



# Training Workshops for Financial Institutions on Energy Efficiency (EE) Financing in India



22 NOVEMBER 2017- BANGALORE  
19 DECEMBER 2017- MANGALORE



Indian Banks' Association



**IFC** International Finance Corporation  
WORLD BANK GROUP

*Creating Markets, Creating Opportunities*



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EUROPEAN UNION

## Contents

1. ABBREVIATIONS .....	3
2. OVERVIEW .....	4
3. TRAINING WORKSHOPS IN KARNATAKA .....	5
4. BANGALORE – WORKSHOP PROCEEDINGS .....	6
4.1. INAUGURAL SESSION.....	6
4.2. PRELIMINARY QUIZ.....	7
4.3. TECHNICAL SESSION.....	7
4.4. ACTIVITY SESSION .....	9
TECHNICAL SESSION (CONTD).....	9
4.5. FINAL QUIZ.....	10
4.6. CONCLUDING SESSION.....	10
ANNEX A – BANGALORE WORKSHOP – FEEDBACK EVALUATION .....	11
WHAT THE PARTICIPANTS LIKED THE MOST ABOUT THE WORKSHOP.....	19
WHAT THE PARTICIPANTS SUGGESTED FOR FURTHER IMPROVEMENT IN THE WORKSHOP .....	19
ANNEX B – BANGALORE WORKSHOP – AGENDA .....	20
ANNEX C – BANGALORE WORKSHOP – LIST OF PARTICIPANTS.....	21
5. MANGALORE – WORKSHOP PROCEEDINGS .....	1
5.1. INAUGURAL SESSION.....	1
5.2. PRELIMINARY QUIZ.....	2
5.3. TECHNICAL SESSION.....	3
5.4. ACTIVITY SESSION .....	4
TECHNICAL SESSION (CONTD).....	5
5.5. FINAL QUIZ.....	5
5.6. CONCLUDING SESSION.....	6
ANNEX A – MANGALORE WORKSHOP – FEEDBACK EVALUATION.....	7
WHAT THE PARTICIPANTS LIKED THE MOST ABOUT THE WORKSHOP.....	15
WHAT THE PARTICIPANTS SUGGESTED FOR FURTHER IMPROVEMENT IN THE WORKSHOP .....	15
ANNEX B – MANGALORE WORKSHOP – AGENDA.....	16
ANNEX C – MANGALORE WORKSHOP – LIST OF PARTICIPANTS .....	17

## 1. ABBREVIATIONS

<b>BEE</b>	Bureau of Energy Efficiency
<b>DPR</b>	Detailed Project Report
<b>DSCR</b>	Debt Service Coverage Ratio
<b>EE</b>	Energy Efficiency
<b>EEFP</b>	Energy Efficiency Financing Platform
<b>ESCO</b>	Energy Service Company
<b>ESPC</b>	Energy Savings Performance Contract
<b>EU</b>	European Union
<b>FI</b>	Financial Institution
<b>GHG</b>	Green House Gases
<b>GoI</b>	Government of India
<b>IBA</b>	Indian Banks Association
<b>IFC</b>	International Finance Corporation
<b>IGAR</b>	Investment Grade Audit Report
<b>IPMVP</b>	International Performance Measurement and Verification Protocol
<b>IRR</b>	Internal Rate of Return
<b>M&amp;V</b>	Measurement and Verification
<b>KREDL</b>	Karnataka Renewable Energy Development Limited
<b>MSME</b>	Micro, Small and Medium Enterprises
<b>NBFC</b>	Non-Banking Financial Corporation
<b>NDC</b>	Nationally Determined Contribution
<b>PRGFEE</b>	Partial Risk Guarantee Fund for Energy Efficiency
<b>RE</b>	Renewable Energy
<b>SDA</b>	State Designated Agency
<b>SIDBI</b>	Small Industries Development Bank of India
<b>SME</b>	Small and Medium Enterprises
<b>ToT</b>	Training of Trainers
<b>VCFEE</b>	Venture Capital Fund for Energy Efficiency
<b>WBG</b>	World Bank Group

## 2. OVERVIEW

### Launch of Phase II of Training Workshop for Financial Institutions on Energy Efficiency (EE) Financing

Energy Efficiency (EE) has emerged as one of the major resources, a viable and the most cost effective solution to meet escalating energy demand in India. EE measures have three-fold benefits – they are cost-effective, increase energy security and mitigate greenhouse gas emissions.

In India, the Industries (Large and Small and Medium Enterprises (SMEs)), the Buildings (Commercial and Government) and the Municipalities consume around 50% of the total electricity consumption. There exists substantial energy saving potential in these sectors by adopting EE technologies. The Bureau of Energy Efficiency (BEE) estimates that more than INR 1,60,000 crores investment potential exists in EE implementation out of which INR 56000 crore of investment potential exists with the Industries, Buildings and Municipality sectors alone.

Despite having a substantial investment potential in EE sector, the growth in EE financing has been slow. One of the major barriers to EE implementation is the perceived risk (on EE projects) by Financial Institutions (FIs) due to limited understanding of the sector. In order to create awareness among the FIs on the financing needs for EE implementation, BEE has taken several initiatives. BEE had launched training programs for commercial banks under its Energy Efficiency Financing Platform (EEFP) in June 2015. With the objective to “*build greater knowledge and confidence through training programme within the financial sector on Energy Efficiency financing*”, in Phase I (June 2015 to June 2017) BEE had successfully completed 4 Training of Trainers (ToT) workshops and also supported Canara Bank and South Indian Bank in organizing workshops on EE financing. More than 100 Bank/ Non-Banking Financial Corporations (NBFC) officials were trained in Phase I.

Taking this initiative further, under the Phase II program, BEE in partnership with State Designated Agencies (SDAs), Indian Banks Association (IBA) and with the technical support from International Finance Corporation (IFC) plans to conduct twenty Training Workshops for FIs on EE Financing by September 2018 spread across India. These direct training workshops are designed to create awareness amongst the loan officers / risk managers / credit managers towards technical/financial appraisal of EE projects.

### 3. TRAINING WORKSHOPS IN KARNATAKA

BEE in collaboration with the Karnataka Renewable Energy Development Limited (KREDL) and IBA organized Two “Training Workshops for FIs on EE Financing in India” on 22<sup>nd</sup> November and 19<sup>th</sup> December 2017 in Bangalore and Mangalore respectively. IFC extended the technical support to the workshops, as part of IFC’s Eco-Cities program in India, supported by the European Union (EU).

The one-day training workshop provided an overview of the technical and economic characteristics of EE projects, business models, financing needs, and risk management approaches. The workshop was

also a platform for the participants to interact with EE experts/ Energy Service Companies (ESCOs) on areas such as market opportunities, business models, technical and financial appraisal of projects and measurement and verification (M&V). The workshop also included quiz and activity sessions. The following modules were covered as part of the workshop –

- Module 1: Introduction to EE Financing and Market Opportunity
- Module 2: Introduction to ESCO and various business models
- Module 3: Financial Appraisal of EE Projects
- Module 4: Technical Appraisal of EE Projects
- Module 5: Introduction to Measurement and Verification (M&V)

The workshops conducted in Karnataka were attended by 58 participants from 14 different banks, NBFCs and Institutes, represented mostly by credit officers, risk officers, and/or project appraisal officers.

BEE will conduct 15 more workshops in different cities in India over the period of next one year.



## 4. BANGALORE – WORKSHOP PROCEEDINGS



### 4.1. INAUGURAL SESSION

The first workshop in Karnataka was organized in Bangalore on 22nd November 2017.

The workshop was inaugurated by Dr. Ashok Kumar, Director, Bureau of energy efficiency (BEE) in presence of the chief guest for the workshop Mr. S. Krishnan, General Manager, Canara Bank; Mr. Ashutosh Tandon, Financial Sector Specialist (Finance and Markets Global Practice (GP), the World Bank Group (WBG)); and Mr. Mohan Kumar, General Manager, Karnataka Renewable Energy Development Limited (KREDL).



Dr. Ashok Kumar, Director, Bureau of energy efficiency (BEE) welcomed the distinguished guests, speakers and the participants to the training workshop. In his address, he highlighted challenges related to energy security and discussed various government policy initiatives related to EE. He shared that the global temperature rise causing the melting of the glacier by 20-30 meter per year and its impact on our lives and concluded that the EE project is one of the ways to arrest the impact of global warming. Dr. Kumar also stated that in order to expedite EE project implementation, the banks and the EE industry needs to come together and take the nation on track and contribute to the reduction of the GHG emission intensity by 33% from 2005 year

levels.

In the key note address, Mr. Ashutosh Tandon, Financial Sector Specialist, WBG, provided



an overview of the training programs. He pointed out the need for technology upgrade in MSME's and informed that the World Bank Group has allocated about 16% to 20% of total lending for climate financing and are looking forward to increasing the percentage to 28 %. He provided example on the investment sectors like the Green Building Initiatives and discussed about EE financing aspects in IFC Eco Cities project. He pointed out that the one of the huge barrier for EE financing was due to the lack of technical knowledge of the FI's about the EE projects. The basic objective of the workshop is to create awareness for FIs on EE financing, energy security, and wider concept of reduction in GHG emissions. He informed that there are several schemes and funds available, which will help FIs on EE financing. Mr, Ashutosh further shared various initiatives that IFC has taken on building the awareness of EE financing.



Mr. S. Krishnan, General Manager, Canara Bank in his special address highlighted the efforts made by BEE on EE Financing and its achievements. He emphasized that the MSME's are the future of the nation and they need to be given utmost importance. He explained how EE will benefit the SME's nationally and also globally. He pointed out at the achievements made by Canara Bank in this field. He concluded by saying that though there is availability of subsidy, however utilization of the subsidy has been very less and the result can be only seen when the MSME's and the FI's are aware of the facilities and their

advantages.

Mr. Mohan Kumar, General Manager, Karnataka Renewable Energy Development Limited (KREDL) highlighted the importance of energy efficiency and delivered the vote of thanks.



## 4.2. PRELIMINARY QUIZ

Post the Inaugural Session, the participants were provided with a preliminary quiz questionnaire to understand their awareness levels on EE and its financing aspects. This was followed by the technical session.

## 4.3. TECHNICAL SESSION

### Module 1: Introduction to Energy Efficiency Financing & Market Opportunity

By – Dr. Ashok kumar, Director, Bureau of energy efficiency (BEE)



The first technical session was on "Introduction to Energy Efficiency Financing and Market Opportunity presented by Dr. Ashok Kumar, Director, Bureau of energy efficiency (BEE). Dr. Ashok Kumar presented an overview on the importance of Energy Efficiency Financing and how EE is helping to mitigate climate change related issues. He reinstated that the development of the country depends on the energy consumption. Dr. Ashok Kumar briefed the participants about the Paris Climate Agreement and India's commitment under the agreement

and shared about India's Nationally Determined Contribution (NDC) to reduce emissions intensity by 33%-35% by 2030 from 2005 level he further stated that in order to achieve this target, investment is necessary.

He discussed in detail the various policy initiatives such as Partial Risk Guarantee Fund for Energy Efficiency (PRGFEE), Venture Capital Fund for Energy Efficiency (VCFEE) of BEE to promote EE financing. He pointed out that more than INR 1,50,000 Crore of investment potential exists for EE implementation. The session by

Dr. Ashok Kumar was concluded by apprising the participants about Banks perspective on EE projects and also discussing on the barriers for implementing EE project despite the huge market size.

## **Module 2: Introduction to ESCO and various Business Models for Implementation of EE projects**

**By – Mr. Himanshu Jain, Manager, CARE Ratings and Mr. Pratik Hakay, Founder Director, Greetude Energy Pvt. Ltd.**



The second technical session was presented by Mr. Himanshu Jain, Manager, CARE Ratings, on the "Introduction to ESCOs and various Business Models for Implementation of EE Projects". Mr. Jain started the session by explaining the concept and operating principles of ESCO model and how it differentiates itself from the Simple Model. He also discussed in detail about various ESCO models and also mentioned certain specific examples to further deepen the understanding of the participants. He further discussed in-depth on the functioning of ESCO and the various services they provide. Before concluding, Mr. Jain explained the methodology of assessment and how financial institutions need to interpret these assessment grading's.

To help the participants to further understand about the ESCO model, Mr. Pratik Hakay, Founder-Director, Greetude Energy Pvt. Limited presented case studies on each of the four ESCO models. He also shared his valuable insights on handling various ESCO projects in Building and SMEs .



## **Module 3: Technical Appraisal of EE Projects**

**By – Ms. Nisha Jayaram, Counsellor, Confederation of Indian Industry (CII)**



An interactive session on "Technical Appraisal of EE projects" was presented by Ms. Nisha Jayaram, Counsellor, Confederation of Indian Industry (CII). She started the session by asking the participants to identify the EE projects of Buildings and Industries. She further discussed various possible EE interventions in the SME sector and the challenges around each of these interventions. She focused on detailing the technical appraisal process by sharing specific case studies. Ms. Nisha also explained in detail (with help of a case study) the risk assessment parameters and the mitigation measures for each of them.

## **Module 4: Financial Appraisal of EE Projects**

**By – Mr. Sumit Jana, Regional Business Leader, EBB, Yes Bank Ltd.**

In this session, Mr. Sumit Jana, Regional Leader, EBB, Yes Bank Ltd., presented the general framework for project appraisal and explained each element in detailed manner. He discussed in detail the key aspects in financial appraisal like financial parameters, project costs, financial structure, ESPC etc., of EE projects and presented a relevant case study to help participants understand the evaluation in depth.





Mr. Sumit highlighted the different types of loans (technology based and project based) available for EE projects. He further discussed in detail on the various measures of loan security by providing examples and challenges of the projects he had handled in the past. He also discussed on various risk parameters and the mitigation measures associated with EE projects before concluding the session.

