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

<table>
<thead>
<tr>
<th>Serial Number (AEA- 0106)</th>
<th>As on-(26/11/2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A.</strong></td>
<td></td>
</tr>
<tr>
<td>1 Name of accredited energy auditor</td>
<td>Virendra Raghuram (R.VIRENDRA)</td>
</tr>
<tr>
<td>2 Father’s name</td>
<td>B.T.Raghuram Reddy</td>
</tr>
<tr>
<td>3 Date of certification as Energy Manager</td>
<td>06.11.2006</td>
</tr>
<tr>
<td>4 Date of passing the examination in “Energy Performance Assessment for Equipment and Utility Systems”</td>
<td>April 2006</td>
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</table>
| 5 Examination Registration Number of  
  (i) Energy Manager  
| 6 Certificate Registration Number of  
  (i) Energy Manager  
| 7 Date of issue of accreditation certificate ( to be filled by BEE) |                     |

<table>
<thead>
<tr>
<th>B.</th>
<th>Information in respect of trade name or firms’ name</th>
</tr>
</thead>
</table>
| 8  | Trade name / firms name under which energy audit is proposed to be conducted | National Productivity Council  
  10-E, Gaganvihar, M.J.Road, Hyderabad – 500 001 |
<p>| 9  | Date of accreditation as accredited energy auditor ( to be filled by BEE) |                     |</p>
<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
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<tr>
<td>10</td>
<td>Type of firm/ private/ Government / NGO etc.</td>
<td>GOVERNMENT</td>
</tr>
<tr>
<td>11</td>
<td>Name of contact person along with designation, address, telephone, mobile and fax number along with STD codes and email address (All details compulsory)</td>
<td>Director General, presently, Dr. S.K. Chakravorty, Dy. Director General Utpadakta Bhavan, 5-6 Institutional Area, Lodhi Road New Delhi – 110 003 Phone: 011-24690331; Fax: 011-24615002 Email: <a href="mailto:sk.chakraborty@npcindia.gov.in">sk.chakraborty@npcindia.gov.in</a></td>
</tr>
<tr>
<td>12</td>
<td>Professional postal address with Pin Code of the accredited energy auditor</td>
<td>National Productivity Council, 10-E, Gaganvihar, M.J.Road Hyderabad – 500 001</td>
</tr>
<tr>
<td>13</td>
<td>E-mail address</td>
<td><a href="mailto:npc.ap@nic.in">npc.ap@nic.in</a></td>
</tr>
<tr>
<td>14</td>
<td>Telephone numbers . with STD Code (R) (O) Mobile no:</td>
<td>040-27173528 040-24733473 0-9705540081</td>
</tr>
<tr>
<td>15</td>
<td>Year of establishment of the trade name / firms’ name for undertaking the energy audit</td>
<td>1958 as National Productivity Council, under Societies Act, under Ministry of Commerce &amp; Industry, Govt. of India</td>
</tr>
<tr>
<td>16</td>
<td>Year of commencement of energy audit of the firm</td>
<td>1976</td>
</tr>
<tr>
<td>17</td>
<td>Whether any certificate to support the excellence in the system has been obtained (ISO etc.)</td>
<td>YES (ISO 9001:2008); NPCs Hyderabad Regional Professional Management Group</td>
</tr>
<tr>
<td>18</td>
<td>No. of branch offices (List of complete addresses including heads of all branch offices with telephone, fax and email addresses)</td>
<td>One (1) Head Quarters at New Delhi One (1) Training Institute (Dr. Ambedkar Institute of Productivity at Chennai Thirteen (13) Regional Directorates List of all NPC Offices with addresses, Names of Heads, Telephone Fax and Email– appended as Annexure-1)</td>
</tr>
<tr>
<td>C</td>
<td>Details of Associated Energy Experts</td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>-------------------------------------</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Number of resource persons available</td>
<td>110 (Consultants)</td>
</tr>
<tr>
<td>20</td>
<td>I. Number. of full-time energy auditors in position with work experience of all energy auditors associated with the firm</td>
<td>40 Energy Auditors/Consultants) List (along with brief CVs–appended as Annexure-2)</td>
</tr>
<tr>
<td></td>
<td>II. No. of part-time energy auditors in position during the current year / previous year associated with the energy auditor / energy auditor’s firms.</td>
<td>About 6</td>
</tr>
<tr>
<td>21</td>
<td>Sectors in which the energy auditor/energy audit firm has conducted energy audits since inception</td>
<td>See List appended as Annexure-3</td>
</tr>
<tr>
<td>22</td>
<td>Subject wise expertise</td>
<td>See List appended as Annexure-4</td>
</tr>
<tr>
<td></td>
<td>(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</td>
<td>See List appended as Annexure-5</td>
</tr>
<tr>
<td></td>
<td>(b) Energy audits in thermal utility systems (list sectors)</td>
<td>See List appended as Annexure-6</td>
</tr>
<tr>
<td></td>
<td>(c) Energy audit electrical utility system (list sectors)</td>
<td>See List appended as Annexure-7</td>
</tr>
<tr>
<td>23</td>
<td>Instruments available</td>
<td>See List appended as Annexure-8</td>
</tr>
<tr>
<td></td>
<td>(a) Electrical (list the name of the instruments)</td>
<td>See List appended as Annexure-9</td>
</tr>
<tr>
<td></td>
<td>(b) Thermal (list the name of the instruments)</td>
<td>See List appended as Annexure-10</td>
</tr>
<tr>
<td>24</td>
<td>Details of training programme/seminars/workshops conducted during the last 3 years in the field of energy efficiency/energy audit</td>
<td>See List appended as Annexure-11</td>
</tr>
</tbody>
</table>
Remarks (if any)

