

Study Tour Report



International Study Tour on “Energy Efficiency” In the frame of the GIZ Programme “Regional Energy Efficiency Programme (REEP)”

Gesellschaft für Internationale Zusammenarbeit (GIZ)
On behalf of the Federal Ministry for Economic Cooperation and Development
In cooperation with the Bureau of Energy Efficiency, India
11 December – 17 December 2011

Commissioned by
GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit gGmbH)

Report prepared by
Johannes Alexeew (adelphi)

Content

Introduction	2
Objective and Organisation of the Training Programme	2
Approach of the Study Tour	2
Study Tour Materials	2
Networking	3
Participants	3
Contacts to the Speakers	4
Study Tour – Overall Agenda	5
Detailed Summary:	7
Evaluation	11
Conclusion	15

Introduction

Energy efficiency is essential for shifting country development paths toward lower-carbon economic growth. Especially in South Asia, enormous potential for energy savings opportunities exist. However, although most investments in energy efficiency promise attractive rates of return, existing energy efficiency mechanisms and activities are extremely small relative to the large potential for EE investments in the region. Many experts particularly postulate that little investment capital for EE measures is the main reason for this situation. However, reducing the problem of little EE measures to a lack of capital would be too easy. Investment barriers are only one dimension of the more complex situation. In fact, barriers towards more EE measures are manifold. One simple, but very important factor for untapped EE potentials is the lack of knowledge on the very sources where energy can be reduced, both in residential buildings as well as in the industry. Even environmentally aware house owners or managers who would like to improve the energy consumption of their facilities often just do not know how.

A very promising instrument to increase the awareness for EE and to help industries and private households in identifying energy reduction potentials are energy audits, conducted by qualified energy auditors. Energy auditors evaluate the energy performance of buildings and processes and identify potentials for improvement. Furthermore, they calculate amortisation periods of improvement measures and subsequently help to find the most suitable improvements. And if required, energy auditors even assist in implementing these measures.

The study tour facilitated a regional knowledge exchange between Nepal, Bangladesh and India regarding energy audits. On the one hand, the Bureau of Energy Efficiency in India and other relevant institutions shared their experiences in this field and introduced the participants to India's regulations and other mechanisms shaping the framework for energy audits. However, the study tour not only aimed at realising a one-sided exchange. The guests from Bangladesh and Nepal had plenty of opportunities to share their own experiences.

Objective and Organisation of the Training Programme

The objective of the programme was to showcase the participants options for implementing energy auditing and management schemes and, in this regard, to share the lessons learned in India and Germany.

Approach of the Study Tour

Beside training elements on energy audits, another component of the study tour was the participation on the South Asia Policy Dialogue & Capacity Building Event, organised in context of the International Partnership for Energy Efficiency Cooperation (IPEEC). The policy dialogue and capacity building event featured presentations, panel discussions and experience sharing on specific energy efficiency policy and delivery issues of interest to South Asia region.

Study Tour Materials

A flash drive including all the presentations and useful background papers were handed out to the participants at the end of the study tour. Important information and the agenda were provided beforehand.

Networking

The study tour was designed to give enough space for internal and external networking. The participants from were requested to interact and collaborate.

Participants

The participants were representatives from relevant governmental bodies in Nepal and Bangladesh, dealing with the legislative framework for energy auditing and management.

