

SOUTH ASIAN ASSOCIATION FOR REGIONAL COOPERATION (SAARC)



**SAARC ENERGY CENTRE
ISLAMABAD**

Program Activity: SEC/PRG-57/2013/POSIT

**SAARC Training Workshop on
Energy Audit and Efficiency in the Power Sector**

Organized by

SAARC Energy Centre, Islamabad

in collaboration with

National Transmission and Dispatch Company (NTDC) Pakistan

27-29 August 2013

Lahore, Pakistan

SAARC Energy Centre
697, Street 43, Sector E-11/4, NPF,
Islamabad, Pakistan

www.saarcenergy.org



SEC Program Activity: SEC/PRG-57/2013/POSIT

**Training Workshop on
Energy Audit and Efficiency in the Power Sector**

Lahore, Pakistan, 27-29 August 2013



The Report**Introduction**

SAARC Energy Centre, Islamabad under its program for FY 2013 organized a three days training workshop on Energy Audit and Efficiency in the Power Sector on 27-29 August 2013. The event was arranged at Hotel Avari, Lahore, Pakistan in collaboration with Pakistan National Transmission and Dispatch Company. Copy of the Workshop Program is attached as Annex-I.

2. The objective of this workshop was to facilitate the SAARC Member States to launch/enhance audit and efficiency initiatives in the diversified fields of energy supply to build up capacity and to enhance awareness among the power sector professionals to ultimately strengthen prevailing as well as upcoming energy conservation and efficiency improvement programs.

3. Recommendations adopted by the workshop participants reflect the event quite a success since it is indicated that the workshop resource persons and participants were overwhelmed to further the focusing of efforts and resources on the energy audit and efficiency in the power sector of the SAARC Member States as well as to secure the maximum benefit from the relevant regional best practices.

Participation

4. Participants list is attached at **Annex-II**. A total of 31 delegates from Afghanistan, Bangladesh, India, Pakistan, Sri Lanka and SAARC Energy Centre participated in the workshop. The workshop attracted an overwhelming participation from Pakistan; delegates from NTDC, Power Distribution Companies, Provincial Energy Departments, Industry and Academia eagerly participated in the workshop proceedings as well as the field visit. Mr. K. K. Chakarvarti, Energy Economist, Bureau of Energy Efficiency (BEE), India could not joined the workshop due to other official commitments, however, he managed delivery of his presentation on “Audit Process, Methodology and Indian Case Studies” by Mr. Anil Kumar, Assistant general Manager, National Thermal Power Corporation, India.

Inaugural Session

5. Mr. Hilal A. Raza, Director, SAARC Energy Centre welcomed all the delegates from SAARC Member States. He specially thanked Mr. Arif Alauddin, Managing Director, ENRCON, Pakistan for inaugurating this workshop and encouraging all endeavors with respect to energy conservation and efficiency. He introduced SAARC Energy Centre to the delegates and highlighted its commitment mitigate energy poverty through fostering energy cooperation within and across South Asia for a better tomorrow. While stressing on the importance of this workshop, he pointed out that the outcomes of energy auditing and improved efficiency in the power sector directly correspond to the economic development of the region that is linked with a reliable, economic and sustained power system. He wished nice stay for all the participants at Lahore, Pakistan.

The Chief Guest, Mr. Arif Alauddin, Managing Director, ENERCON, Pakistan inaugurated the workshop. In his inaugural address, the chief guest emphasized on the importance of adopting multi dimensions energy efficiency program to reduce the ever escalating power demand in the region. He also stressed that losses at every stage of the power sector including generation, transmission and distribution could be minimized with effective policies and projects; he added that, in this context, this training workshop will be proved a building block for achieving the optimal energy efficiency in the power sector through established and modern techniques on energy auditing. A group photograph of workshop participants with the Chief Guest was snapped on this occasion.

Technical Presentations

6. Technical proceedings, designed on the following thematic areas, started with 10 minutes, country presentation by each participating Member State.

- a. Energy Audit – Concept and Potential
- b. Tapping the Energy Efficiency Potential in Processes, Systems and Networks
- c. Audit Process, Methodology and Automation – Best Industry Practices
- d. Capacity Building on Energy Audit – What is Available and What is Required?

The workshop program comprised of four technical sessions with an overall 20 presentations by energy professionals from the SAARC Member States. All the presentations have been uploaded at the SEC Web.

Reception

7. SAARC Energy Centre hosted welcome dinner on the evening of the opening day for the workshop participants providing an informal opportunity for close interaction and networking.