#### 4.4. ACTIVITY SESSION



Post the completion of technical and financial appraisal session, an activity session was conducted. The participants were divided into teams and were provided with different EE case studies, in order to understand, analyze and appraise the projects both on technical and financial aspects and select one project for financing. The participants actively participated in the session and one member of each team then presented to the audience on the selected project and provided reasons for selection.

#### TECHNICAL SESSION (CONTD)

##### Module 5: Introduction to Measurement & Verification (M&V)

By – Mr. Srinidhi S Rao, Frost and Sullivan

The last session was on "Introduction to Measurement & Verification" and was presented by Mr. Srinidhi S Rao, Frost and Sullivan. He focused on M&V of EE projects and related methodologies and protocols. Mr. Srinidhi explained the key aspects to be considered in M&V like who conducts the M&V, how much does it cost, various M&V methodologies and the protocols available. The participants were informed that either the Project Host, ESCO or a third party could conduct the M&V and the cost depends on EE technologies, measures to be implemented and the approach and methodology utilized. He highlighted that the M&V costs are generally between 5 to 10 percent of the project investment and there is a trade-off between accuracy and cost of the M&V. Simple approaches are preferred to reduce costs and minimize the potential for disputes in EE projects, particularly in the ESCO model. He also stressed on the need for engaging independent third party verification agency and also presented the international protocols for M&V. The session was concluded by Mr. Rao by presenting an M&V case study involving a lighting project, where he explained how M&V helps in confirming and validating the anticipated and actual savings from an EE project.



#### 4.5. FINAL QUIZ

All the participants actively participated in the final quiz round. The quiz questionnaires covered the learning on overall session and modules presented during the workshop. The participants performed well on the quiz. The quiz results were announced at the end of the workshop and the top performers were honored with prizes.

The first, second and the third prizes were won by Ms. Nisha Raturi (Union Bank of India), Ms. Thara K (South Indian Bank) and Mr. Cyril Zachariah Mosses (Union Bank of India).



#### 4.6. CONCLUDING SESSION

##### Distribution of Certificates



The workshop concluded with Certificate distribution to all the participants. The participants were also informed about the next workshop scheduled on December 19th, 2017 in Mangalore and where requested to help in connecting with the relevant personnel.

##### Vote of Thanks

Dr. Ashok Kumar, Director, Bureau of Energy Efficiency (BEE) thanked all the participants for sparing their time to be part of the workshop, and speakers for taking the time to share their experiences with the trainees and hoped that these initiatives will

build the capacity of banks/NBFCs to provide loans to EE projects and increase EE financing manifold.

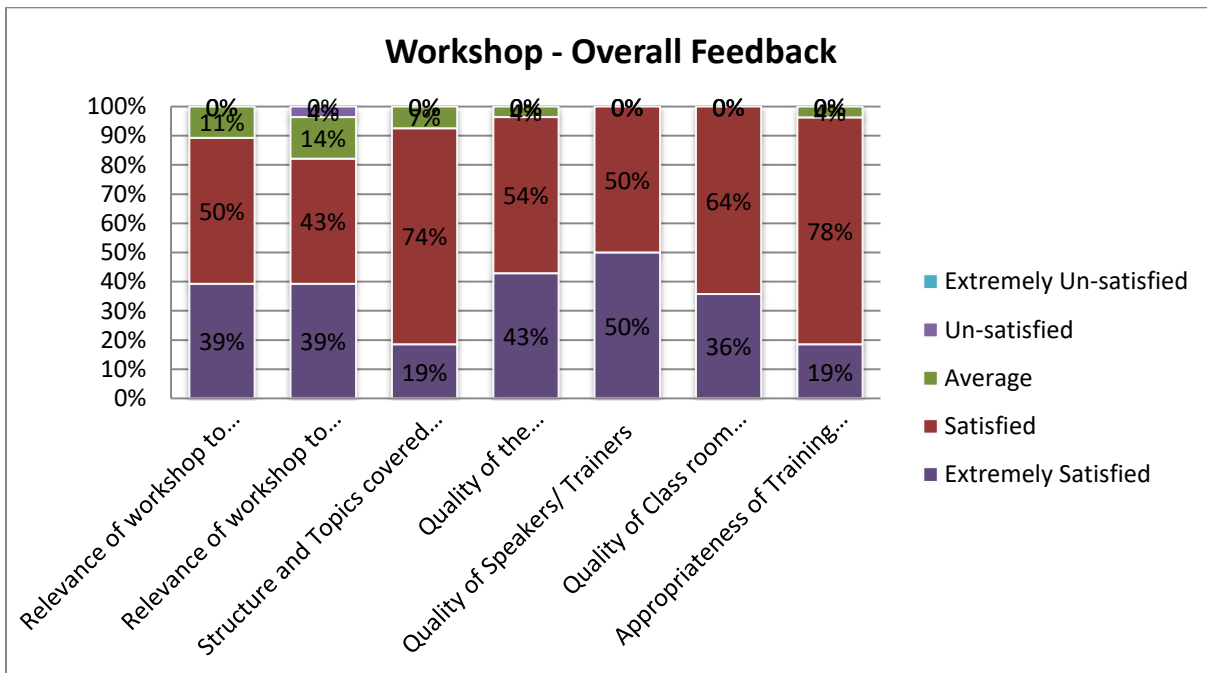
## ANNEX A – BANGALORE WORKSHOP – FEEDBACK EVALUATION

The workshop in Bangalore was attended by 32 participants from 9 different banks/NBFCs, mostly represented by credit officers, risk officers, and/or project appraisal officers.

The summary of the overall feedback of the workshop in Bangalore provided by the participants is given below:

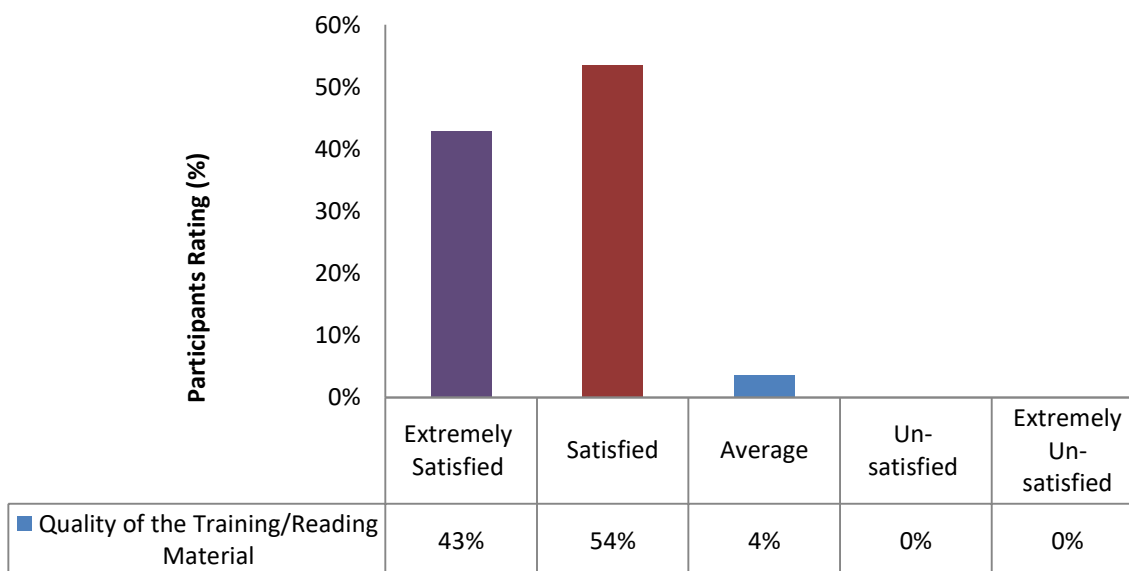
- Almost 100% of the participants rated the program high<sup>1</sup> on “Quality of training and reading materials”
- Almost 93% of the participants rated the program high on “Structure of topics covered in the workshop”
- Almost 100% of the participants rated the program high on “Quality of Speakers/Trainers”
- Almost 97% of the participants rated the program high on “Appropriateness of training material”
- Almost 100% of the participants rated the program high on “Quality of classroom interaction”
- Almost 89% of the participants rated the program high on “Relevance of workshop to the organization”
- Almost 82% of the participants rated the program high on “Relevance of workshop to their work within the organization”

A summary chart of the above parameters are presented below –

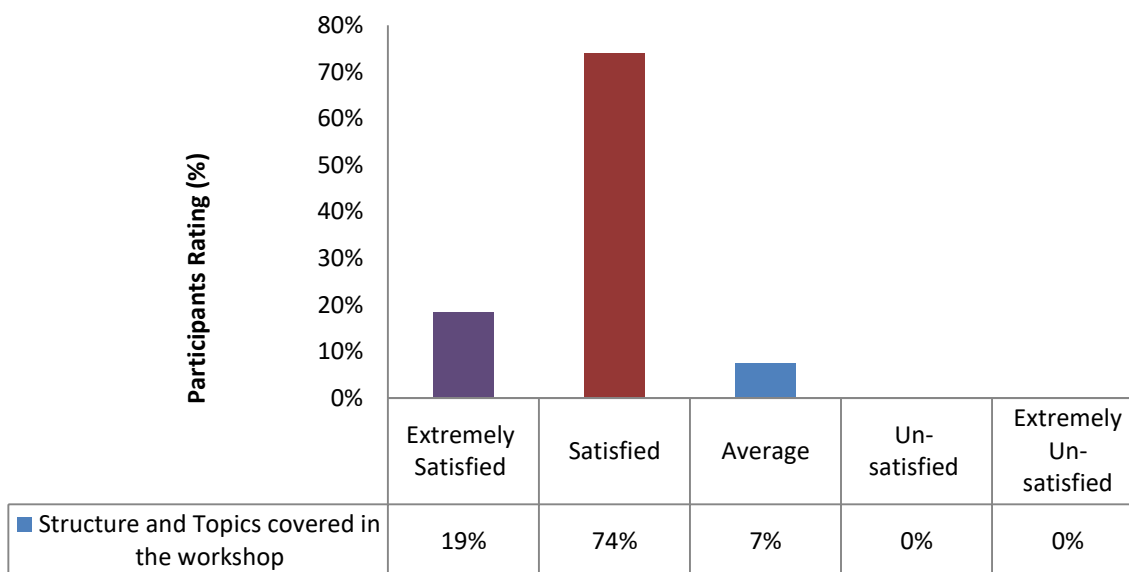


<sup>1</sup> Either “extremely satisfied” or “satisfied”

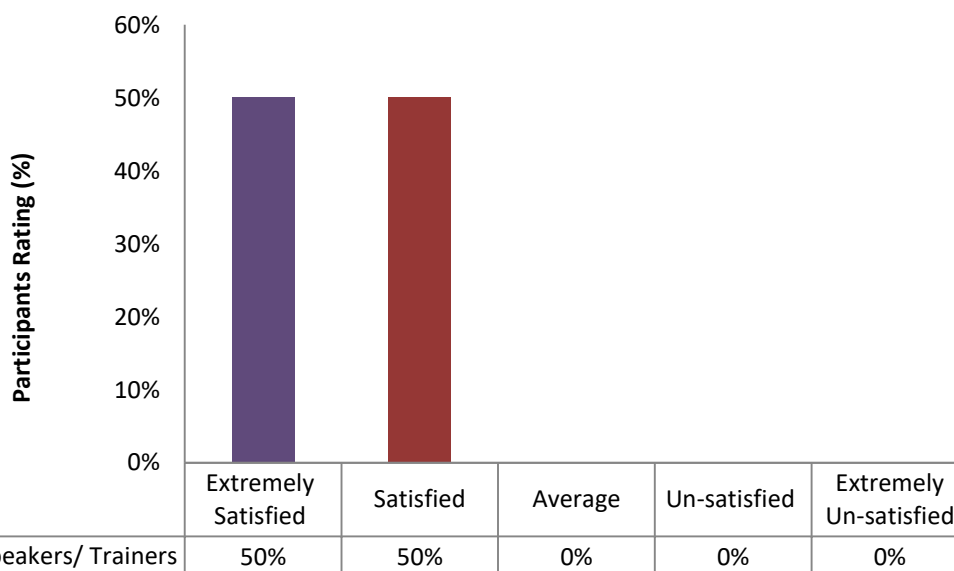
## 1. Quality of the Training/Reading Material



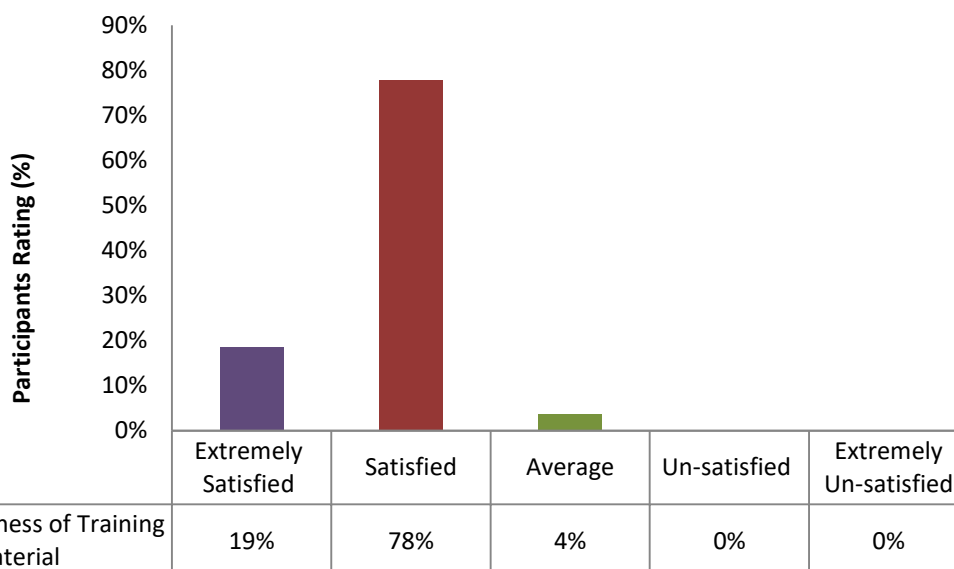
## 2. Structure of topics covered in the workshop