List of participants in the training programme

No.	Name of the Organization	Name (Position Held)	E-mail
1	Ministry of Power, Energy & Mineral Resources (MPEMR)	Mr. A.K.M Kairul Alam (Dulal) (Deputy Secretary)	akmkhairul.85@gmail.com
2	Ministry of Power, Energy & Mineral Resources (MPEMR)	Mr. MD. Abdur Rouf Miah Rouf Miah (Director (Sustainable Energy))	dir.sus@powercell.gov.bd
3	Water and Energy Commission Secretariat (WECS)	Mr. Sunil Bahadur Malla (Joint Secretary)	sunilbmalla@gmail.com
4	Water and Energy Commission Secretariat (WECS)	Mr. Sanjaya Dhungel (Senior Divisional Engineer)	sdhungel@wecs.gov.np
5	Water and Energy Commission Secretariat (WECS)	Mr. Suresh Shrestha (Senior Divisional Engineer)	saudaksur@gmail.com
6	Alternative Energy Promotion Centre (AEPCC)	Mr. Nawa Raj Dhakal (Senior Training Officer)	nawa.dhakal@aepc.gov.np; nrdhakal@yahoo.com
7	Nepal Electricity Authority (NEA)	Mr. Abhishek Adhikari (Electrical Engineer)	abhishekadhikary@yahoo.com
8	Nepal Bureau of Standards and Metrology (NBSM)	Mr. Narahari Bhandari (Electrical Engineer)	narahari_bhandari@yahoo.com
9	Energy Efficiency Center (EEC); Federation of Nepalese Chambers of Commerce and Industry (FNCCI)	Dr. Uttam Kumar Kunwar (Project Manager)	uttam.kunwar@fncci.org

Contacts to the Speakers

Company/ Institution	Name	Position / Department	(Mobile) Phone	Email
Adelphi	Mr. Mikael P. Henzler	Project Manager	+49 30 89 000 68 80	henzler@adelphi.de
Adelphi	Mr. Johannes Alexeew	Managing Director	+49 30 89 000 68 14	alexeew@adelphi.de
Bureau of Energy Efficiency	Mr Saurabh Diddi	Energy Economist BEE	9911105020	sdiddi@beenet.in
Indo German Energy Program	Mr A K Asthana	Senior Technical Specialist	9810593431	arvind.asthana@gtz.de akasthanaak@yahoo.co.in
Indo German Energy Program (IGEN)	Mr. Ashok Kumar	(EMT International) Adviser – Information	9810939643	akumar@emt.in akumar@energymanagertraining.com
National Productivity council	Mr. D Pawan Kumar	Director EC	9818802231	dpawan.kumar@npcindia.org d_pawankumar@yahoo.com
Petroleum Conservation Research Association	Mr. Pankaj Agarwal	Joint Director	9868100895	agarwalp@pcra.org

Study Tour – Overall Agenda

Day 1:	Sunday, 11.12.2011
Delhi	Evening: Arrival and transfer to hotel
Day 2:	Monday, 12.12.2011
Delhi	Welcoming and introduction
10.00-11.30	<ul style="list-style-type: none"> ▪ Welcome and introduction (GIZ and adelphi) ▪ Individual introduction of the participants and their expectations
11.30-12.00	Tea break
12.00-12.30	Scope of knowledge-transfer from study tour (Nepal/Bangladesh) General discussions
12.30-14.00	Lunch
14.00-15.30	General Overview on EE auditors and managers scheme in India Experience with the policy framework under the Energy Conservation Act 2001 (By Mr. Saurabh Diddi, Energy Economist, BEE)
15.30-16.00	Tea break
16.00-17.00	Another best practice example: Framework for Energy Auditing in Industry and Buildings in Germany (adelphi)
19:30	Welcome dinner at 'Gulati' , Pandera Road
Day 3:	Tuesday, 13.12.2011
Delhi	Introducing the system of EE-Auditors and Managers
09.30-10.30	Capacity Building for Energy Manager/ Energy Auditor, Qualification, Certification, procedure. Experience and impact from 12 National certification Examinations conducted so far by NPC. (By Mr. D. Pawan Kumar NPC)
10.30-11.15	Roles and responsibilities of EM/ EA (By Mr. D. Pawan Kumar NPC)
11.15-11.45	Tea break
11.45-13.00	Energy Auditing Instruments, Software Tools for energy audits (By Mr. Pankaj Agarwal, Joint Director PCRA)
13:00–14:00	Lunch
13.45-15.00	Website www.energymanagertraining.com on Energy Management (By Mr. Ashok Kumar, EMT International)

