



**FORM IV**  
**(Refer regulation 7(2))**  
**Bureau of Energy Efficiency**  
**REGISTER CONTAINING NAMES OF OFFICES AND FIRMS OF ACCREDITED**  
**ENERGY AUDITORS**

Serial Number (AEA- 0115)		As on (26/11/2013)	
<b>A.</b>			
1	Name of accredited energy auditor	Ray Bimalendu Chaudhuri (alias R. B. Chaudhuri)	Photograph of the energy auditor  
2	Father's name	Late Rai S. N. Chowdhury	
3	Date of certification as Energy Manager	18.11 2005.	
4	Date of passing the examination in "Energy Performance Assessment for Equipment and Utility Systems"	Not Applicable.	
5	Examination Registration Number of (i) Energy Manager/Auditor (ii) "Energy Performance Assessment for Equipment and Utility Systems"	'CEA' Regn. No. EA 2478  Not Applicable.	
6	Certificate Registration Number of (i) Energy Manager/Auditor (ii) "Energy Performance Assessment for Equipment and Utility Systems"	Not Applicable.	
7	Date of issue of accreditation certificate	( to be filled by BEE)	
<b>B. Information in respect of trade name or firms' name</b>			
8	Trade name / firms name under which energy audit is proposed to be conducted	Bicon Consultants Pvt. Ltd.	
9	Date of accreditation as accredited energy auditor	( to be filled by BEE)	
10	Type of firm/ private/ Government / NGO etc.	Private Limited.	

11	Name of contact person along with designation, address, telephone, mobile and fax number along with STD codes and email address ( All details compulsory)	a. R. B. Chaudhuri – Director, (M): 098306 61115, 098301 70059. b. J. K. Ghosh – Director, (M): 98310 70078. Both: C/o. Bicon Consultants Pvt. Ltd., 59/A, Puddapukur Road, Kolkata – 700 020. Phone: 033-2485 2293, 2486 3200. Fax: 033 2840 4813. E-mail: bicon01@dataone.in or, bicon59a@gmail.com or, rbchaudhuri@gmail.com.
12	Professional postal address with Pin Code of the accredited energy auditor	Bicon Consultants Pvt. Ltd., 59A, Puddapukur Road, Kolkata – 700 020.
13	E-mail address	bicon01@dataone.in or, bicon59a@gmail.com, or, rbchaudhuri@gmail.com
14	Telephone numbers . with STD Code (R) (O) Mobile no:	033-2475 4515, 2455 3916, 6415 8315. 033-2485 2293, 2486 3200. 098306 61115, 98301 70059.
15	Year of establishment of the trade name / firms' name for undertaking the energy audit	2001.
16	Year of commencement of energy audit of the firm	2002.
17	Whether any certificate to support the excellence in the system has been obtained (ISO etc.)	No.
18	No. of branch offices  (List of complete addresses including heads of all branch offices with telephone, fax and email addresses)	None.
<b>C</b>	<b>Details of Associated Energy Experts</b>	
19	Number of resource persons available	Fourteen (including one support staff).
20	I. Number. of full-time energy auditors in position with work experience of all energy auditors associated with the firm	Two – R.B. Chaudhuri & J.K. Ghosh – Directors (Experience in brief is attached in Annexure – 1)
	II. No. of part-time energy auditors in position during the current year / previous year associated with the energy auditor / energy auditor's firms.	Four – Messers. Anjan Majumdar, Pradip Goldar, Subhranshu Gangopadhyay & Tuhin Kumar Roy (Experience in brief is attached in Annexure – 1)

