks	M. Addison	5
09:35 am	Introduction of Participants		5
09:40 am	Power Sector Introduction and Q&A	S. Rifai	50
10:30 am	Application of Power SIM for Petroleum Sector/Benefits	M. Qureshi	30
11:00 am	Model Configuration/Overview	M. Addison	30
11:30 am	Scenario Analysis	A. Mangrio	30
12:00 noon	Open Discussion		30
12:30 pm	Break		

### Second Session – In Depth Review of PowerSIM

Start Time	Activity	Speaker	Duration (Min)
01:30 pm	Generation Module	M. Qureshi	45
02:15 pm	Transmission/Distribution Module	M. Qureshi	45
03:00 pm	Output/Summary Module	F. Khan	15

### Third Session – Wrap Up

Start Time	Activity	Speaker	Duration (Min)
03:15 pm	Q&A Session		20
03:35 pm	Future Model Development	MPNR	20
03:55 pm	Closing Remarks	M. Addison	5

## PLANNING COMMISSION

**Date:** January 13, 21 & 22, 2015

**Location:** Energy Wing, Planning Commission

Start Time	Activity	Duration (Hrs.)
Depending on Trainee Availability	PowerSIM Introduction, Data Entry & Implementation	3-4

# ANNEX III: LIST OF TRAINEES

**Confidential information redacted**

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