15.00-15.30	Tea break
15:30-17:00	<p>Implementation of the National Mission on Enhanced Energy Efficiency (NMEEE) under the National Action Plan on Climate Change (BEE)</p> <p>Energy Efficiency Trading Instrument "Perform, Achieve and Trade" (PAT) (By Mr. Arvind Asthana, Senior Technical Specialist, IGEN- BEE)</p>
Day 4:	Wednesday, 14.12.2011
Delhi	National Energy Conservation Day – Energy Award Function, at Vigyan Bhawan
09.00-12.30	The awards were handed over by Honorable Prime Minister of India, Shri Manmohan Singh.
	IPEEC: Policy Dialogue Event
13.15–18.00	<p>The policy dialogue featured presentations and panel discussions on energy efficiency in the South Asia region.</p> <p>Kindly find the tentative agenda in the Annex.</p>
Day 5:	Thursday, 15.12.2011 Kindly find the tentative agenda in the attached PDF
Delhi	IPEEC - Capacity Building Workshop
	Kindly find the tentative agenda in the Annex.
Day 6:	Friday, 16.12.2011
Delhi	IPEEC - Capacity Building Workshop
	Kindly find the agenda in the Annex.
Day 7:	Saturday, 17.12.2011
Delhi	Departure

Detailed Summary:

Day One: Arrival and first outlook of programme

The participants from Nepal arrived in the late afternoon of the first day of the study. Mr. Henzler and Mr. Alexeew welcomed them in Delhi and gave a first outlook of the programme for the next days. Also the per-diems were given to the participants.

Day Two: Introduction to the Training, Overview on EE auditors and manager schemes in India and Germany

The second day and first training day started in the hotel conference room with practical information on the organisation and the content of the following days. The first activity consisted of an introductory presentation session, where participants introduced themselves including their actual position, experience in energy efficiency and expectations about the training course.

In the afternoon, the session about the policy framework under the Energy Conservation Act in India was introduced by Mr. Saurabh Diddi, Energy Economist at BEE, and several legislations and measures which are influencing the EE auditors and managers' environment were presented by him.

In the concluding session Mr. Johannes Alexeew spoke on the framework for energy auditing in the industry and buildings in Germany. The presentation focussed on different ways of subsidising energy audits and requirements regarding qualifications of energy auditors.

In the evening, the participants were invited to a welcome dinner in the very popular and exquisite restaurant 'Gulati'. The Welcome Dinner presented an excellent opportunity for an intense exchange between the participants and the experts from adelphi.

Day 2:	Monday, 12.12.2011
Delhi	Welcoming and introduction
10.00-12.30	<ul style="list-style-type: none"> ▪ Welcome and introduction (GIZ and adelphi) ▪ Individual introduction of the participants and their expectations ▪ Scope of knowledge-transfer from study tour (Nepal/Bangladesh) ▪ General discussions
14.00-15.30	General Overview on EE auditors and managers scheme in India Experience with the policy framework under the Energy Conservation Act 2001 (By Mr. Saurabh Diddi, Energy Economist, BEE)
16.00-17.00	Another best practice example: Framework for Energy Auditing in Industry and Buildings in Germany (adelphi)
19:30	Welcome dinner at 'Gulati' , Pandera Road



Day Three: Detailed introduction to the system of EE-Auditors and Managers in India

In the morning of the third day of the training course the participants again came together in the conference room of the hotel.

During the morning session Mr. Pawan Kumar from National Productivity Council (NPC) spoke about capacity building and particularly on the qualification and certification system for energy managers and auditors. He shared the experience gained at a dozen of examination rounds, which took place in India. Further Mr. Pawan Kumar explained the different roles and responsibilities of energy auditors and energy managers.

The next session was held by Mr. Pankaj Agarwal, the Joint Director from Petroleum Conservation Research Association (PCRA). He gave an overview of software tools successfully applied in his company to assess energy saving potentials in industrial processes. Mr. Arvind Asthana, Senior Technical Specialist at IGEN-BEE, concluded the two-day training course by introducing the “Perform, Achieve and Trade” system in India.

The two participants from Bangladesh joined the group during day three.