- Have 33 years of experience in Energy Auditing, Conservation and Management.
- Was 'Controller of Examinations' and Head of Dr. Ambedkar Institute of Productivity, NPC, Chennai, which conducts the Energy Managers/Energy Auditors National Certification Examinations on behalf of Bureau of Energy Efficiency, New Delhi.

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

### Annexure-1

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name / Email Id</th>
<th>Mobile Number</th>
<th>Telephone Nos.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Office</td>
</tr>
<tr>
<td>S/Shri/Ms.</td>
<td></td>
<td></td>
<td>011-24618480</td>
</tr>
<tr>
<td>1.</td>
<td>Shri N.C. VASUDEVAN, DG <a href="mailto:nc.vasudevan@npcindia.org">nc.vasudevan@npcindia.org</a></td>
<td>0-98109-09373</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Dr. S.K. Chakravorty, DDG <a href="mailto:sk.chakraborty@npcindia.org">sk.chakraborty@npcindia.org</a></td>
<td>0-98181-64852</td>
<td>011-24607330</td>
</tr>
<tr>
<td>Mrs. Sunitha Sharma, P.S. to DDG</td>
<td>--</td>
<td>011-24607318</td>
<td>011-24698138</td>
</tr>
<tr>
<td>3.</td>
<td>G.S. Krishnan, Secretary &amp; GH (IT) <a href="mailto:gs.krishnan@npcindia.org">gs.krishnan@npcindia.org</a></td>
<td>0-98713-23211</td>
<td>011-24607350</td>
</tr>
<tr>
<td>4.</td>
<td>A.K. Sinha, GH (EM) <a href="mailto:sinhaak_2157@yahoo.co.in">sinhaak_2157@yahoo.co.in</a>, <a href="mailto:ak.sinha@npcindia.gov.in">ak.sinha@npcindia.gov.in</a></td>
<td>0-96548-77750</td>
<td>011-24607311</td>
</tr>
<tr>
<td>5.</td>
<td>Subrata Pal, GH (PM &amp; LMC) <a href="mailto:nmitu.npc@gmail.com">nmitu.npc@gmail.com</a>, <a href="mailto:jaysuin@yahoo.com">jaysuin@yahoo.com</a></td>
<td>0-99538-50301</td>
<td>011-24607316</td>
</tr>
<tr>
<td>6.</td>
<td>Siddharth Sharma, GH (Agri.Busi.) <a href="mailto:siddharth.sharma@npcindia.org">siddharth.sharma@npcindia.org</a></td>
<td>0-98104-66101</td>
<td>011-24607346</td>
</tr>
<tr>
<td>7.</td>
<td>M.J. Pervez, GH (Env.) <a href="mailto:mj.parvez@npcindia.org">mj.parvez@npcindia.org</a></td>
<td>0-98106-00175</td>
<td>011-2460-7313</td>
</tr>
<tr>
<td>8.</td>
<td>A.K. Dhar, GH (Fin. &amp; TM) <a href="mailto:ak.dhar@npcindia.org">ak.dhar@npcindia.org</a></td>
<td>0-98713-23213</td>
<td>011-2460-7334</td>
</tr>
<tr>
<td>9.</td>
<td>Manoj Saxena, GH (PA, IS&amp;T) <a href="mailto:manoj.saxena@npcindia.org">manoj.saxena@npcindia.org</a></td>
<td>0-98106-90787</td>
<td>011-2460-7343</td>
</tr>
<tr>
<td>10.</td>