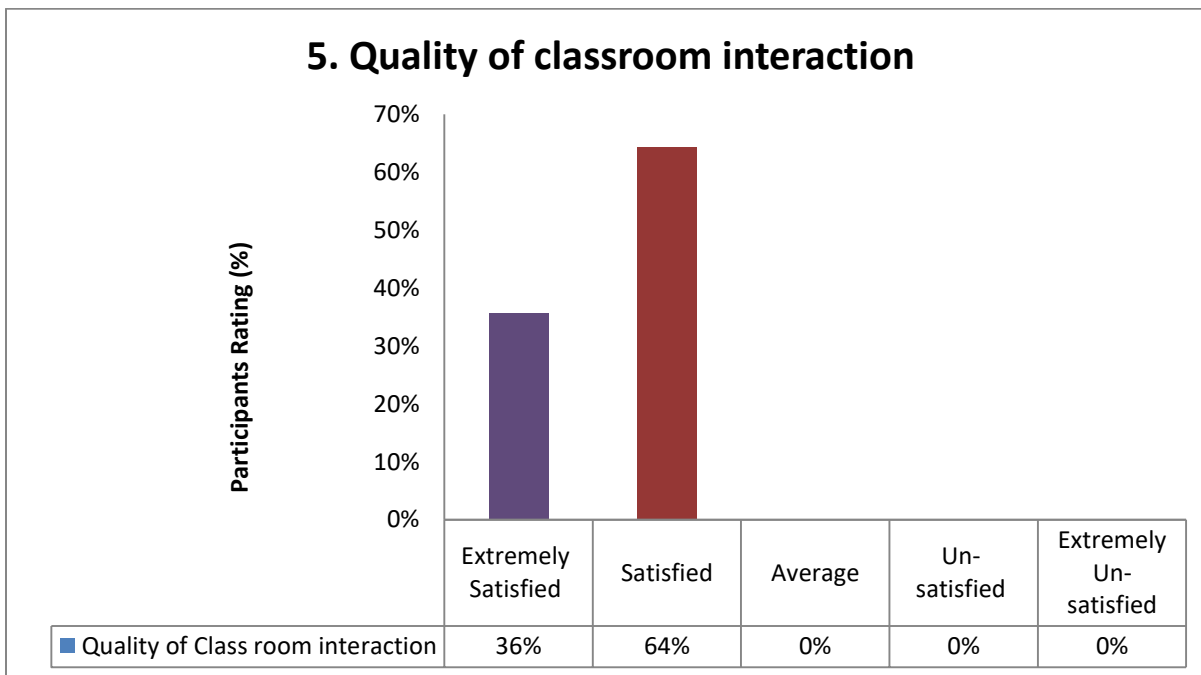
### 3. Quality of Speakers / Trainers



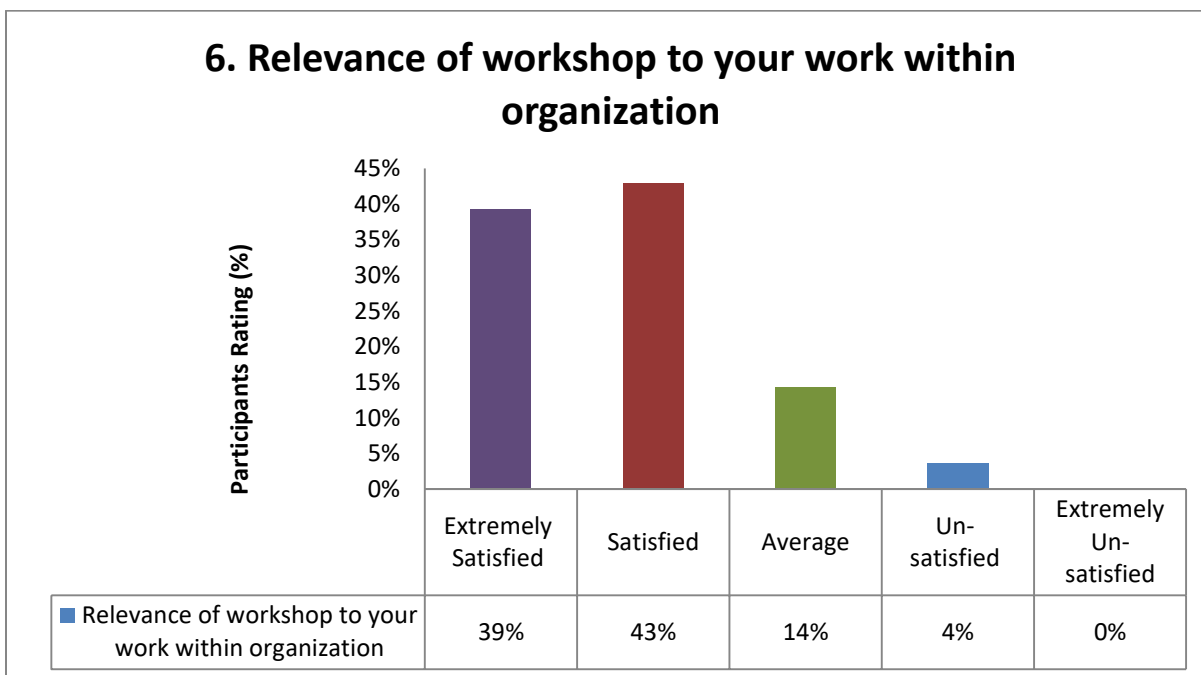
### 4. Appropriateness of training material

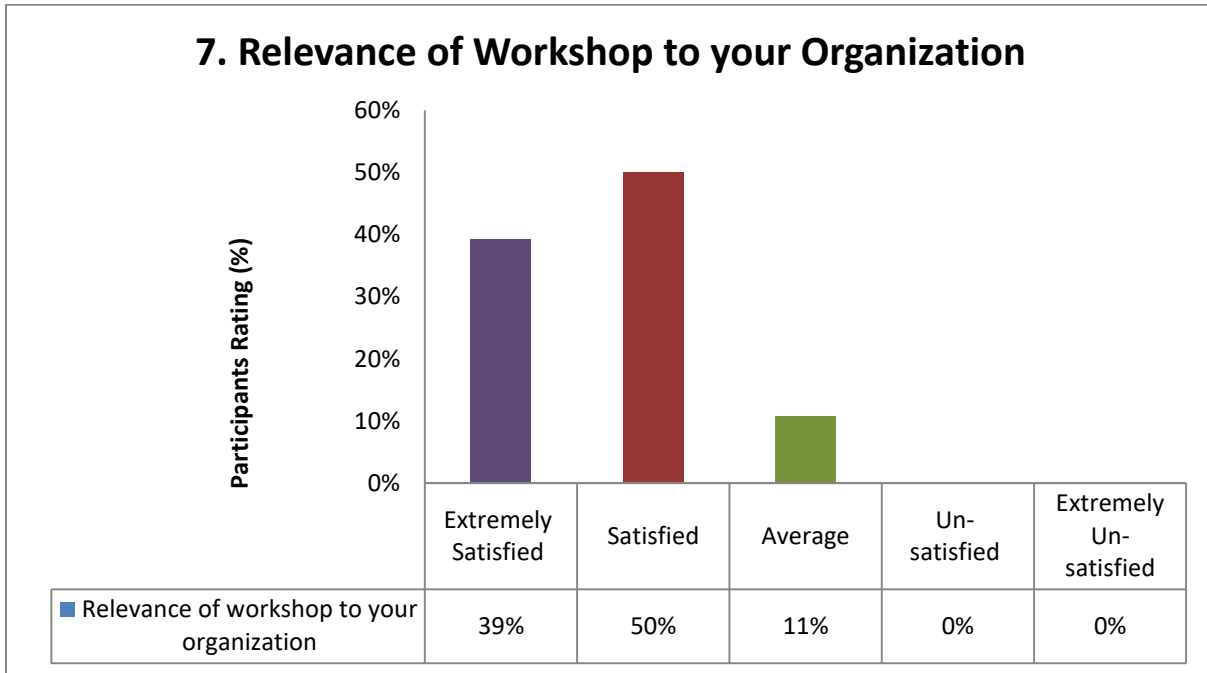


### 5. Quality of classroom interaction



### 6. Relevance of workshop to your work within organization



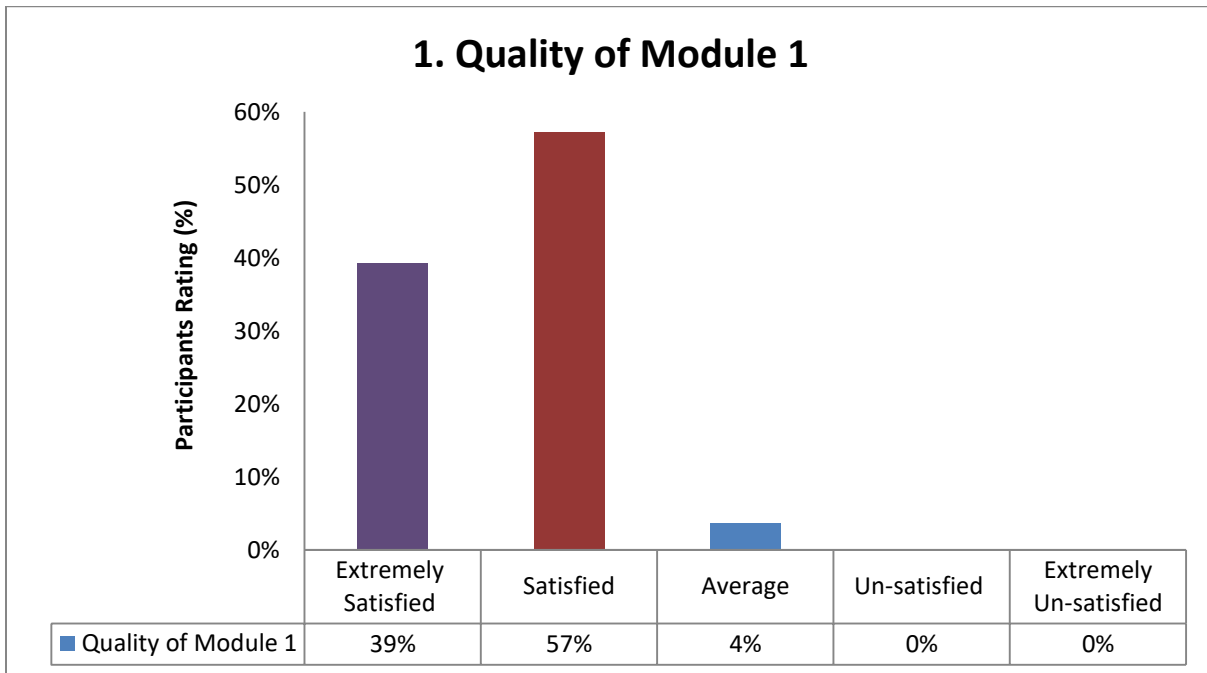
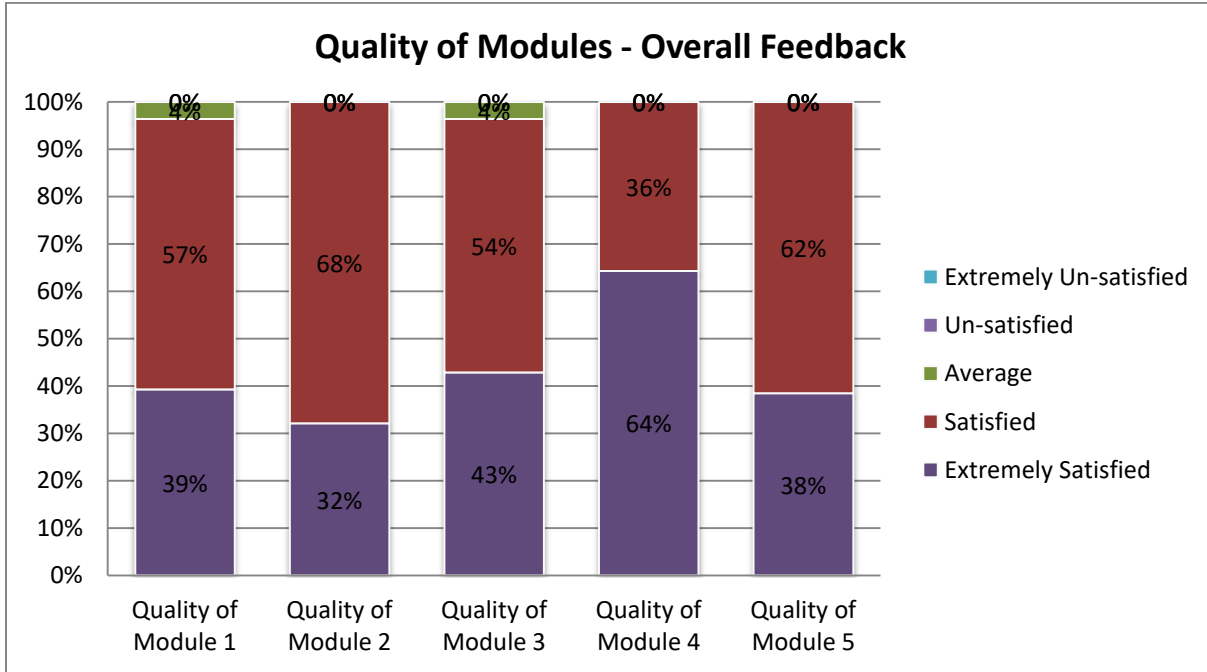


The workshop was imparted through 5 module sessions, covering –

1. Energy Efficiency Financing – Market Opportunity
2. Introduction to ESCO and Business Models
3. Technical Appraisal of Projects
4. Financial Appraisal of Projects and
5. Introduction to Measurement & Verification

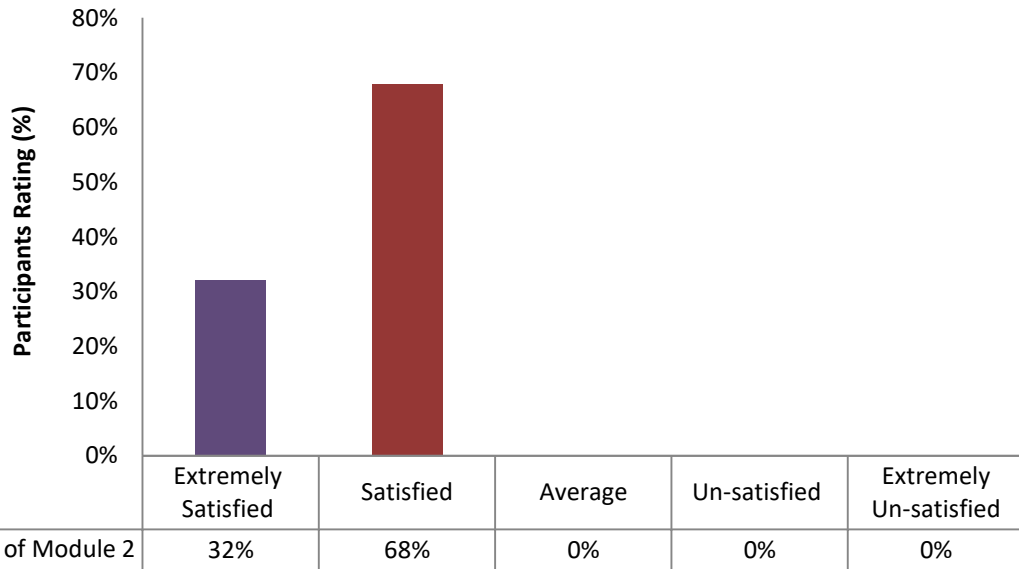
Apart from the 5 sessions, the participants were also involved and presented with case studies, activity session and quiz.