Day 3:	Tuesday, 13.12.2011
Delhi	Introducing the system of EE-Auditors and Managers
09.30-10.30	<p>Capacity Building for Energy Manager/ Energy Auditor, Qualification, Certification, procedure. Experience and impact from 12 National certification Examinations conducted so far by NPC.</p> <p>By Mr. D. Pawan Kumar NPC</p>
10.30-11.15	Roles and responsibilities of EM/ EA (By Mr. D. Pawan Kumar NPC)
11:45-13:00	Energy Auditing Instruments, Software Tools for energy audits (By Mr. Pankaj Agarwal, Joint Director PCRA)
13.45-15.00	Website www.energymanagertraining.com on Energy Management (By Mr. Ashok Kumar, EMT International)





15:30-17:00	<p>Implementation of the National Mission on Enhanced Energy Efficiency (NMEEE) under the National Action Plan on Climate Change (BEE)</p> <p>Energy Efficiency Trading Instrument "Perform, Achieve and Trade" (PAT) (By Mr. Arvind Asthana, Senior Technical Specialist, IGEN- BEE)</p>
-------------	---

Day Four: National Energy Conservation Day and IPEEC Policy Dialogue Event

In the morning of day four of the training event, the participants were invited to visit the "National Energy Conservation Day" organised by the BEE. During the high-level "National Energy Conservation Day", outstanding enterprises actively reducing their energy usage were awarded with the Energy Conservation Award. The awards were presented to the winners by Honorable Prime Minister of India, Shri Manmohan Singh.

The participants were provided with an insight on how awareness of energy efficiency in the industry can be fostered by promotion events like the "National Energy Conservation Day".

In the afternoon, the regional IPEEC event on Energy Efficiency was officially launched by a policy dialogue addressing feature presentations and panel discussions on energy efficiency in the South Asia region. The dialogue brought together high-level officials from South Asia and some other international experts to discuss how energy efficiency can contribute to energy security, sustainable development, and economic competitiveness in the region. The dialogue contributed to raising awareness on linkages between energy efficiency policy and other issues, including the fiscal impact of subsidy outlays, extending modern energy access, energy trade imbalances, and solving the problem of unmet energy demand.

Day 4:	Wednesday, 14.12.2011
Delhi	National Energy Conservation Day – Energy Award Function, at Vigyan Bhawan

09.00-12.30	The awards were handed over by Honorable Prime Minister of India, Shri Manmohan Singh.
-------------	--

IPEEC: Policy Dialogue Event

13.15–18.00	The policy dialogue featured presentations and panel discussions on energy
-------------	--

efficiency in the South Asia region.

Kindly find the agenda in the Annex.



Day five and six: IPEEC - Capacity Building Workshop

At day five and six the group actively participated in the IPEEC Capacity Building Workshop. The two-day workshop was visited mainly by energy efficiency experts from governments and other official institutions from throughout the South Asia region. The workshop featured discussions and experience exchange on specific energy efficiency policy and delivery issues of interest to South Asia region. The event strengthened regional capacity to formulate, design, and implement energy efficiency policies and programmes suitable to regional conditions and country context. All participants of the REEP training course were actively involved in the IPEEC workshop and engaged intensively in discussions with other representatives from South Asia facing similar problems with regards to energy efficiency. Additionally, Mr. Sunil Bahadur Malla presented Nepal's efforts in the field of Energy Efficiency as a speaker on the panel.

Day 5:	Thursday, 15.12.2011
---------------	-----------------------------

Delhi	IPEEC - Capacity Building Workshop
--------------	---

Kindly find the agenda in the Annex.

Day 6:	Friday, 16.12.2011
---------------	---------------------------

Delhi	IPEEC - Capacity Building Workshop
--------------	---

Kindly find the agenda in the Annex.

Evaluation

In the early evening of day six an evaluation round was held, during which the training course certificates were also handed over. The participants were asked to share their experiences in a questionnaire, in order to provide suggestions for upcoming study tours. Some relevant results of this questionnaire will be presented in the following.