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21	Sectors in which the energy auditor/ energy audit firm has conducted energy audits since inception	<ul style="list-style-type: none"> <li>a. Automobile,</li> <li>b. Chemical &amp; Process Industry,</li> <li>c. Commercial Buildings, Hospitals, Hotels,</li> <li>d. General Engineering, Fabrication,</li> <li>e. Iron &amp; Steel, Foundry, Metallurgical Process Industry,</li> <li>f. Railways,</li> <li>g. Rubber Belting,</li> <li>h. Tea,</li> <li>i. Thermal Power Station, etc.</li> </ul> (Please refer list of clients in Annexure – 2).
22	Subject wise expertise	
(a)	Energy audit process system (list sectors) - If no energy audit has been carried out of the process system and parameters, please list nil. Bureau of Energy Efficiency will be calling for detailed information in case agency has listed its energy audit expertise in the process systems	There are six industry specialists in the team (please refer Annexure -1). Through our wide contacts, other specialists are involved from time to time. Some examples are: <ul style="list-style-type: none"> <li>a. <u>UAL Bengal Ltd.</u>: for solar drying of asbestos sheets.</li> <li>b. <u>Tata Metaliks Ltd.</u>: for mechanization of coal/coke handling system for reducing losses &amp; wastages.</li> <li>c. <u>Tata Sponge Iron Ltd.</u>: to study and comment on process parameters to reduce losses &amp; wastages of coal &amp; coke.</li> <li>d. <u>Indian Oil Corporation Ltd.</u>: for introduction of variable speed drive for High Tension Pump Motors for eliminating throttling &amp; reducing power consumption.</li> </ul>
(b)	Energy audit thermal utility system (list sectors)	<ul style="list-style-type: none"> <li>a. Asbestos Roofing Sheet.</li> <li>b. Galvanized Iron Roofing Sheet.</li> <li>c. Iron &amp; Steel – Foundry, Metallurgical Process Industry.</li> <li>d. Rubber Belting, Rubberized Coir Industry.</li> <li>e. Thermal Power Station.</li> <li>f. Tea.</li> </ul>
(c)	Energy audit electrical utility system (list sectors)	All the nine sectors listed under sl. no. 21 above.
23	Instruments available	Please refer list of instruments in Annexure – 3.
	(a) Electrical (list the name of the instruments)	Power Analyzer, Power Quality Analyzer, Clip-on type Digital Meter, Clip-on type Analog Power Factor Meter, Neutral Box, Non-contact Live Line Voltage Detector, Insulation Tester, and Digital AC Leakage Current Tester.
	(b) Thermal (list the name of the instruments)	Contact & Non-contact type Digital Temperature Gauge, Portable Digital Thermometer, and Flue Gas analyzer.
24 (i)	Details of training programme/ seminars/ workshops conducted during the last 3 years in the field of energy efficiency / energy audit	Awareness programmes are conducted during presentation of reports in industries, where energy audits are carried out.
(ii)		
(iii)		
<b>D</b>	<b>Remarks( if any)</b>	
	Have staff and associates with expertise in diverse fields particularly due to long exposure in industry and consultancy. Have also carried out energy audits in various sectors as listed in Annexure – 2. Had worked with Iacon Pvt. Ltd., where there was a separate Energy Cell way back in 1960's.	

(Note: Responsibility of the authenticity of the above information rests with the concerned energy auditor/energy auditing agency.)\*



## ANNEXURE - 1

### BRIEF PROFILES OF RESOURCE PERSONS ASSOCIATED WITH 'BICON'

#### A. Full-time Certified Energy Auditors

1. R.B.Chaudhuri – B.E. (Mech.), F.I.V., Ch. Engr., with background of industrial engineering, Energy Auditor Certified by Bureau of Energy Efficiency ('B.E.E. Regn. No. EA 2478) and over 45 years' experience in industry and consultancy. He worked for manufacturing organisations like Hindustan Lever Ltd., Paharpur Cooling Towers Ltd., SWIL Ltd., consultancy firms like IBCON Pvt. Ltd., A.F. Ferguson & Co. (Management Consultancy Division), Search Services Pvt. Ltd., etc. rising to the level of Assistant General Manager. He has so far conducted 42 energy audits.
2. J.K.Ghosh – B.E. (Mech.), A.I.C.W.A., M.I.E., F.I.V, Chartered Engineer, Energy Auditor Certified by Bureau of Energy Efficiency ('B.E.E. Regn. No. EA 2479) with background of industrial engineering and over 45 years' experience, much of which was in industry, rising to the level of General Manager. He worked for organisations like G.K.W. Ltd., Shree Digvijay Cement Company, Braithwaite & Co. Ltd. He has so far conducted 42 energy audits.