The summary chart of the feedback provided by the participants on all the training sessions delivered by the trainers / speakers is given below:

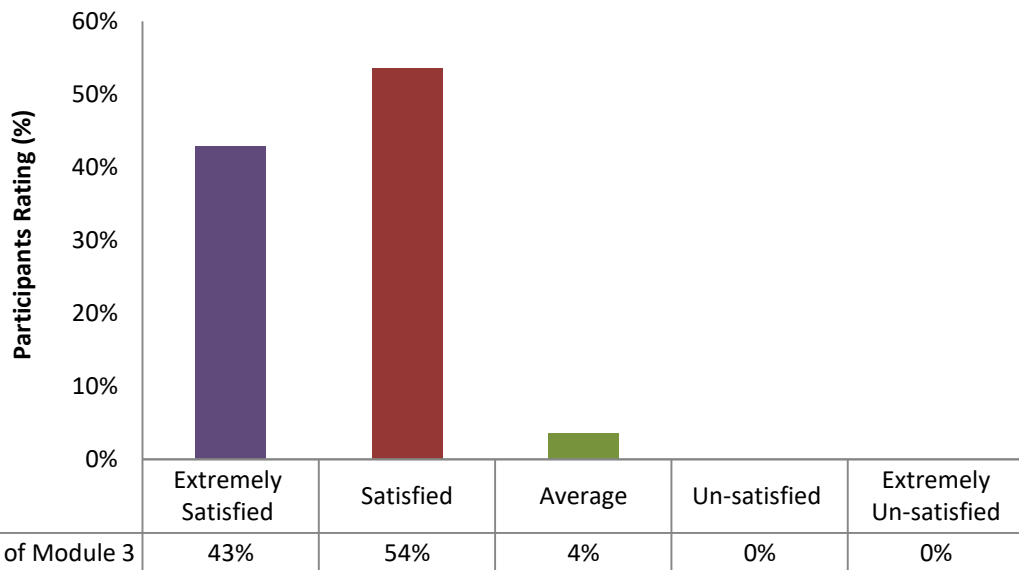


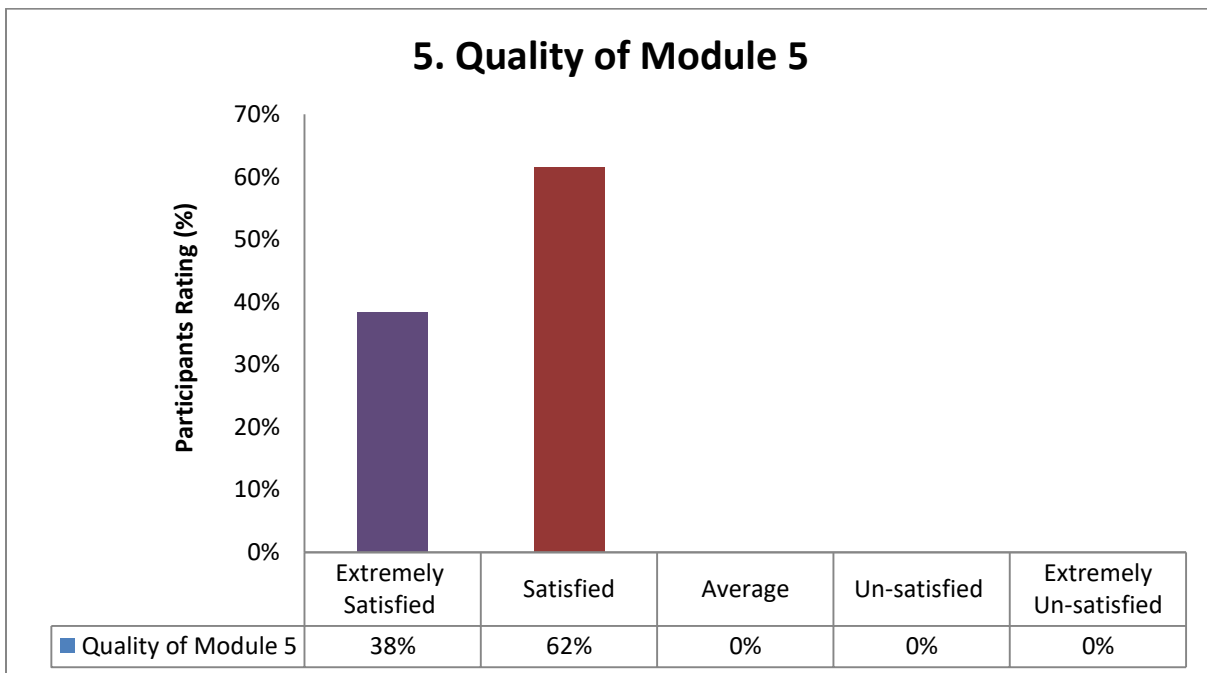
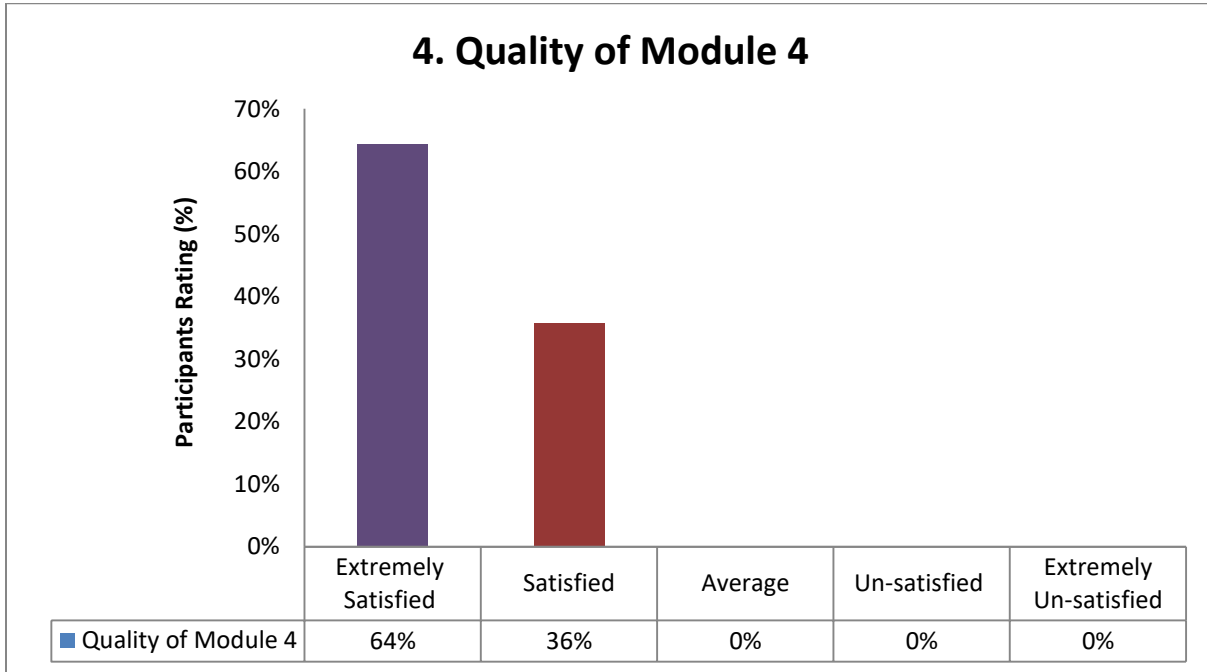


## 2. Quality of Module 2



## 3. Quality of Module 3







### WHAT THE PARTICIPANTS LIKED THE MOST ABOUT THE WORKSHOP

- The “Financial Appraisal” – was regarded as the most interactive and interesting based on the comments received from the participants. They even appreciated the inaugural talk by BEE.
- They were appreciative of the Technical Evaluation session by CII.

### WHAT THE PARTICIPANTS SUGGESTED FOR FURTHER IMPROVEMENT IN THE WORKSHOP

- The participants suggested having an awareness session for the MSMEs as well.
- Some of them suggested having it for more than a day and also having live case studies of success and failures for discussion.



## ANNEX B – BANGALORE WORKSHOP – AGENDA

### **“Training Workshop for Financial Institutions on Energy Efficiency financing”**

**Date & Venue: November 22<sup>nd</sup>, 2017 – Hotel Radisson Blu Atria, Palace Road, Bangalore**

Time	Topic	Speaker
09:30 AM - 10:00 AM	Registration	
<b>WELCOME SESSION</b>		
10:00 AM - 10:05 AM	Welcome Remarks	Mr. Ashok Kumar, Director, Bureau of Energy Efficiency (BEE)
10:05 AM - 10:10 AM	Keynote Address	Mr. Ashutosh Tandon, Financial Sector Specialist, World Bank Group (WBG)
10:10 AM – 10:20 AM	Special Address	Mr. S. Krishnan, General Manager, Canara Bank
10:20 AM – 10:30 AM	Vote of Thanks	Mr. Mohan Kumar, General Manager, Karnataka Renewable Energy Development Limited (KREDL)
10:30 AM - 10:45 AM	<b>Group Photograph followed by Tea</b>	
10:45 AM - 11:00 AM	Preliminary assessment of trainees on Energy Efficiency	
<b>TECHNICAL SESSION</b>		
11:00 AM - 11:30 AM	Module 1: Introduction to Energy Efficiency (EE) and Market Opportunity	Mr. Ashok Kumar, Director, Bureau of Energy Efficiency (BEE)
11:30 AM - 12:00 PM	Module 2: Introduction to ESCO and various business models for implementation of EE projects	Mr. Himanshu Jain, Manager, CARE Ratings
12:00 PM - 12:30 PM	EE Case Studies – ESCO experience	Mr. Pratik Hakay, Founder-Director, Greetude Energy Pvt. Ltd.
12:30 PM - 01:30 PM	<b>Lunch</b>	
01:30 PM - 02:15 PM	Module 3: Financial Appraisal of EE project	Mr. Sumit Jana, RBL, EBB, Yes Bank Ltd.
02:15 PM - 03:00 PM	Module 4 : Technical Appraisal of EE project	Ms. Nisha Jayaram, Counsellor, CII
03:00 PM - 03:30 PM	Activity session for the participants	
03:30 PM - 04:00 PM	Module 5: Introduction to M&V	Mr. Srinidhi S. Rao, Frost & Sullivan
04:00 PM - 04:30 PM	Quiz	
04:30 PM - 04:45 PM	<b>High Tea</b>	
04:45 PM – 04:55 PM	Distribution of Certificates	
04:55 PM – 05:00 PM	Vote of Thanks	Mr. Ashok Kumar, Director, Bureau of Energy Efficiency (BEE)

### ANNEX C – BANGALORE WORKSHOP – LIST OF PARTICIPANTS

Sl. No	Name	Designation	Organization	Email ID	Mobile No
<b>Venue: Bangalore</b>					
01	ICICI Bank Ltd.	Arjun S	Manager	s.arjn@icicibank.com	7022037182
02	Canara Bank	Abhishek kumar	Manager	abhishekkumar9@canarabank.com	8002799891
03	Yes Bank Ltd	Chandan Panda	SM	<a href="mailto:chandan.panda@yesbank.co.in">chandan.panda@yesbank.co.in</a>	9907132392
04	Union Bank Of India	Cyril Zachariah Mossess			
05	Canara Bank	D Madhavraj	AGM	<a href="mailto:madhavarajd@canarabank.com">madhavarajd@canarabank.com</a>	9731670460
06	Yes Bank Ltd	Jagadish Babu Sajjan	CSL	<a href="mailto:jagadish.sajjan@yesbank.co.in">jagadish.sajjan@yesbank.co.in</a>	8904915262
07	State Bank of India	Jaithirth Srinivas Advani			9972363912
08	Canara Bank	K Radha Krishna Murthy	Divisional Manager	radhakrishnak@canarabank.com	7893445980
09	Canara Bank	Mahalinga M	Chief Manager	mmahalinga@canarabank.com	9886433494
10	Canara Bank	Manish Bharati	Manager	manishbharti@canarabank.com	9538148291
11	Corporation Bank	Narayan Jee Jha	Assistant Manager	Cb8803mkt@corpbank.co.in	7909013991
12	South Indian Bank	Prabhat Vedula	Assistant Manager	prabhatvedula@sib.co.in	9830212489
13	Yes Bank Ltd	Prashanth N Poojary	BBL	<a href="mailto:prashanth.npoojary@yesbank.in">prashanth.npoojary@yesbank.in</a>	9916101083
14	Yes Bank Ltd	Prem P Prasad	ADM	<a href="mailto:premp.prasad@yesbank.in">premp.prasad@yesbank.in</a>	9546677452
15	South Indian Bank	Rajasree Sarkar	Assistant Manager	rajasree@sib.co.in	9674761881
16	Yes Bank Ltd	Shreyas Amodkar	Assistant Manager	<a href="mailto:Shreyas.amodkar@yesbank.co.in">Shreyas.amodkar@yesbank.co.in</a>	9769904977
17	Canara Bank	Suresh S Shahpur	Assistant General Manager	sureshsshahapur@canarabank.com	9449629365
18	Canara Bank	Turaka Ramesh	Chief Manager	tramesh@canarabank.com, cb2454@canarabank.com	8451848301
19	Canara Bank	V S Mohan	Senior Manager	mohanvs@canarabank.com	9663278251