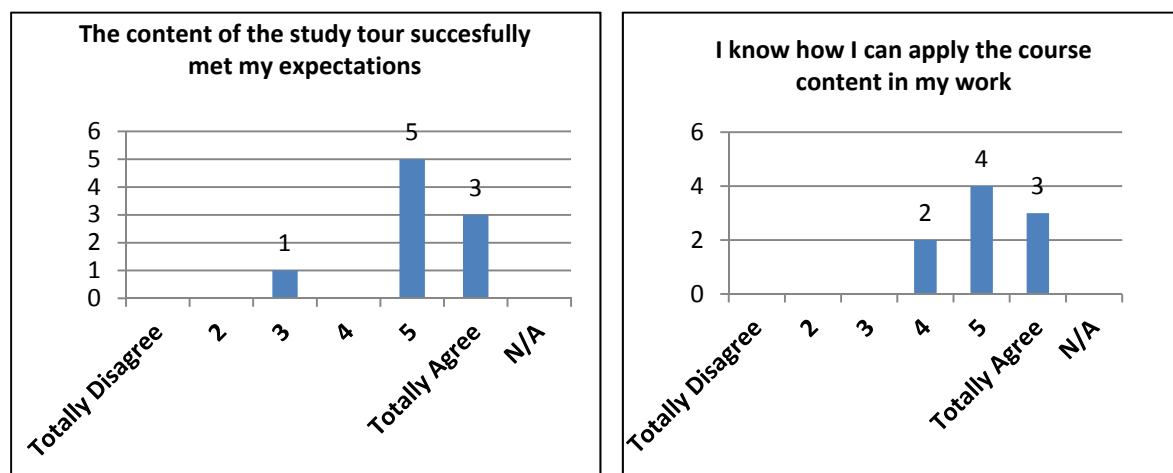
The session started with words of acknowledgement by Mr. Henzler from adelphi to the participants and a brief summary of the study tour. Furthermore, Mr. Henzler explained the aim of the evaluation session and the activities to follow.

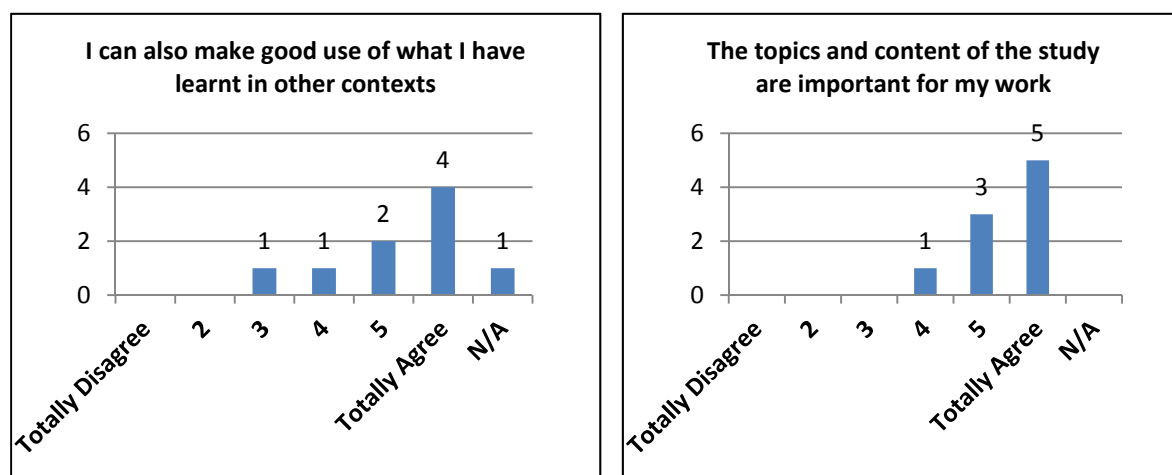
The overall content, quality of presentations, and different answers related to the challenges of the implementation of knowledge in Nepal and Bangladesh were discussed.

Overall, the participants were very pleased with the entire training programme and there was no presentation/session which did not meet the expectations of the participants. Only the lack of practical sessions or site visits were mentioned as one minor downside of the programme. Even though the participants were aware of the class-room format of the training course in advance in order to foster knowledge exchange on the legislative framework conditions for energy efficiency, sitting five days in conference rooms provided too little alternation. This feedback will be incorporated in the design of future study tours.

Results of the questionnaire:

For an overview of the results, the most relevant outcomes are presented hereafter. Some other personal remarks and answers to open questions are also shown.





As it can be seen above, the relevance and content of the presentations fulfilled most of the expectations of the participants who considered the topics important and transcendent for their actual work. Even more important to the participants was the fact that the information and knowledge gained can be implemented in other contexts and passed on to other colleagues.