Interactive Formulation of the Way Forward

8. A three members Rapporteur Committee comprising of **Mr. Ali Mehmud**, Managing Director– Sunergy, Pakistan, **Mr. Ronald Comester**, Chief Engineer, Head of Demand Side Management Branch, Ceylon Electricity Board, Sri Lanka and **Mr. Irfan Ahmad**, Siemens, Pakistan formulated the draft recommendations for the way forward. On behalf of the Committee, Mr. Ali Mehmud presented the draft recommendations for the participants. Following interactive discussion among the participants and detailed deliberation, recommendations for achieving energy efficiency through energy audit interventions in the power sector were unanimously agreed upon.

Recommendations

9. The workshop adopted the following recommendations for the way forward in the perspectives of energy auditing and efficiency in the power sector of the SAARC Member States:

- a. Preparation of an SDF project for providing Energy Management and Services in the SAARC Member States. ENERCON will prepare the project proposal in consultation with SEC. Any other volunteer organization to contribute in this effort is most welcome.
- b. SEC should develop mechanisms such as the following for sharing best practices:
 - Directory of institutions dealing with Energy efficiency in MS.
 - Compilation of policies and laws related to energy efficiency to be placed on its website.
 - A SAARC workshop on sharing best practices in the energy efficiency of power sector may be organized.
 - NTPC-India holds an International conference on Operation and Maintenance (O&M) of Power sector on a regular basis every year in mid February. Possibility should be explored using this and other such forums in different SAARC MS for sharing best practices.
- c. A SAARC Energy Audit Toolkit should be developed by SEC.
- d. SAARC Member States should develop a cadre of Energy Management System Experts (ISO-50001) with the support of organizations such as SLEMA.
- e. Energy Audit and Efficiency improvement plan should be a part of the business plan of all utility companies including power generation, transmission and distribution in public and private sector. They should

earmark a reasonable budget to support energy efficiency programs within their respective regions.

- f. SEC should consider undertaking a pilot/demonstration project “Energy Conservation by Using Low Cost, High Efficiency Lighting Technologies in one or more SAARC Member States” through its program activities.

Valedictory Session

10. Mr. Arif Alauddin, Managing Director, ENRCON, Pakistan chaired the valedictory session. Through his address to the workshop participants, he emphasized that losses at all levels needs to be mitigated. He lauded the role of SEC in maximizing the energy efficiency efforts being undertaken in the Member States. He praised SEC for organizing this training workshop on such an important aspect and expected that SEC will continue playing its role with the same zeal and spirit.

11. Mrs. U. N. Weeraratne, Chief Engineer, Commercial, Ceylon Electricity Board, Sri Lanka offered vote of thanks on behalf of all the participants to SAARC Energy Centre and National Transmission and Dispatch Company for successful organizing of the workshop and managing high enthusiasm and involvement on the part of delegates sustained throughout the

Field Visit

12. On the concluding day of the workshop, SEC organized a field visit of the workshop participants to the NTDC 220 kV Grid Station located at Wapda Town, Lahore aiming at greater understanding of functioning of power transmission grid with respect to the energy audit and efficiency. In all, thirty participants visited the NTDC Grid Station and made it a highly valuable one through their enthusiastic interaction with the grid officials.

13. The workshop delegation was received by Mr. Abdul Quddus Khan, General Manager, Grid System Operation, NTDC along with his team whereas and Mr. Muhammad Akhtar, General Manager (Technical) NTDC joined on behalf of Managing Director, NTDC. A detailed visit to the 220 kV GIS Building, 132 kV AIS Switchyard, 220 kV Control Room Building was conducted by Mr. Amir Sattar, Resident Engineer, Grid station. The participants took keen interest in the 220kV GIS as well as 132kV AIS Switchyard and during the process also shared their own relevant experience.

14. The site visit was followed by a presentation by Mr. Muhammad Akhtar on “Energy Audit and Efficiency With Respect to Power Grid Stations” that included technical justification of the GIS Upgrading, inherited issues and the remedies undertaken specially the prompt preventive maintenance of the AIS part. He enthusiastically responded to the participants’ questions and comments. Afterwards, the workshop participants enjoyed refreshment arranged at the grid station.

15. In their concluding remarks, all the members praised the hard work managed by the grid officials to ensure its smooth working. The delegates were particularly impressed by the site of the 132kV AIS Switchyard which despite being commissioned in 1985 looked remarkably well maintained. Mr. Anil Kumar, a delegate from India, while praising the NTDC performance, declared the grid station as benchmark of operational performance and vowed to implement the NTDC practices in India.