Sl. No	Name	Designation	Organization	Email ID	Mobile No
<b>Venue: Bangalore</b>					
20	Canara Bank	V. Mohan	Divisional Manager	vmohan@canarabank.com	8762179552
21	ICICI Bank Ltd.	Vinod V	Chief Manager	vinod.v@icicibank.com	8008402822
22	Bank of Baroda	VSSHN Srinivas	Sr. Branch Manager	ba karap <tc.karap@bankofbaroda.com>	080 26630891
23	Yes Bank Ltd	VVN Bhaskar Kishore Manda	Manager	<a href="mailto:vvnbhasker.kishoremada@yesbank.in">vvnbhasker.kishoremada@yesbank.in</a>	7204156906
24	Corporation Bank	Ramya C K	Manager- Marketing	Cb8803mkt@corpbank.co.in	9008440632
25	South Indian Bank	Angel Veena Chirayath	Assistant Manager	angelveena@sib.co.in	9243103757
26	Andhra Bank	C. P. Sreeja	Senior Manager-Financial Analyst	bm2731@andhrabank.co.in	8147576889
27	State Bank of India	Kamala Malagali		<a href="mailto:kamala.s.malagi@sbi.co.in">kamala.s.malagi@sbi.co.in</a>	9686016700
28	Union Bank Of India	Nisha Raturi	Chief Manager	<a href="mailto:nisharaturi@gmail.com">nisharaturi@gmail.com</a>	8447265201
29	South Indian Bank	Rini D'Souza	Assistant Manager	rinidsouza@sib.co.in	7259772125
30	Canara Bank	T M Sowbhagyam	Chief Manager	sowbhagyamtn@canarabank.com	9449009069
31	Andhra Bank	Tanushree Saxena	Manager	bm0392@andhrabank.co.in	080 22959692
32	South Indian Bank	Thara K	Assistant Manager	thara@sib.co.in	7760735555

## 5. MANGALORE – WORKSHOP PROCEEDINGS



### 5.1. INAUGURAL SESSION

The second workshop in Karnataka was organized in Mangalore on 19<sup>th</sup> December 2017.



(KREDL).

The workshop was inaugurated by the chief guest for the workshop, Shri Atul Gautam, Advisor - IBA and CGM, Oriental Bank Of Commerce in presence of Mr. Ashutosh Tandon, Financial Sector Specialist (Finance and Markets Global Practice (GP), the World Bank Group (WBG) along with Ms. Nisha Jayaram – Counsellor - CII, Mr. Pratik Hakay - Founder CEO - Greeetude Energy and Mr. Dinesh - Karnataka Renewable Energy Development Limited

Mr. Gowtham Sivabalan, Associate Director, Frost & Sullivan welcomed the Chief Guest, distinguished speakers and the participants from various banks to the training workshop. In his address, Mr. Gowtham reinstated the need for financial institutions to play an active role in the energy efficiency efforts in the MSME sector as they collectively are the largest potential for energy saving in the country. He also emphasized on bridging the gap between the MSME that need financial support, the awareness and risks for financial institutions and the need for training the financial institutions for shared benefits.





The Chief Guest, Shri Atul Gautam, in his special address highlighted the endeavors of BEE on EE Financing and its achievements made over past decades. He stressed on the need for more of such (trainings) initiatives to realize the EE vision at a large scale. He shared his experiences and the need for developing a 3<sup>rd</sup> level of learning, by taking the learnings of the workshop to the other colleagues in the respective banks to make an impact. He noted that EE projects are still being implemented in pockets while the western world was much ahead. Quoting the evolution of 'Phone banking' he added that EE is the future and FI should proactively adopt such funding practices. He urged the participants to understand and interact in each session so that, the financial fraternity is benefited by such programs".

In the key note address, Mr. Ashutosh Tandon, Financial Sector Specialist, WBG, provided the background and an overview of the training programs. He shared insights on various initiatives of IFC on EE financing and explained the different activities carried out with other collaborations. He also mentioned that there have been various initiatives taken by IFC such as bringing in the first green bond with Yes Bank and in last 2-3 years the prime focus has been on green buildings and green financing initiatives. He pointed out that one of the major challenges for energy efficiency financing was due to the lack of technical knowledge of the FI's about the importance of EE projects. Further he added that "The basic objective of the workshop is to create awareness for FIs on EE financing, energy security, and wider concept of reduction in GHG emissions". He informed that there are several schemes and funds available, which will help FIs on EE financing.



Mr. Dinesh Kumar, General Manager, Karnataka Renewable Energy Development Limited (KREDL) shared some of the details of the various projects that were undertaken by the government of Karnataka and made a mention of some of the proud achievements in EE projects. He highlighted the importance of Financial Institutions in playing a key role in the near future. He delivered the vote of thanks by acknowledging the speakers and the delegates of the program.

## 5.2. PRELIMINARY QUIZ

Post the Inaugural Session, the participants were provided with a preliminary quiz questionnaire to understand their awareness levels on EE and its financing aspects. This was followed by the technical session.



### 5.3. TECHNICAL SESSION

#### **Module 1: Introduction to Energy Efficiency Financing & Market Opportunity**

**By – Mr. Ashutosh Tandon, Financial Sector Specialist (Finance and Markets Global Practice (GP), WBG)**



The first technical session was on "Introduction to Energy Efficiency Financing and Market Opportunity presented by Mr. Ashutosh Tandon, Financial Sector Specialist (Finance and Markets Global Practice (GP), WBG. Mr. Ashutosh presented an overview on the importance of Energy Efficiency Financing, addressed the climate change and its impact on the world, and emphasized that the development of the country depends on the energy consumption. He further briefed the participants about the Paris Climate Agreement and India's commitment under the agreement and shared about India's Nationally Determined Contribution (NDC) to reduce emissions intensity. He further explained the scope and importance of EE projects across as well as within different sectors. He further discussed the various policies BEE has deployed to help the cause. He concluded the session by emphasizing on the need for building the awareness, both on benefits and challenges of these initiatives within the financial sector.

#### **Module 2: Introduction to ESCO and various Business Models for Implementation of EE projects**

**By – Mr. Gowtham Sivabalan, Associate Director, Frost & Sullivan and Mr. Pratik Hakay, Founder Director, Greetude Energy Pvt. Ltd.**

The second technical session was presented by Mr. Gowtham Sivabalan, Associate Director, Frost & Sullivan, on the "Introduction to ESCOs and various Business Models for Implementation of EE Projects". Mr. Gowtham shared insights on the role of an ESCO in the EE Financing process and the various advantages of having them as a part of the ecosystem. Besides sharing the various operating models, he also emphasized on the benefits of



and points to be considered while adopting each model. He shared his experience in the manufacturing domain with relevant examples of opportunities where ESCOs have been successful in identifying and implementing EE projects in Industries. He also shared about various barriers associated with ESCO financing. He reiterated the importance of considering the ESCO grading model and how it can be a reference for FIs in finalizing project financing.



To help the participants to further understand the ESCO features better, Mr. Pratik Hakay, Founder-Director, Greetude Energy Pvt. Limited presented case studies of EE projects of different type of industries and explained its opportunities and challenges. He also explained the process of the ESCOs, right from project identification till the accounting the actual benefits of EE projects. Mr. Pratik concluded the session by providing some of the valuable insights on his personal experience (of handling EE projects),

### Module 3: Technical Appraisal of EE Projects

By – Ms. Nisha Jayaram, Counsellor, Confederation of Indian Industry (CII)

An interactive session on "Technical Appraisal of EE projects" was presented by Ms. Nisha Jayaram, Counsellor, Confederation of Indian Industry (CII). She shared the various technical aspects of EE project appraisal. Ms. Nisha focused on technical project appraisal, key considerations in EE projects, list of EE technologies, risk assessment and risk mitigation of EE projects. She further explained how to identify technical risk and uncertainties of funding EE projects. She detailed out the risk and mitigation measure in each of the development, implementation and operation phase. With the help of a case study, Ms. Nisha interacted with participants on the identifying and mitigating the various risk parameters before concluding the session.



### Module 4: Financial Appraisal of EE Projects

By – Mr. Sharachandra Bhise, SVP, Cluster Business, EBB, Yes Bank Limited.



In this session, Mr. Sharachandra Bhise, SVP, Cluster Business, EBB, Yes Bank Limited, presented the general framework for project appraisal and explained them individually. He actively engaged the audience and provoked typical questions that bankers would have and shared insights on the typical challenges, bankers are faced when it comes to a financial appraisal of non-collateral based financing like the EE projects.

Mr. Bhise highlighted that the FIs should carry out the comprehensive review of various agreements such as ESPC. He discussed in detail on the various considerations for loan security and the steps to be taken in evaluating the financial risk of such projects. He also explained the technology and the project based loan and its operating mechanism. He concluded the session by giving a brief distinguishing between PRGFEE and PRSF.

### 5.4. ACTIVITY SESSION

Post the completion of technical and financial appraisal session, an activity session was conducted. The participants were divided into teams based on the tables in which they were seated and were provided with different EE case studies. The objective was to look at potential EE projects and their details to be able to identify the right project to finance. The emphasis was given to understanding the reasoning behind the choice of projects. Each team was represented by one member who then presented to the entire audience regarding their choice and parameters considered. It was in overall an interactive session with meaningful discussion and doubts being raised. These were moderated and addressed by Mr. Sharadchandra Bhise.



## TECHNICAL SESSION (CONTD)

### Module 5: Introduction to Measurement & Verification (M&V)

By – Ms. Nisha Jayaram, Counselor, Confederation of Indian Industry (CII)



The last session was on "Introduction to Measurement & Verification" and was presented by Ms. Nisha Jayaram. She focused on M&V of EE projects and related methodologies and characteristics. Ms. Nisha explained the key elements to be considered in M&V measurement process, such as, billing history, software being used and documentation process being practiced. She further explained the importance of M&V by providing some examples. Ms. Nisha concluded the session by emphasizing on the need for engaging independent third party verification agency to validate the process before presenting the necessary elements of M&V information documents.

### 5.5. FINAL QUIZ



All the participants actively participated in the final quiz round. The quiz questionnaires covered the learning on overall session and modules presented during the workshop. The participants performed well on the quiz. The quiz results were announced at the end of the workshop and the top performers were honored with prizes.

The first, second and the third prizes were won by Mr. Joshi Sudhindra Ganapati (Karnataka Bank), Mr. Ranjeet Kumar (SBI), Mr. AR Kiran (Central Bank of India).

## 5.6. CONCLUDING SESSION

### Distribution of Certificates



The workshop concluded with Certificate distribution to all the participants.

### Vote of Thanks

Mr. Gowtham Sivabalan, Associate Director, Frost & Sullivan thanked all the participants for sparing their time to be part of the workshop, and speakers for taking the time to share their experiences with the trainees and hoped that these initiatives will build the capacity of banks/NBFCs to provide loans to EE projects.

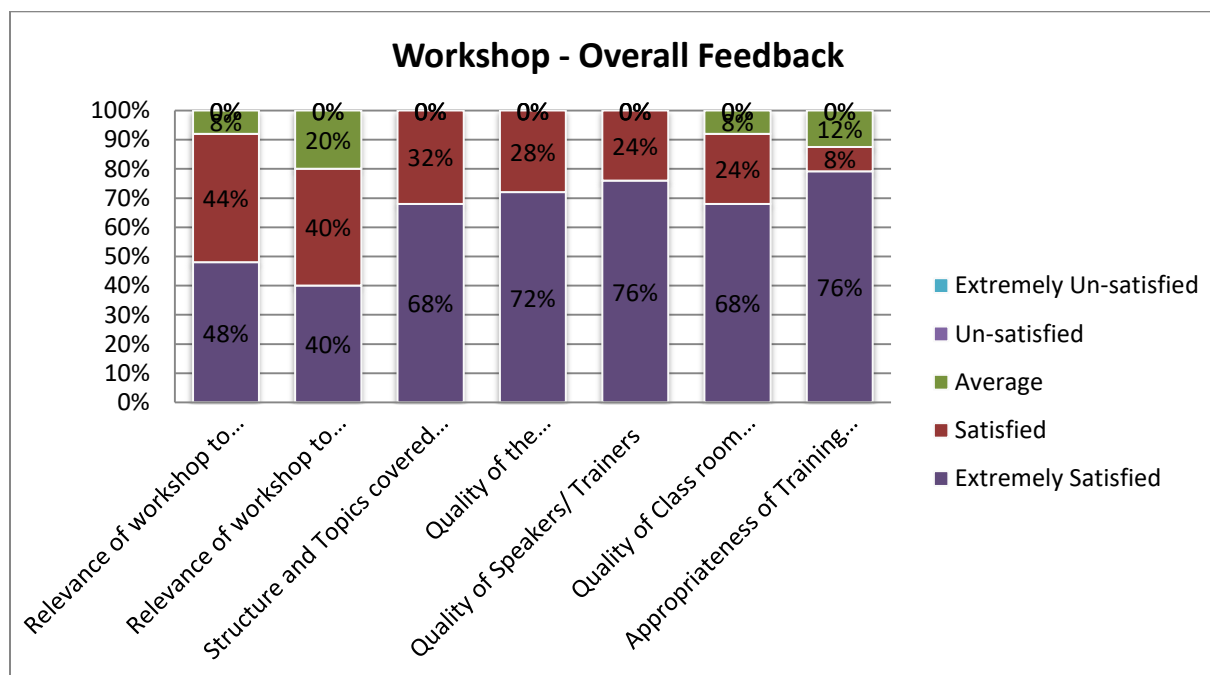
## ANNEX A – MANGALORE WORKSHOP – FEEDBACK EVALUATION

The workshop in Mangalore was attended by 26 participants from 11 different banks/NBFCs, mostly represented by credit officers, risk officers, and/or project appraisal officers.