Some of the answers to the open question where the participants had already concrete ideas on how to apply what they learned included:

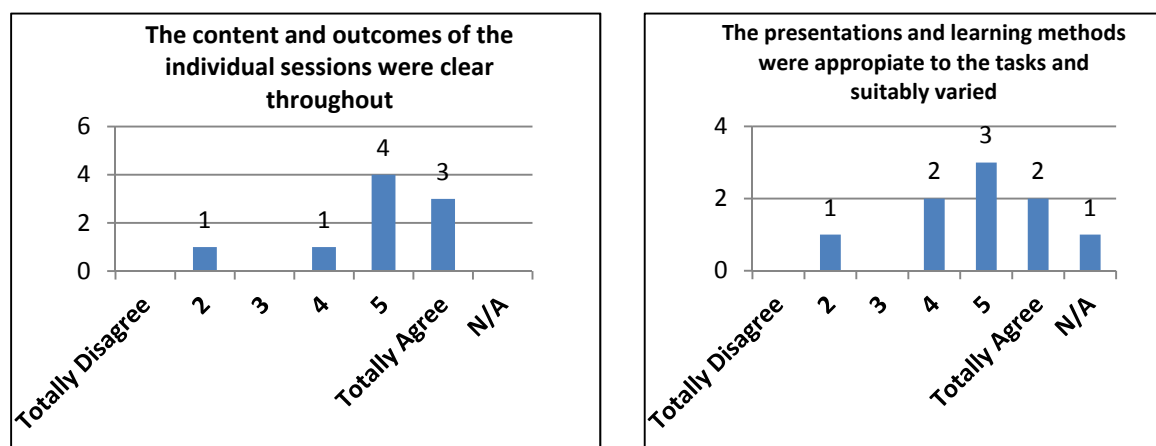
“Share the experience among colleagues back in organization, identify areas where some interventions could be applied, prepare an action plan and go for action”

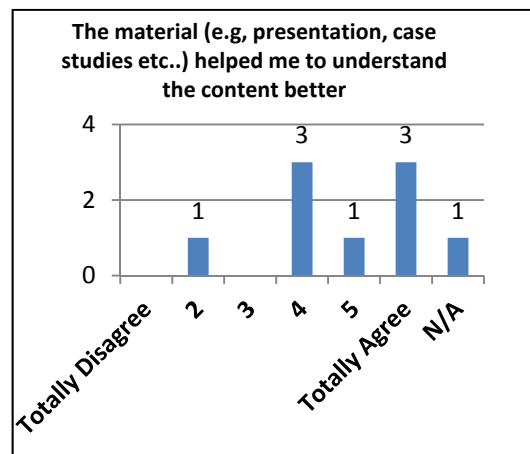
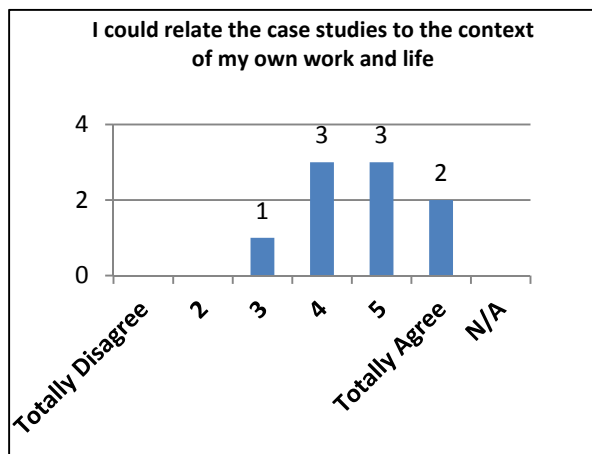
“To appoint energy auditor & manager in the big industries. To set a national target for EEA to prepare an action plan.”