#### B. Part-time Certified Energy Auditors

1. Anjan Majumdar – A.M.I.E.(Elec.), Ch. Engr., PGDEM (Post-Graduate Diploma in Energy Management), Energy Auditor Certified by Bureau of Energy Efficiency ('B.E.E. Regn. No. EA 0167) and a Holder of Electrical Supervisory Certificate of Competency for HT and EHT Lines. He was with the CESC Ltd. for 13 years, rising to the level of Assistant Engineer. He has carried out over 100 energy audits in Power Sector, Engineering Industry, Process Industries, Commercial Buildings etc. He is a permanent member of 'BICON's Energy Audit team.
2. Prodip Goldar - A.M.I.E.(Elec.), Certificate of Proficiency as Boiler Operation Engineer (B.O.E.) from Directorate of Boiler, Govt. of W.B., Energy Auditor certified by Bureau of Energy Efficiency (B.E.E. Regn. No. EA 11726) with more than 19 years' experience in operation and maintenance of thermal power plants. He has carried out four energy audits in Engineering Industry, Power Plants and Process Industry.
3. Subhrangsu Gongopadhyay – B.E. (Mech), Certificate of Proficiency as Boiler Operation Engineer (B.O.E.) from Directorate of Boiler, Govt. of W.B., Energy Auditor certified by Bureau of Energy Efficiency (B.E.E. Regn. No. EA 11727) with around 22 years' experience in operation, maintenance and internal audit systems of thermal power plants. He has carried out four energy audits in Engineering Industry, Power Plants and Process Industry.
4. Tuhin Kumar Roy - A.M.I.E.(Mech.), Certificate of Proficiency as Boiler Operation Engineer (B.O.E.) from Directorate of Boiler, Govt. of W.B., Energy Auditor certified by Bureau of Energy Efficiency (B.E.E. Regn. No. EA 6800) with around 21 years' experience in operation and maintenance of thermal power plants. He has carried out four energy audits in Engineering Industry, Power Plants and Process Industry.

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## ANNEXURE - 1

### BRIEF PROFILES OF RESOURCE PERSONS ASSOCIATED WITH 'BICON'

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#### C. Part-time Energy Audit Technician

Mrituyunjoy Patra – Certificate holder of 'Electrical Grade 1 & 2' from Licencing Board, Power Department, Govt. of West Bengal. He has six years' experience with specialization in instrumented energy audit measurements, has participated in around 52 energy audits and is a regular member of 'BICON's Energy Audit team.

#### D. Part-time Industry/Sector Specialists

##### 1. Specialist - Power Plant

Subhendu Roy Choudhury – B. E. E. (J.U.), DIC – Electrical Machines and Power Systems at Imperial College of Science & Technology, University of London, Passed Post Graduate Certificate Course on Energy Management & Energy Audit from School of Energy Studies (Jadavpur University). He is a Chartered Engineer, Fellow of the Institution of Engineers (India), Fellow of Indian Institution of Energy Auditors. He is an Accredited Energy Auditor of the Govt. of West Bengal. He is also a visiting professor with the Jadavpur University and its School of Energy Studies and National Power Training Institute, Durgapur.

Mr. Roy Chowdhury had worked for 33 years essentially in the field of electricity generation, transmission and distribution for companies like CESC Ltd., Indian Aluminium Co. Ltd., Crompton Greaves Ltd. etc.

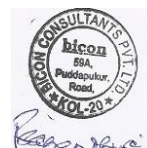
In the course of consultancy since 1993, he regularly carried out Energy Audit for:

- a. CESC Ltd- Mulajore, New Cossipur & Titagarh (240MW) Thermal Power Plants,
- b. Ananda Bazar Patrika Ltd.,
- c. Advanced Medicare & Research Institute,
- d. Bata India Ltd.,
- e. Gulmohar Paper Mills Ltd.,
- f. Hindustan Motors Ltd.,
- g. Indian Association for Cultivation of Science,
- h. Woodlands Hospital & Nursing Home, etc.