The summary of the overall feedback of the workshop in Bangalore provided by the participants is given below:

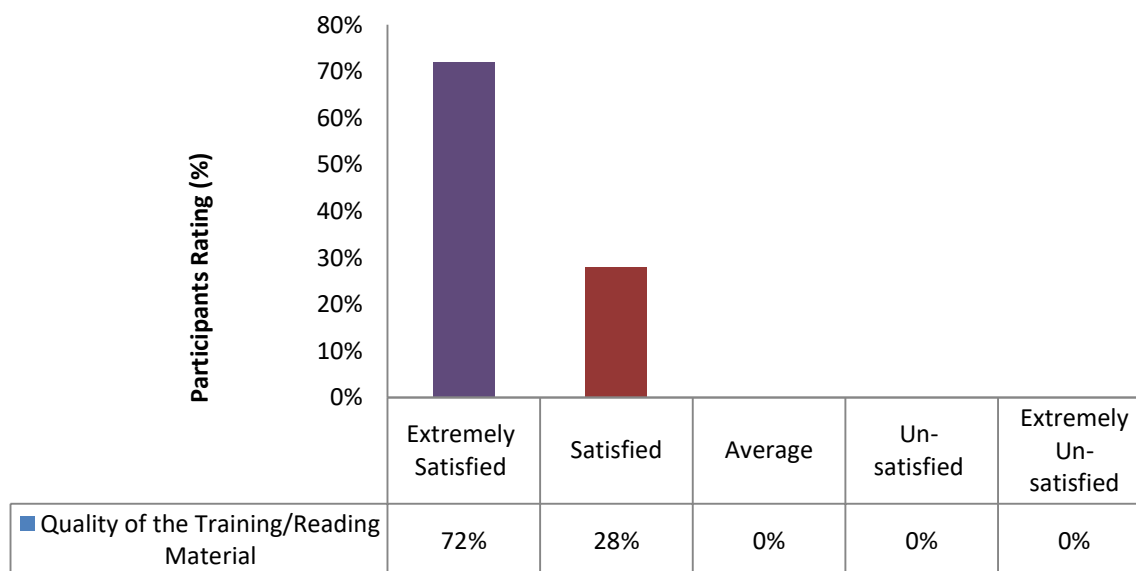
- Almost 100% of the participants rated the program high<sup>2</sup> on “Quality of training and reading materials”
- Almost 100% of the participants rated the program high on “Structure of topics covered in the workshop”
- Almost 100% of the participants rated the program high on “Quality of Speakers/Trainers”
- Almost 84% of the participants rated the program high on “Appropriateness of training material”
- Almost 92% of the participants rated the program high on “Quality of classroom interaction”
- Almost 92% of the participants rated the program high on “Relevance of workshop to the organization”
- Almost 80% of the participants rated the program high on “Relevance of workshop to their work within the organization”

A summary chart of the above parameters are presented below –

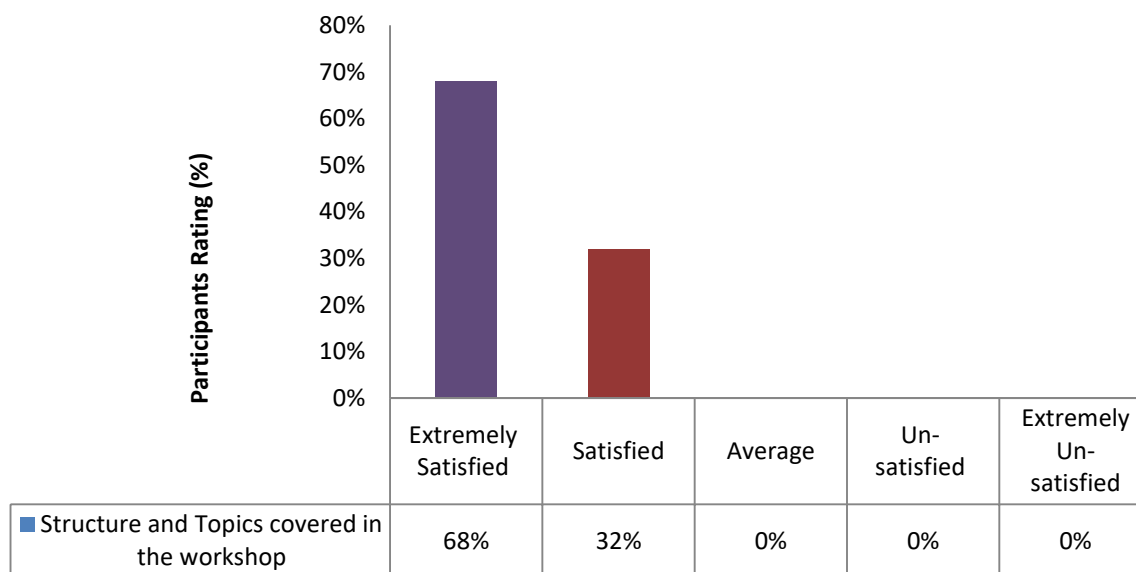


<sup>2</sup> Either “extremely satisfied” or “satisfied”

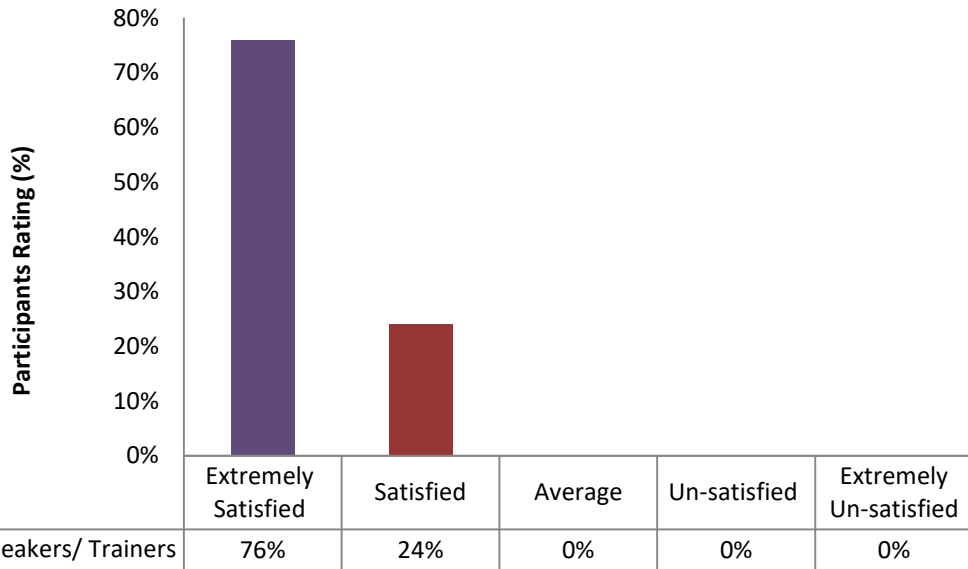
## 1. Quality of the Training/Reading Material



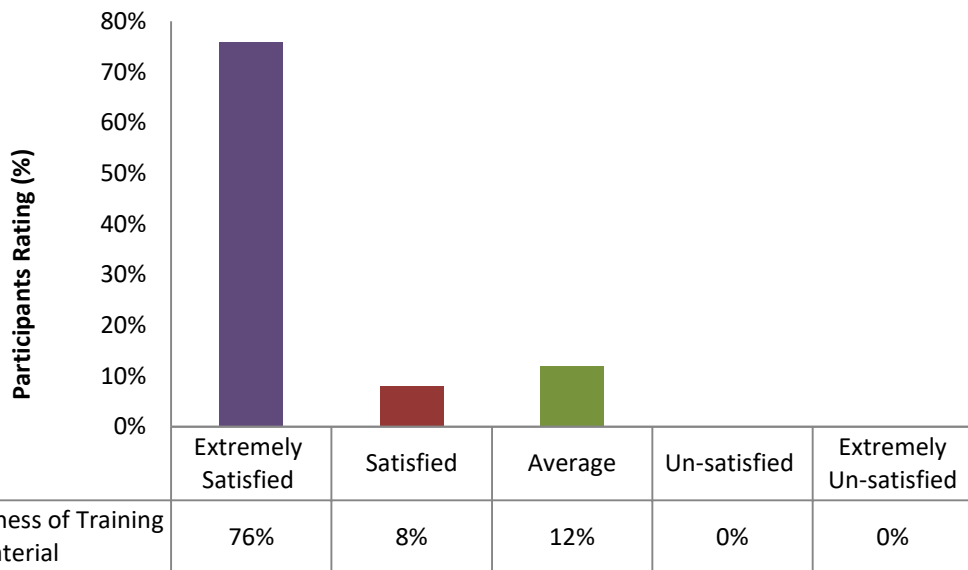
## 2. Structure of topics covered in the workshop



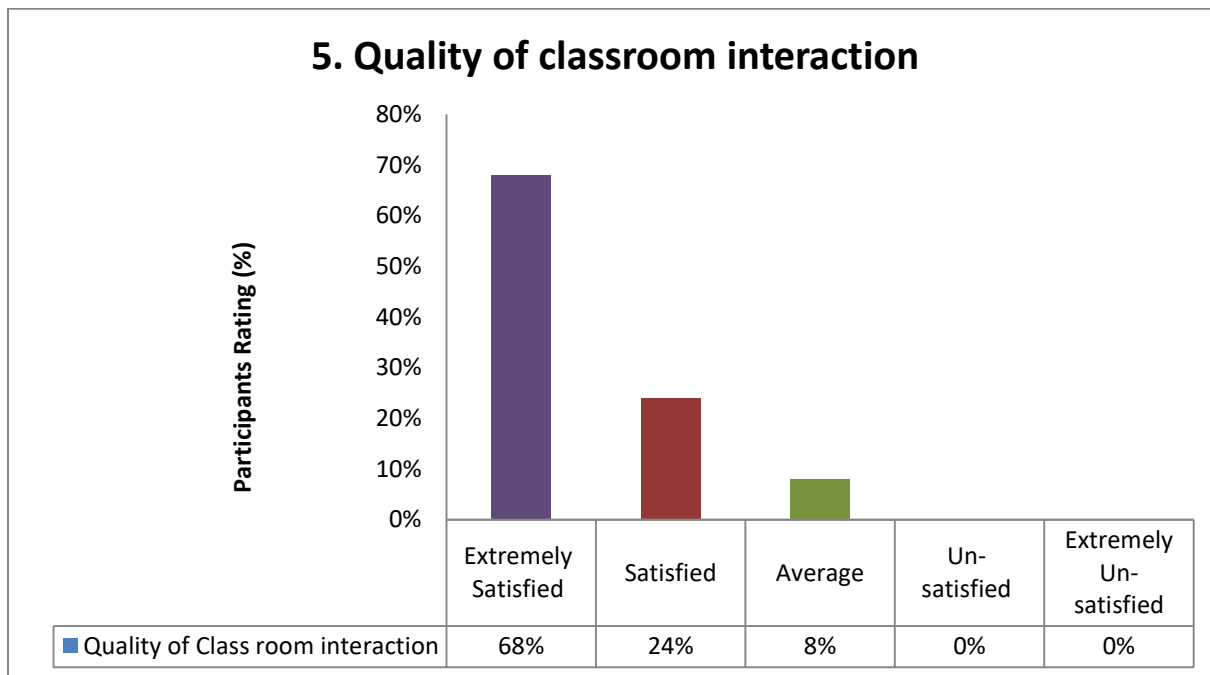
### 3. Quality of Speakers / Trainers



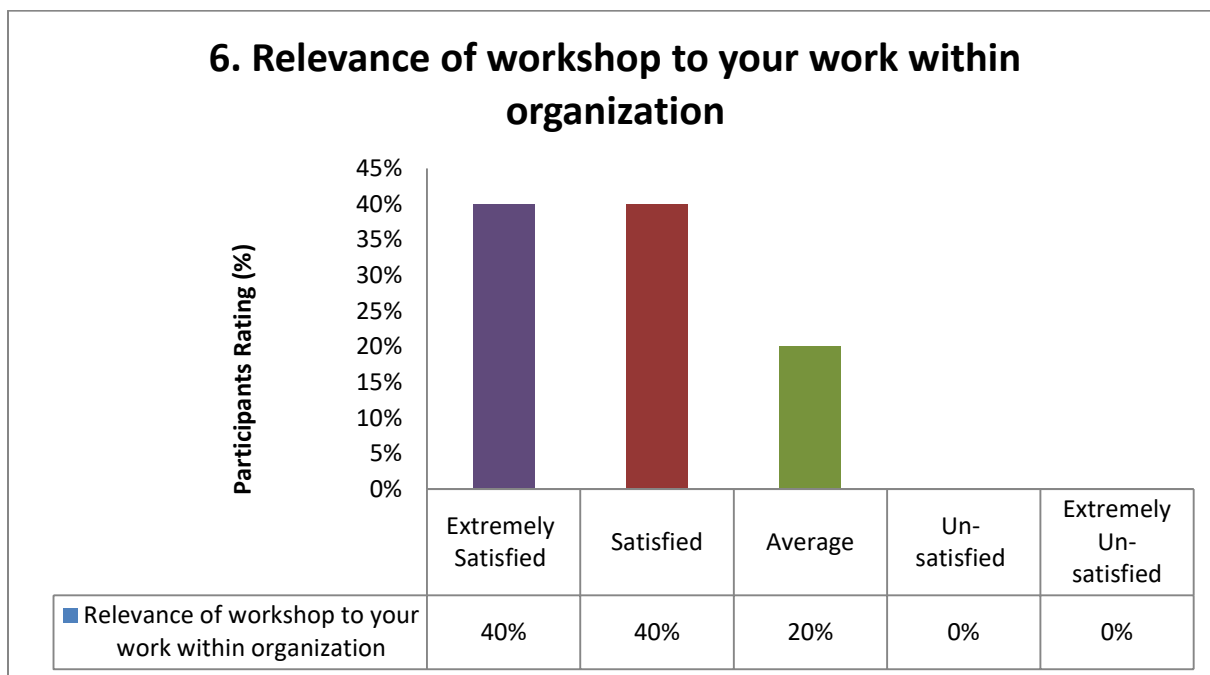
### 4. Appropriateness of training material