“Need assessment, awareness/orientations on EE & benefits, development of action plan & listing, qualification & implementation”

“Sharing of ideas with colleagues, literature review, using ‘word of mouth’ for dissemination of ideas”

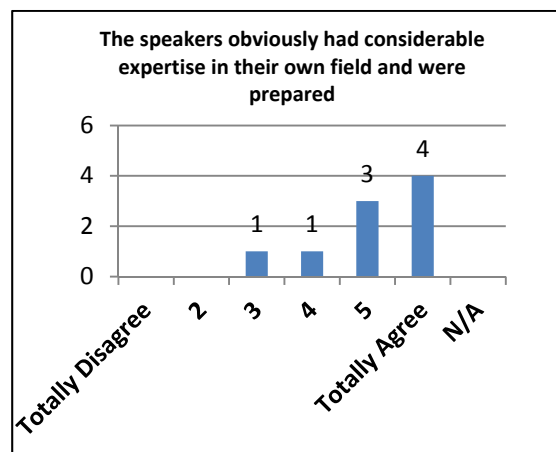
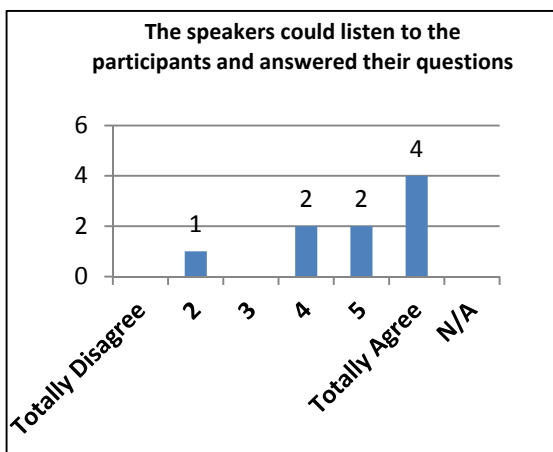
Related to the **working and learning methods**, the following results were obtained:





It is important to note that the contents of the presentations were all well understood and clear throughout. This is relevant since there were no misunderstandings or missing issues and the way the knowledge was passed on was appropriate for the majority of participants. Regarding the question concerning the duration of the tour, six of the participants considered the length adequate. No one had the impression that it had been too long and only three participants found it too short. Therefore it is expected that future tours will maintain the overall duration and maybe include excursion visits.