##### 2. Specialist - Heating, Ventilation & Air Conditioning ('HVAC') System

S. Chakraborty – B. E. (Mech.) and with 29 years' experience in industry and consultancy, in the field of Design, Optimization, Equipment Selection, Project Management, Maintenance and Trouble Shooting for Air Conditioning, Heating, Air Handling and Ventilation Systems. Mr. Chakraborty had worked with Blue Star for 15 years in construction and service division rising to the level as Area Manager-Services (ER).

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**ANNEXURE - 1**  
**BRIEF PROFILES OF RESOURCE PERSONS ASSOCIATED WITH 'BICON'**

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**3. Specialist - Furnace**

- a. K. N. Shukla – An expert with over 41 years' experience of design, manufacturing and modernisation of furnaces – both electrically operated and fuel oil fired.
- b. D.J. Gupta – A metallurgical engineer with 41 years' experience in design, manufacture of furnace, producer gas plants and thermal engineering with organisations like G.K.W. Ltd., Bengal Linn Ltd., Westerwork Engineers etc. and thereafter in independent capacity.

**4. Specialist – Foundry & Metallurgy**

G. Banerjee – A Metallurgical Engineer with over 45 years' experience in foundry and melting practices with organisations like Addison & Co., TAYO Ltd., Machinery Manufacturers Corpn., Metflow Corporation, R.B. Agarwalla & Co. etc.

**5. Specialist - Instrumentation**

U. P. Dutta – B.Sc., M.I.E., Chartered Engineer, P.G. Dipl. in S.Q.C., with over 37 year's experience in defence industry, National Instruments Ltd and consultancy.

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**ANNEXURE - 2**  
**LIST OF ENERGY AUDIT ASSIGNMENTS CARRIED OUT**  
**BY BICON CONSULTANTS PVT. LTD. SINCE INCEPTION**

1. Arora Matthey Ltd. (Noble Metal & Components) (\*).
2. Assam Roofing Ltd. (G.I. Roofing Sheet) (\*),
3. B & A Ltd. (Residential Building) (\*).
4. B & A Ltd. (Mokrung Tea Factory) (\*).
5. Bhartiya Reserve Bank Note Mudran Pvt. Ltd. (Currency Note Printing) – 2 audits.
6. Birla Buildings Ltd. (Office Building).
7. Calcutta Medical Research Institute (Speciality Hospital) (\*).
8. DPSC Ltd. (Power Plant, Transmission & Distribution Centres) (\*).
9. Eastern Railways – Bandel Power House (Loco Shed, Colony etc.) – 2 audits – 1 Detailed(\*).
10. EPCOS Ferrites Ltd. (Soft Ferrite Cores) (\*).
11. Gateway Guest House & Star Village Holiday Resort Pvt. Ltd. (Resort) (\*).
12. Gontermann-Peipers (India) Ltd. (Roll Foundry) – 5 audits - 2 Detailed(\*).
13. Himrag Coir Industries Pvt. Ltd. (Coir Mattress).
14. Hindusthan Engineering Industries (Foundry & Engineering) (\*).
15. Hindusthan Engineering Industries Ltd. (Wagon Building, Points & Crossings) (\*).
16. Hindustan Motors Ltd. (Automobile).
17. Indian Oil Corporation Ltd. (Pipelines Division), Haldia – 3 Audits – 1 Detailed (\*).
18. JIS College of Engineering (College Building).
19. Kesoram Spun Pipes & Foundries (Spun Cast Iron Pipe Plant).
20. Kothari Medical Centre (Speciality Hospital) (\*).
21. Modern High School for Girls (School Building & Exhibition Hall) (\*).
22. Orient Fan – Prop. Orient Paper & Industries Ltd. (Fan)(\*).
23. Paharpur Cooling Towers Ltd. (Cooling Towers & Heat Exchangers)- 2 units (\*).
24. Phoenix Yule Ltd., Kalyani (Textile & Steel Belting) (\*).
25. Reserve Bank of India, Kolkata (Commercial Building) (\*).
26. RRL Steels Ltd. (Steel Foundry).
27. SIEL Tizit Ltd. (Tungsten Carbide Tips & Tools) (\*).
28. Tata Metaliks Ltd. (Pig Iron & Power) (\*),
29. Tata Sponge Iron Ltd. (Sponge Iron) (\*).
30. UAL Bengal Ltd. (Asbestos Sheet)- 2 Detailed Audits (\*).
31. Vesuvius India Ltd. (Refractory).
32. Waldies Ltd. (Industrial Heavy Chemicals) (\*).