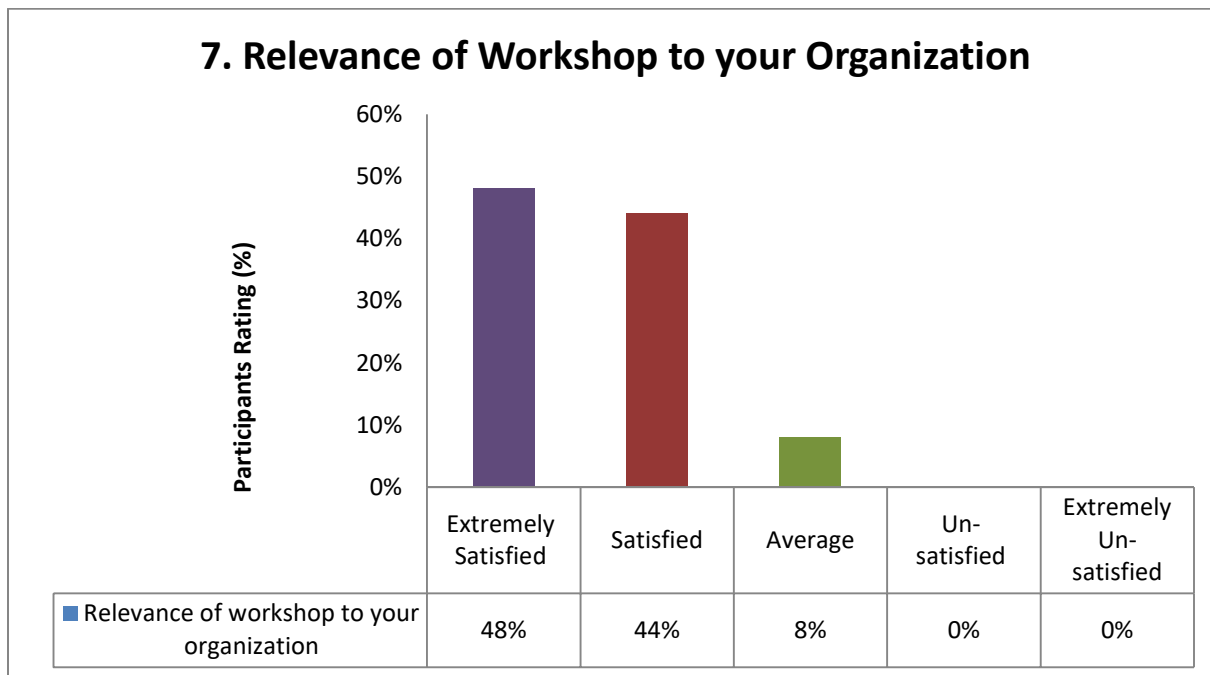
### 5. Quality of classroom interaction



### 6. Relevance of workshop to your work within organization





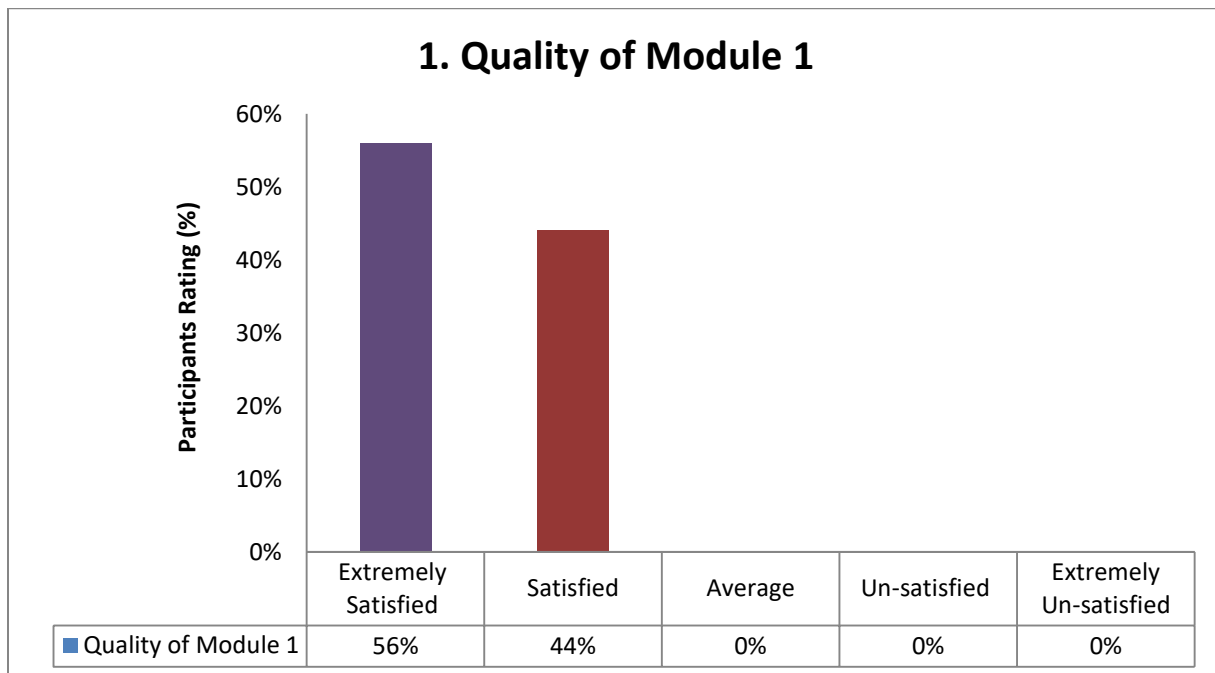
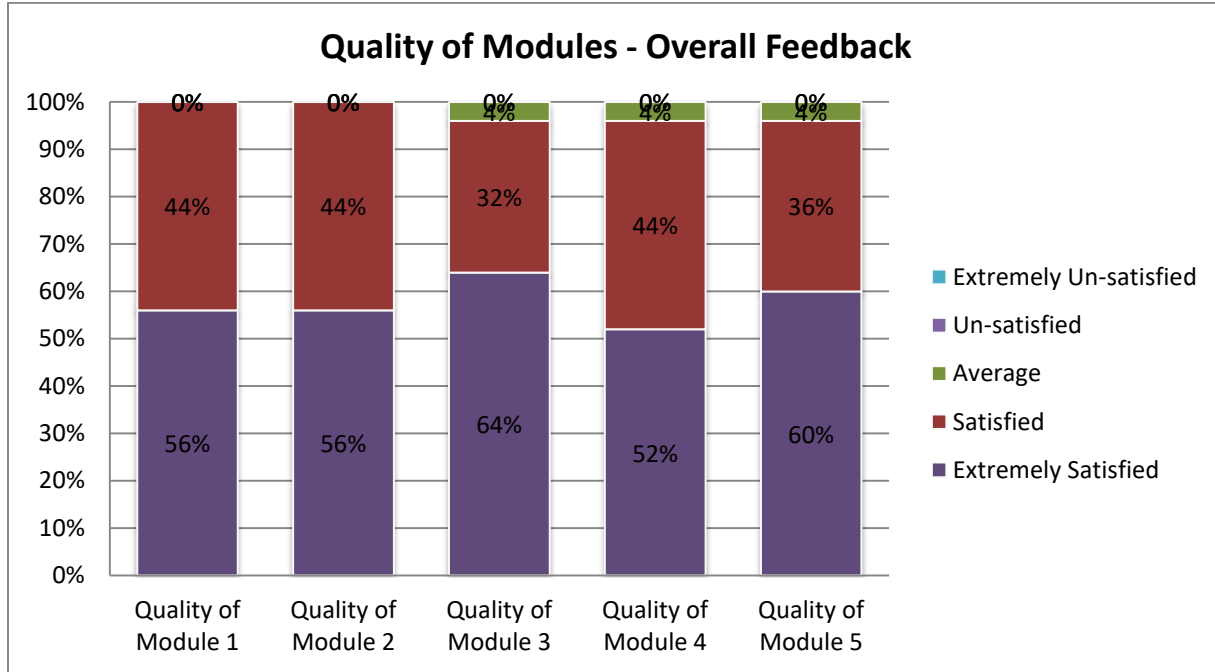


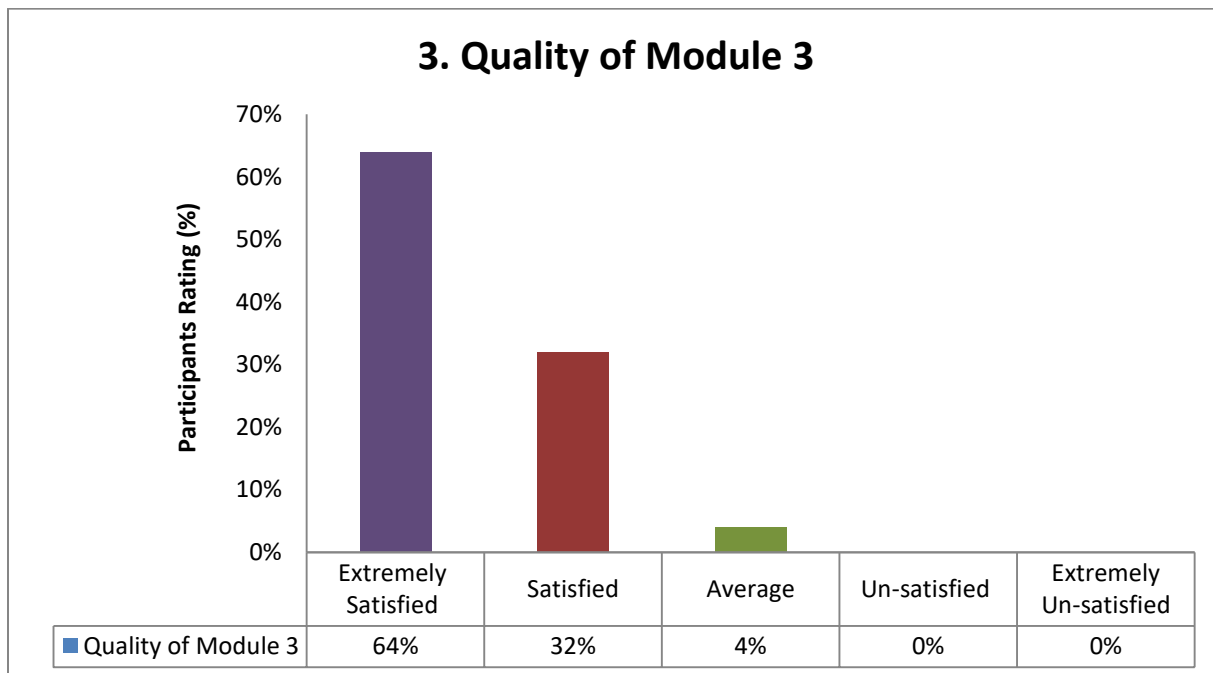
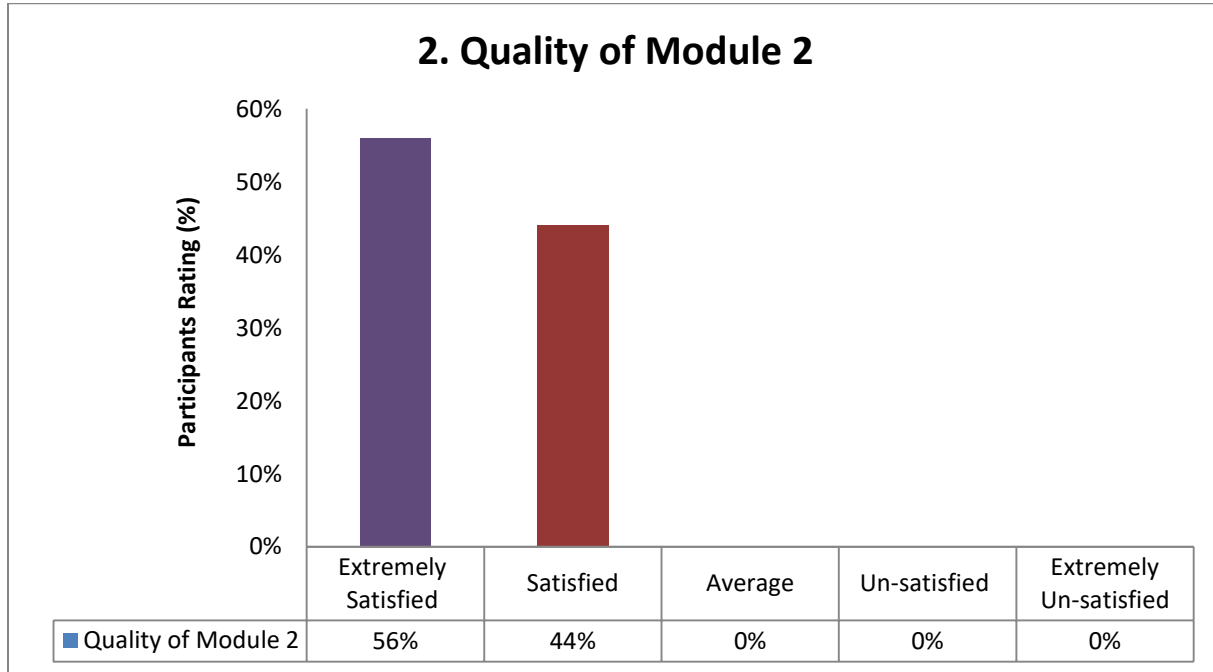
The workshop was imparted through 5 module sessions, covering –