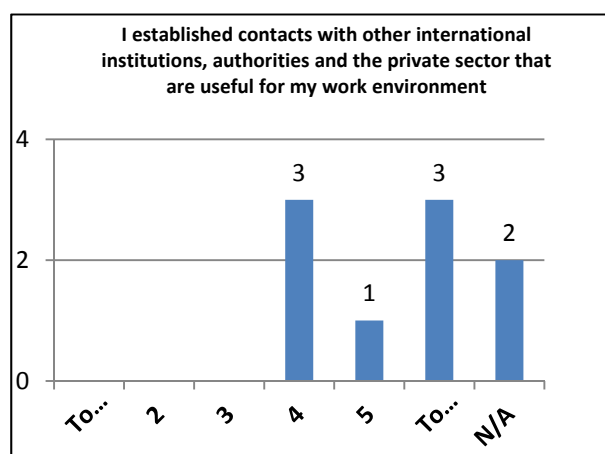
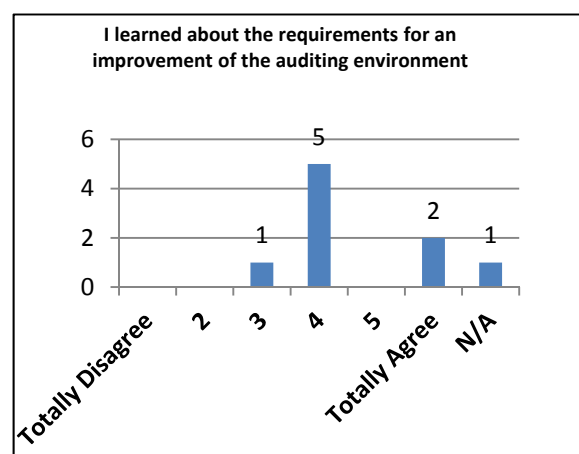
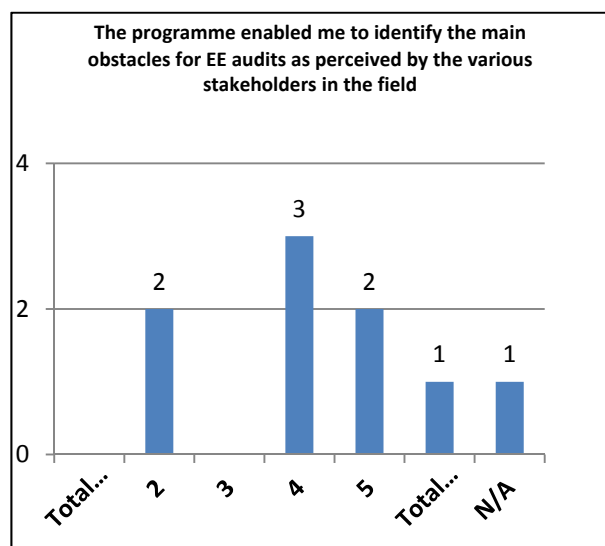
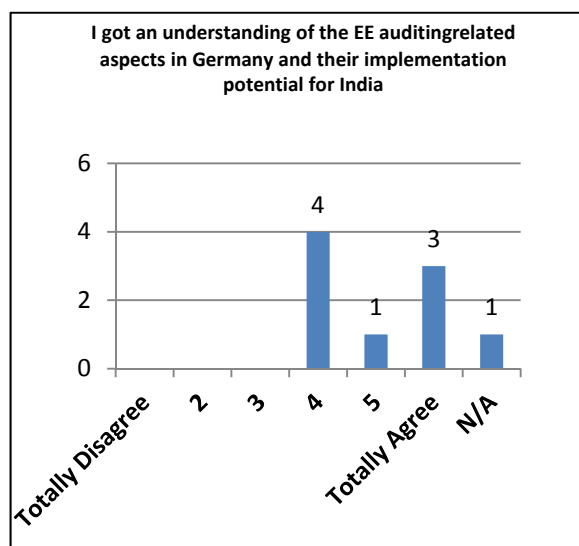
In this context it is also important to assess the opinion of participants regarding the quality of the **speakers**, and their impression towards the expertise in the presented field. The following results regarding the speakers were obtained:



The majority of the participants had the feeling that they had been dealing with speakers with sufficient expertise in their field and that the speakers had been able to respond well to all questions.

An important factor of the success of any study tour, even if it is no directly related to organizational issues, is the atmosphere among participants. The cooperative atmosphere was very positive for seven out of nine participants. However, the benefit from the experience of the others was mostly in the middle range. Most of the participants have the intention of maintaining contact in the future.

The **achievement of objectives** is another transcendent indicator of the success of the study tour. Thus, the overall impression and feeling of having understood energy efficiency auditing-related aspects were assessed, and it was asked if the programme enabled to identify the main issues of EE Auditing. For future development it is also important to know if delegates established contacts with other international organisations, authorities and the private sector. The results regarding the achievement of objectives were as follows:



The results show that the intended goal of transferring the relevant content of energy auditing and the understanding of consequent barriers and challenges was generally achieved, but that there is some potential for improvement still. Contacts were established by most participants.

An important question was related to the overall competences or expertise that participants acquired in addition to the explicit outcomes of the training course. Some answers from participants are presented here:

“Interaction with participants from other countries.”

“Knowledge about vast domain & EE opportunity & pit falls.”

“How to prepare action plan, how to set target & implementation, how to monitor the activities.”

“Networking with relevant professionals and organizations.”

“Who to make policy and administrative measures about EE”

“It has made me a better and well informed on the topics and has made me able to disseminate them to others.”

Last but not least the questionnaire asked if participants were satisfied with the overall organisation of the programme.



Overall, participants were highly satisfied with the organisation of the study tour. The overall satisfaction included the accompanying programme, seminar room, catering, and important information received in the run-up to the study tour (e.g. organisational details, technical/professional information on the subject).

Conclusion

The international training programme organised within the GIZ programme focused on energy auditing. The programme consisted of presentations and workshops dealing with energy auditing. All participants were highly motivated and showed interest in the different session and presentations. The atmosphere and the interaction between participants, experts and the adelphi team were extremely cordial.