Annexure –I

Programme
SAARC Training Workshop on Energy Audit and Efficiency
in the Power Sector
(27-29 August 2013, Lahore, Pakistan)

Monday, 26 August 2013	
Guests Arrive: Lahore, Pakistan	
Tuesday, 27 August 2013	
Inaugural Session	
Time	Description
0830-0900	Registration
0900-0915	Welcome address by Mr. Hilal A. Raza, Director, SAARC Energy Centre, Islamabad.
0915-0930	Inaugural address by the Chief Guest: Mr. Arif Alauddin, Managing Director, ENERCON, Pakistan
0930-1000	Coffee Break and Group Photo
Energy Audit - Concept and Potential	
Technical Session – I	
Chair: Dr. Rana Abdul Jabbar Khan , CEO, Faisalabad Electric Supply Company, Faisalabad	
1000-1040	“Energy Audit – Concept and Potential” Mr. Ronald Comester, Chief Engineer, Head of Demand Side Management Branch, Ceylon Electricity Board, Sri Lanka
1040-1100	“Sensitizing the Proactive Role of DISCOs for an Effective Energy Audit Program” Mr. Mohsin M. Syed, CEO, Hybrid Tecnic, Pakistan

1100-1140	<p>“Energy Audit of Generation and Distribution Systems / Nepalese Success Stories”</p> <p>Mr. Bishma Pandit, Energy Efficiency Expert, Nepal Energy Efficiency Programme, Nepal</p>
1140-1230	<p>Country Presentation: 10 minutes presentation by each Member State</p> <ul style="list-style-type: none"> • Afghanistan • Bangladesh • India • Nepal • Pakistan • Sri Lanka
1230-1245	Q & A
1245-1255	Closing Remarks by the Chair
1255-1400	Luncheon
<p>Tapping the Energy Efficiency Potential in Processes, Systems and Networks</p> <p>Technical Session – II</p>	
<p>Chair: Mr. Ronald Comester, Chief Engineer, Head of Demand Side Management Branch, Ceylon Electricity Board, Sri Lanka</p>	
1400-1440	<p>“Tapping the Energy Efficiency Potential in Processes, Systems and Networks”</p> <p>Mr. Nimal Perera, President, Sri Lanka Energy Managers Association (SLEMA)</p>
1440-1500	<p>“Energy Efficiency Through Latest Technologies for Lighting Applications”</p> <p>Mr. Ali Mehmud, Managing Director-Sunergy, Pakistan</p>
1500-1520	Tea Break
1520-1540	<p>“Prudent Practices for Improving Power Factor and Reducing Power Losses”</p> <p>Mr. Mohammad Akhtar, GM (Technical), National Transmission and Dispatch Company (NTDC)Pakistan</p>
1540-1600	Q & A
1600-1610	Closing Remarks by Chair

Welcome Dinner	
1930-2130	Welcome Dinner hosted by Director SEC
Wednesday, 28 August 2013	
Audit Process, Methodology and Automation - Best Industry Practices Technical Session – III	
Chair: Mr. Laique Ahmed Khan , CEO, Hyderabad Electric Supply Company, Hyderabad	
0830-0910	“Audit Process and Methodology – Sharing the Indian Success Story” Dr. M. G. Gharpure, Electrical Energy Audit Consultant, India
0910-0930	“Tools and Techniques for Energy Management and Control – Smart Grid Options” Mr. Muhammad Usman Arshad Khan, Business Support Fund (BSF), Federal Ministry for Finance, Government of Pakistan
0930-1010	“Audit Process, Methodology and Indian Case Studies“ Mr. K. K. Chakarvarti, Energy Economist, Bureau of Energy Efficiency (BEE), India/Mr. Anil Kumar, Assistant General Manager, National Thermal Power Corporation, India
1010-1025	Tea Break
1025-1045	“Reliability Centered Asset Management (RCAM) Aiming at Energy Efficient Distribution System” Mr. Irfan Ahmad, Siemens, Pakistan
1045-1100	Q & A
1100-1110	Closing Remarks by the Chair
Capacity Building on Energy Audit – What is Available and What is Required? Technical Session – IV	
Chair: Mr. Laique Ahmed Khan , CEO, Hyderabad Electric Supply Company, Hyderabad	
1110-1150	“Capacity Building – What is Available and What is Required in the SAARC Region?” Mr. Nimal Perera, President, Sri Lanka Energy Managers Association (SLEMA)