Note: (\*) Signifies Detailed Energy Audit.

## ANNEXURE - 3

## LIST OF ENERGY AUDIT INSTRUMENTS AVAILABLE TO BICON CONSULTANTS PVT. LTD.

Sl. No.	Description of Instrument	Capacity
1	Clip-on-type Power Analyzer – Single/Three Phase, Split CT, Model – 2740 & 2745, Make – Kusum-MECO	600V, 1000A, PF.= 0.2-1.0, 600KW
2(*)	Micro-processor based 3-phase Power Quality Analyzer with software facility, Model – 3197, Sl. No. 080228076, Make – HIOKI, for both HT/LT measurements	Upto 3 MVA
3	Clip-on type Digital Clamp Meter, Make – Metravi, Model DT-1250 for AC/DC Voltage	V = 400mv to 1000V, DC Amps. = 40ma to 100ma, AC Amps = 40ma to 1000 Amps, Res. = 400Ω to 400 Kilo-Ω, Frequency = 40Hz to 20MHZ.
4	Clip-on type Analog Power Factor Meter, Make - Cambridge Instruments & Engg. Co.	PF = -1 to + 1
5	Neutral Box, Make – Cambridge Instruments & Engg. Co. for 3 phase P.F.	-
6	Non-contact Live Line Voltage Detector (Portable), Make – VAR Tech	Upto 240V
7	Insulation Tester – Analog Crank generator type, Make – Cambridge Instruments & Engg. Co., Model – CIE 444.	1000V
8	Digital AC Leakage Current Tester, Make – Metravi, Model – 4571	400ma, 4/40/100Amps
9(*)	Digital Vane Type Anemometer, Make – Prova, Model – AVM-01, Sl. No. 04400551	40metres/sec.
10	Contact & Non-contact type Digital Tachometer, Make – Systems & Meco/Kusum	0 – 9999 RPM
11	Contact & Non-contact type Digital Temperature Gauge, Make – Metravi MECO/Kusum, Model – DTM-900-1 (*) & KM-IR-L-300	(-) 20 <sup>0</sup> C – 1300 <sup>0</sup> C & (-) 25 <sup>0</sup> C – 300 <sup>0</sup> C
12	Portable Digital Thermometer, Make – Sonit make and Metravi (*) make Sl. No.04369638	(-) 50 <sup>0</sup> C – 1200 <sup>0</sup> C
13	Digital Lux Meter, Make – Metravi, , Model – DT-1330	0 – 50000 Lux (2 nos.)
14	Digital Hygrometer, Make – Meco-Kusum, Model – PM- 918	-
15	Digital Manometer, Make – Lutron, Model – 9100HA	Mbar, Psi, kg/cm <sup>2</sup> , mm Hg, inch Hg
16	Others: Digital Stop Watch/Timer, Measuring Tape (15Metres)	-
17(*)	Lux meter – Kusum Meco make, Sl. No. 981210.	
18(*)	Flue Gas Analyser - Summit make, Sl. No. 10061920001	

Note: (\*) Calibration Certificates (5 nos.) from 'NABL' accredited laboratory – Alkem Laboratories (I) forwarded herewith under Enclosures 11A to 11E.