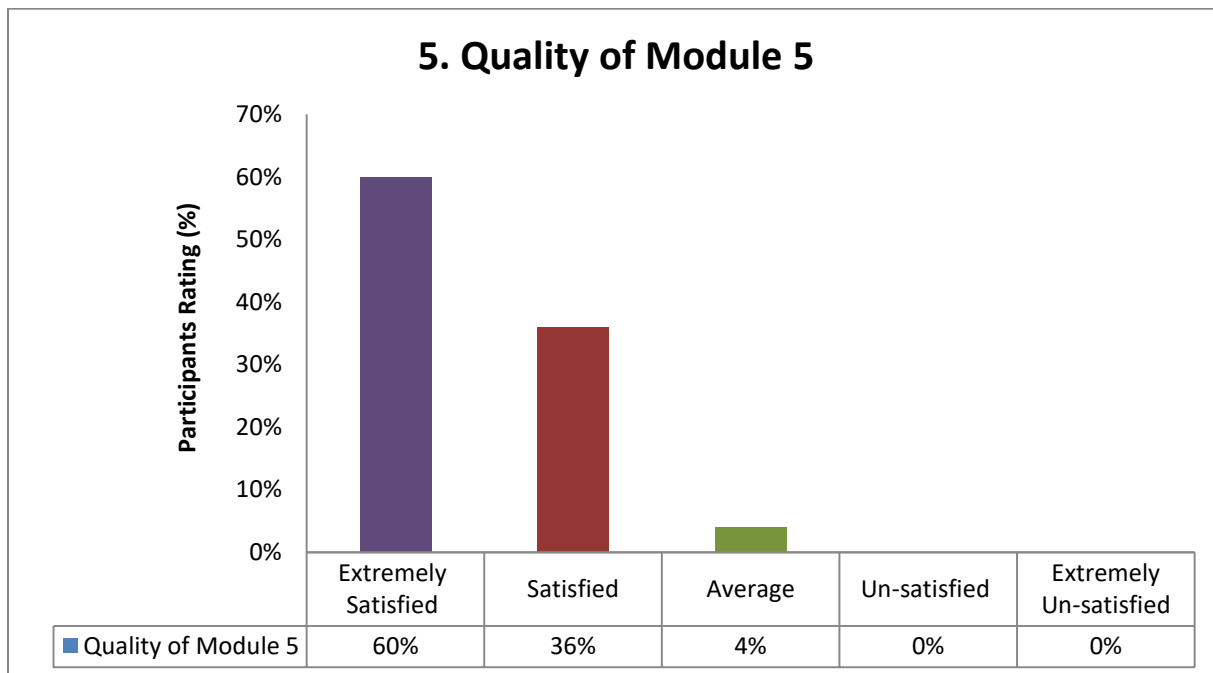
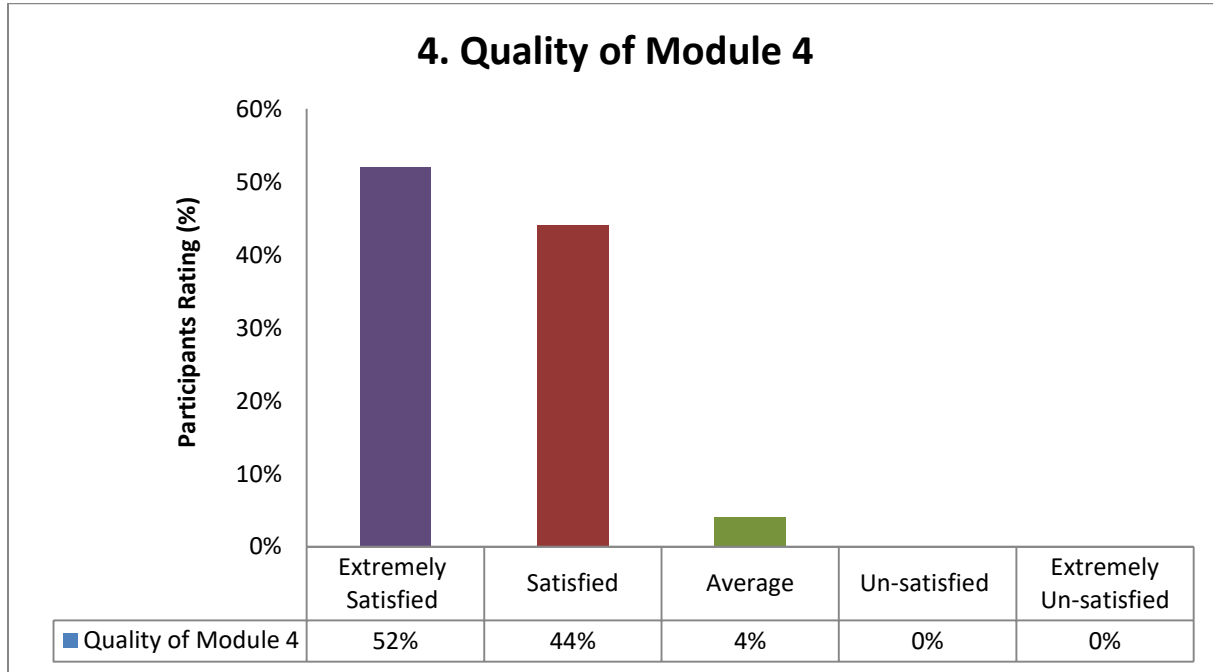
1. Energy Efficiency Financing – Market Opportunity
2. Introduction to ESCO and Business Models
3. Technical Appraisal of Projects
4. Financial Appraisal of Projects and
5. Introduction to Measurement & Verification

Apart from the 5 sessions, the participants were also involved and presented with case studies, activity session and quiz.

The summary chart of the feedback provided by the participants on all the training sessions delivered by the trainers / speakers is given below:







### WHAT THE PARTICIPANTS LIKED THE MOST ABOUT THE WORKSHOP

- Most participants appreciated the case studies and the workshop flow stating that they had a good learning experience.
- They concurred that the session gave a basic idea about EE that they were not aware of.

### WHAT THE PARTICIPANTS SUGGESTED FOR FURTHER IMPROVEMENT IN THE WORKSHOP

- They suggested that the financial appraisal could have been in detail with example of a case with the challenges that was faced in implementation
- Some suggestions for having a session with the FIs and the MSME representatives together

## ANNEX B – MANGALORE WORKSHOP – AGENDA

### “Training Workshop for Financial Institutions on Energy Efficiency financing”

Date & Venue: December 19<sup>th</sup>, 2017 – The Senate Hall, Hotel Deepa Comforts, Mangalore

Time	Topic	Speaker
09:30 AM - 10:00 AM	Registration	
<b>WELCOME SESSION</b>		
10:00 AM - 10:15 AM	Welcome Remarks	Mr. Ashutosh Tandon, Financial Sector Specialist, World Bank Group (WBG)
10:15 AM – 10:30 AM	Keynote Address	Mr. Atul Gautam, Indian Banks Association (IBA)
10:30 AM – 10:35 AM	Vote of Thanks	Mr. Dinesh K, KREDL
10.30 AM - 10.45 AM	<b>Group Photograph followed by Tea</b>	
10:45 AM - 11:00 AM	Preliminary assessment of trainees on Energy Efficiency	
<b>TECHNICAL SESSION</b>		
11:00 AM - 11:30 AM	Module 1: Introduction to Energy Efficiency (EE) and Market Opportunity	Mr. Ashutosh Tandon, Financial Sector Specialist, World Bank Group (WBG)
11.30 AM - 12:00 PM	Module 2: Introduction to ESCO and various business models for implementation of EE projects	Mr. Gowtham Sivabalan, Associate Director, Frost & Sullivan
12.00 PM - 12:30 PM	EE Case Studies – ESCO experience	Mr. Pratik Hakay, Founder-Director, Greetude Energy Pvt. Ltd.
12:30 PM - 01:30 PM	<b>Lunch</b>	
01:30 PM - 02:15 PM	Module 3: Technical Appraisal of EE project	Ms. Nisha Jayaram, Counsellor, Confederation of Indian Industry (CII)
02:15 PM - 03:00 PM	Module 4: Financial Appraisal of EE project	Mr. Sharachandra Bhise, SVP, Cluster Business Leader, EBB, Yes Bank Ltd.
03:00 PM - 03:30 PM	Activity session for the participants	
03:30 PM - 04:00 PM	Module 5: Introduction to M&V	Ms. Nisha Jayaram, Counsellor, Confederation of Indian Industry (CII)
04:00 PM - 04:30 PM	Quiz	Coordinated by BEE and IFC
04:30 PM - 04:45 PM	<b>High Tea</b>	
04:45 PM – 04:55 PM	Distribution of Certificates and Quiz Prize	Mr. Dinesh K, KREDL
04:55 PM – 05:00 PM	Vote of Thanks	Mr. Gowtham Sivabalan, Associate Director, Frost & Sullivan

### ANNEX C – MANGALORE WORKSHOP – LIST OF PARTICIPANTS

Sl. No	Name	Designation	Organization	Email ID	Mobile No
<b>Venue: Bangalore</b>					
01	Union Bank of India	Miss Soumya Jayachandran	Manager, Credit	s.jayachandran@unionbankofindia.com	9496574631
02	Central Bank of India	A R Kiran	Assistant Manager	Bmbang0873@centralbank.co.in	9495643650
03	Indian Bank	Santosh Kumar	Manager		9449864172
04	Indian Bank	Varun R	Assistant Manager	<a href="mailto:varunronline@gmail.com">varunronline@gmail.com</a>	9535750091
05	Indian Bank	Vasanth Nayak	Manager	<a href="mailto:bejaikafika@indianbank.co.in">bejaikafika@indianbank.co.in</a>	7204731455, 9449864188
06	South Indian Bank	Ajay Alex Stella	Assistant Manager	ajayalex@sib.co.in	8861016688, 9902865540
07	Indian Bank	Dinesh KS	Branch Manager	<a href="mailto:pumpwell@indianbank.co.in">pumpwell@indianbank.co.in</a>	9449864189
08	South Indian Bank	Haridev S	Assistant Manager	haridev@sib.co.in	9003501988
09	Andhra Bank	Naveen Prasad	Branch Manager	<a href="mailto:bm0860@andhrabank.co.in">bm0860@andhrabank.co.in</a>	9446908248
10	OBC	Pankaj Jha	Chief Manager	<a href="mailto:bm1079@obc.co.in">bm1079@obc.co.in</a>	7022038148
11	Yes Bank Ltd	Poornananda Rao	AVP		9972023212
12	State Bank of India	Ranjeet Kumar	Manager	ranjeet.kumar88.sbi.co.in	9480841584
13	IDBI Bank	Renjith George	AGM	Renjith.george@idbi.co.in	8606466834
14	Yes Bank Ltd	Sadananda Salian			9742750666
15	South Indian Bank	Sreejith D Shenai	Manager	sreejithshenai@sib.co.in	9663831718
16	Yes Bank Ltd	Vasudeva Samaga	Senior Manager & RL EBB	<a href="mailto:vasudeva.samaga@yesbank.in">vasudeva.samaga@yesbank.in</a>	9742533386
17	State Bank of India	Venkatesh Prabhu	DM	<a href="mailto:venkateshprabhu@sbi.co.in">venkateshprabhu@sbi.co.in</a>	9619883179
18	State Bank of India	Vidhyadhara	AGM	<a href="mailto:v.karkala@sbi.co.in">v.karkala@sbi.co.in</a>	9449866311
19	Yes Bank Ltd	Vir Edward Pais			9886203860



Sl. No	Name	Designation	Organization	Email ID	Mobile No
<b>Venue: Bangalore</b>					
20	Canara Bank	Jobitha Priyadarshanan	Officer	<a href="mailto:jobitha@canarabank.com">jobitha@canarabank.com</a>	9895361418
21	Canara Bank	Smt. Jasna M K	Officer, Mangaluru Collectors Gate	<a href="mailto:jasnamk@canarabank.com">jasnamk@canarabank.com</a>	9567143926
22	Canara Bank	Smt. Rajashree B	Manager, Advances Section	<a href="mailto:rajashree@canarabank.com">rajashree@canarabank.com</a>	9480760930
23	Canara Bank	Smt. Suguna Naik	Senior Manager	<a href="mailto:m.sugunanaik@canarabank.com">m.sugunanaik@canarabank.com</a>	9448984285
24	Canara Bank	Sri. Anurag Sharma	Probationary Officer	<a href="mailto:cb3467@canarabank.com">cb3467@canarabank.com</a>	9981604131
25	Canara Bank	Sri. Hibin G	Officer, MSME, Mangaluru Circle Office	<a href="mailto:hibing@canarabank.com">hibing@canarabank.com</a>	9036355678
26	Karnataka Bank	Sri. Joshi Sudhindra Ganapati	Manager	<a href="mailto:mcfid@ktkbank.com">mcfid@ktkbank.com</a>	7259258440, 0824-2228207/164





# Training Workshops for Financial Institutions on Energy Efficiency (EE) Financing in India



Indian Banks' Association



**IFC** International Finance Corporation  
WORLD BANK GROUP

*Creating Markets, Creating Opportunities*



Programme co-funded by the  
EUROPEAN UNION