1150-1230	<p>“Capacity Building Framework for the SAARC Region – Power Distribution Utility Dimension”</p> <p>Dr. M. G. Gharpure, Electrical Energy Audit Consultant, India</p>
1230-1250	<p>“Capacity Building – What is Available and What is Required – the Pakistan Perspective”</p> <p>Mr. Asad Mahmood, ENERCON, Pakistan</p>
1250-1305	Q & A
1305-1315	Closing Remarks by the Chair
1315-1400	Luncheon
<p>Brainstorming on Development of Recommendations for Energy Audit and Efficiency in Power Sector of SAARC Region</p> <p>Technical Session – V</p>	
<p>Chair: Mr. Hilal A. Raza, Director, SAARC Energy Centre, Islamabad</p>	
1400-1515	<p>Considering and Prioritizing the Recommendations for An Effective Energy Audit and Efficiency in the SAARC Region</p> <p>Mr. Ali Mehmud, Managing Director– Sunergy, Pakistan representing Rapporteur Committee (Other two members: Mr. Ronald Comester, Chief Engineer, Head of Demand Side Management Branch, Ceylon Electricity Board, Sri Lanka and Mr. Irfan Ahmad, Siemens, Pakistan</p>
1515-1545	Networking Break
<p>Valedictory Session</p>	
<p>Chair: Mr. Arif Alauddin, Managing Director, ENERCON, Pakistan</p>	
1545-1605	<p>“Roadmap for Implementation of the Best Industry Practices on Energy Auditing and Efficiency in the SAARC Region”</p> <p>Mr. Hilal A. Raza, Director, SAARC Energy Centre, Islamabad</p>
1605-1625	Address by the Chief Guest
1625-1640	Distribution of Certificates
1640-1645	Vote of thanks by (Mrs. U. N. Weeraratne , Chief Engineer, Commercial, Ceylon Electricity Board, Sri Lanka on behalf of all participants
1645-1715	Refreshments/Group Photo

Thursday, 29 August 2013

Field Visit: **NTDC 220 kV Grid Station, Wapda Town, Lahore**
Resource Person: **Mr. Amir Sattar, Resident Engineer, Wapda Town Grid Station, Lahore**

0900	Departure
1000-1200	Overview of Energy Audit and Efficiency with respect to Power Grid Stations
1200-1300	Arrival and Luncheon at Avari Hotel, Lahore

Annexure –II**SAARC Training Workshop on Energy Audit & Efficiency in the Power Sector**

27-29 August 2013, Lahore, Pakistan

List of Participants

#	MS total	Member State	Name, Designation	Contact Info.
1	1	Afghanistan	Mr. Amanullah Ghalib, Director of Renewable Energy, Ministry of Energy and Water	amanghalib@hotmail.com Mobile: +93 794 444443
2	2		Mr. Tahirzada Zabiullah, Deputy Program Director of Energy of GIZ-ESRA, Ministry of Energy and Water	zabiullah.tahirzada@giz.de Mobile: +93 700660127
3	1	Bangladesh	Engr. Qamber Anjum Sharhan Sadique, Deputy Director (Sustainable Energy), Power Cell, Power Division	gassadique@gmail.com dd.sus@powercell.gov.bd Mobile: +88 01716 898106 Phone: +88 02 9566099 Fax: +88 02 9554664
4	2		Mr. Md. Giash Uddin Mughal, Senior Assistant Secretary, Power Division	giashuddin12@gmail.com Mobile: +88 01716 169634 Phone: +88 02 9574409 Fax: +88 02 9574822
5	1	India	Shri Anil Kumar, Assistant General Manager, (Energy Efficiency Management Group), Nation Thermal Power Corporation, Ministry of Power	anilkumar01@ntpc.co.in Mobile: +9650994311
6	1	Pakistan	Dr. Muhammad Asghar Saqib, Associate Professor, Department of Electrical Engineering, UET, Lahore.	saqib@uet.edu.pk Phone: +92 4299029229
7	2		Dr. Sabahat Arif, Architect and Associate Professor, Architectural	sabahatarif@hotmail.com Mobile: +92 322-8486131

#	MS total	Member State	Name, Designation	Contact Info.
			Engineering and Design, University of Engineering & Technology, Lahore.	Phone: +92 42 99029285
8	3		Mr. Zafar Abbas, Electric Inspector Multan Region, Multan	zafarabbas5@yahoo.com Mobile: +92 321 6674518 Phone: +92 42 99212797 Fax: +92 42 9212796
9	4		Mr. Sohail Mumtaz Bajwa, Addl. Manager Design, NTDC	sohailbajwa@hotmail.com Phone: +92 42 99202190 Fax: +92 42 99202502
10	5		Ms. Mamoona Shaheen, Dy. Manager Design, NTDC	Phone: +92 42 99202190 Fax: +92 42 99202502
11	6		Ms. Sarah Sharif, Dy. Manager Design, NTDC	Phone: +92 42 99202190 Fax: +92 42 99202502
12	7		Engr. Abdul Rehman Tariq, CE-II (Procurement) CPPA, NTDC	Phone: +92 42 99201489 Fax: +92 42 99201488
13	8		Engr. Javaid Naseeb Malik, Addl. Chief Engineer (CPPA), NTDC	Phone: +92 42 99203515 Fax: +92 42 99201179
14	9		Mr. Ghazanfar Ali Chengazi, Manager (Planning and Engineering) Quetta Electric Supply Company (QESCO)	Mobile: 0333 7804018
15	10		Mr. Raham Ali Otho, Director PDC / Focal Person Energy Conservation, HESCO	ps_oeohesco@yahoo.com Phone: 9260025 Fax: 9260361
16	11		Mr. Ghulam Sarwar Dars, Liaison Officer, HESCO	ps_oeohesco@yahoo.com Phone: 9260025 Fax: 9260361
17	12		Mr. Abdul Rehman, Operation Director, LESCO	Phone: +92 42 99204820

#	MS total	Member State	Name, Designation	Contact Info.
18	13		Mr. Shahid Haider, Deputy Manager, O&M (Dist.) LESCO HQs	Phone: +92 42 99204820
19	14		Mr. Muhammad Afzal, Director (Energy Conservation) G-35 Wapda House Lahore	dgemc_pepco@yahoo.com Phone: +924299202488 Fax : +924299202637
20	15		Mr. Muhammad Rashid, SDO (Operation), Islampura Sub Division, Faisalabad (FESCO)	Phone: +92 41 9220370 Fax: +92 41 9220445
21	16		Mr. Imran Khan, Deputy Secretary, Department of Energy, Govt. of Balochistan	Phone: 081-9203205
22	17		Mr. Munir Ullah, Manager (CM&O), PESCO	Phone: +92 91 9212230 Fax: +92 91 9212024
23	18		Mr. Asad Mehmood, ENERCON	Mobile: +92 333 5501855
24	19		Dr. Khawaja Riffat Hassan, System Protection, NTDC	Mobile: +92 300 4467390 Mobile: +92 331 4278733
25	20		Mr. Mohammad Akhtar, GM (Technical), NTDC	Mobile: +92 347 4442780 Mobile: +92 346 4442780 Phone: +92 42 99202185
26	21		Mr. Fayyaz Hussain Siddiqui, Director (Load Management), IESCO	Mobile: +92 300 5209559 Phone: +92 51 9252937-39 Direct: +92 51 9252917 Fax: +92 51 9252927
27	22		Mr. Muhammad Akram Chaudhry, Manager (TS) M&T-II, MEPCO	Mobile: +92 300 6373780 Mobile: +92 345 8189293 Phone: +92 61 9210380 Fax: +92 61 9210350
28	23		Eng. Karim Baksh Shaikh,	Mobile: +92 345 2176345

#	MS total	Member State	Name, Designation	Contact Info.
			Additional Secretary Energy, Govt. of Sindh, Karachi.	Phone: +92 021 99204275
29	24		Mr. Amir Sattar, Resident Engineer, NTDC, Wapda Town Grid Station Lahore	Mobile: +92 347 7772206
30	25		Mr. Habib Ullah, Deputy Director Planning (P&E), GEPCO	Mobile: +92 335 4742483
31	26		Mr. Tariq Nasrullah Malik, Additional Manager CPPL	tmalik196401@yahoo.com
32	27		Mr. Amir A. Bukhari, JICA	
33	28		Mr. Chhagan Lal, NTDC, Wapda	
34	29		Mr. Muhammad Azfar Ullah, NTDC, Wapda	
35	30		Mr. Akhlaq Ahmed Butt, NTDC, Wapda	
36	31		Mr. M. Omer Khan, NTDC, Wapda	
37	32		Mr. Mohammad Sajjad Moghal, USAID, Pakistan	
38	33		Ms. Javaria Shehzad, NTDC, Wapda	Mobile: +92 321 4852078
39	34		Ms. Sadia Murshad, NTDC, Wapda	Mobile: +92 323 4755428
40	35		Mr. Salman Aizad, MD PPDB, Govt. of Punjab, Lahore.	Mobile: +92 322 6004567
41	1	Sri Lanka	Mrs. U. N. Weeraratne Chief Engineer, Commercial,	cecomwps2@ceb.lk Mobile: +94 777 211 892

#	MS total	Member State	Name, Designation	Contact Info.
			Ceylon Electricity Board	Phone: +94 112 880 657 Fax: +94 112 880 694
42	2		Ms. N. R. Ramasinghe Electrical Engineer, Energy Management, Ceylon Electricity Board	<u>eeemdd4@ceb.lk</u> Mobile: +94 714 301 243 Phone: +94 114 204 014 Fax: +94 114 204 015

Annexure –I**List of Resource Persons**

#	Session	Name, Designation	Topic	Contact
A.	Technical Session – I	Mr. Ronald Comester, Chief Engineer, Head of Demand Side Management Branch, Ceylon Electricity Board	“Energy Audit – Concept and Potential”	Mobile: +94 71 411 5596 Residence: +94 31 227 4188 ronaldcomester@gmail.com
		Mr. Mohsin M. Syed, CEO, Hybrid Tecnic, Pakistan	“Sensitizing the Proactive Role of DISCOs for an Effective Energy Audit Program”	Mobile: +92 3008413650 mohsinht@yahoo.com hybrid@mobilink.blackberry.com
		Mr. Bhisma Pandit, Energy Efficiency Expert, Nepal Energy Efficiency Programme, Nepal	“Energy Audit of Generation and Distribution Systems / Nepalese Success Stories”	Phone: +9779851088900 panditbhisma@gmail.com
B.	Technical Session – II	Mr. Nimal Perera, President, Sri Lanka Energy Managers Association (SLEMA), Sri Lanka	“Tapping the Energy Efficiency Potential in Processes, Systems and Networks”	nimalfrpr@gmail.com nimal_pr@sltnet.lk
		Mr. Ali Mehmud, Managing Director–Sunergy, Pakistan	“Energy Efficiency Through Latest Technologies for Lighting Applications”	ali.mehmud@GlobalSunergy.com Mobile: +92 3005551259
		Mr. Mohammad Akhtar, General Manager (Technical) NTDC, Pakistan	“Prudent Practices for Improving Power Factor and Reducing Power Losses”	Office: +92 42 99201020-2283 md@ntdc.com.pk
C.	Technical Session – III	Dr. M. G. Gharpure, Electrical Energy Audit Consultant, Yajna Fuel	“Audit Process and Methodology – Sharing the Indian Success	Mobile: +91 996 941 0594 Landline: +91 22 254 24 983 / 254 03 070 / 253 84 681

#	Session	Name, Designation	Topic	Contact
		Services India	Story”	Email: yajna.fuel86@gmail.com response@yajnafuelindia.com
		Mr. Muhammad Usman Arshad Khan, Business Support Fund (BSF), Federal Ministry for Finance. Government of Pakistan	“Tools and Techniques for Energy Management and Control – Smart Grid Options”	
		Mr. K. K. Chakarvarti, Energy Economist, Bureau of Energy Efficiency (BEE), India/ Mr. Anil Kumar, Assistant General Manager, National Thermal Power Corporation, India	“Audit Process, Methodology and Indian Case Studies“	
		Mr. Irfan Ahmad, Siemens, Pakistan	“Reliability Centered Asset Management (RCAM) Aiming at Energy Efficient Distribution System”	Mobile: +92 3222224026 irfan.ahmad.ext@siemens.com
D.	Technical Session – IV	Mr. Nimal Perera, President, SLEMA	“Capacity Building – What is Available and What is Required in the SAARC Region?”	nimalfrpr@gmail.com nimal_pr@sltnet.lk
		Dr. M. G. Gharpure, Electrical Energy Audit Consultant, Yajna Fuel Services, India	“Capacity Building Framework for the SAARC Region – Power Distribution Utility Dimension”	Mobile: +91 996 941 0594 Landline: +91 22 254 24 983 / 254 03 070 / 253 84 681 Email: yajna.fuel86@gmail.com response@yajnafuelindia.com
		Mr. Asad Mahmood, ENERCON, Pakistan	“Capacity Building – What is Available and What is Required – the Pakistan Perspective”	Mobile: +92 333 550 1855 Email: asadm_46@yahoo.com