<td>K.P. Sunny, GH (ES &amp; SS) <a href="mailto:kp.sunny@npcindia.org">kp.sunny@npcindia.org</a></td>
<td>0-9811045547</td>
<td>011-24607371</td>
</tr>
<tr>
<td>S. No.</td>
<td>Name / Email Id</td>
<td>Mobile Number</td>
<td>Office</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------------</td>
<td>---------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>1</td>
<td>M.L. Suryaprakash, H-RPMG, B'lore</td>
<td>0-99005-79948</td>
<td>080-2559-2240 /</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:ml.suryaprakash@npcindia.org">ml.suryaprakash@npcindia.org</a> / <a href="mailto:bngnpc@gmail.com">bngnpc@gmail.com</a></td>
<td></td>
<td>2532-1659</td>
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<tr>
<td></td>
<td>(from 25.6.12 onwards)</td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>H.R. Prabhu, Director, RPMG, B'lore</td>
<td>0-94493-51183</td>
<td>080-2559-2240 /</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:bngnpc@gmail.com">bngnpc@gmail.com</a></td>
<td></td>
<td>2532-1659</td>
</tr>
<tr>
<td></td>
<td>(from 25.6.12 onwards)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>P.R. Upadhyay, H-RPMG, Bhopal</td>
<td>0-8989003817</td>
<td>0755-246-6537</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:npcbhopal@airtelmail.in">npcbhopal@airtelmail.in</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><a href="mailto:npcbbsr1@dataone.in">npcbbsr1@dataone.in</a> / <a href="mailto:npcbbs@bsnl.in">npcbbs@bsnl.in</a></td>
<td></td>
<td>239-7381</td>
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<tr>
<td>5</td>
<td>P. Dharmalingam, H-RPMG &amp; AIP</td>
<td>0-94441-77914</td>
<td>044-26245629 /</td>
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<tr>
<td></td>
<td><a href="mailto:npc.chn@gmail.com">npc.chn@gmail.com</a></td>
<td></td>
<td>26251808 /</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>26255216</td>
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<tr>
<td>6</td>
<td>J. Nagesh Kumar, Director, AIP, Chennai</td>
<td>0-94448-82553</td>
<td>044-26251808 /</td>
</tr>
<tr>
<td></td>
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<tr>
<td>7</td>
<td>S. Shivakumar, Head-Chennai</td>
<td>0-9444121288</td>
<td>044-2625-2467 /</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:sampath.mukunthan@yahoo.co.in">sampath.mukunthan@yahoo.co.in</a></td>
<td></td>
<td>2625-3144</td>
</tr>
<tr>
<td>8</td>
<td>S. Mukunthan, Director, Chennai</td>
<td>0-99402-26819</td>
<td>044-2625-2467 /</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:sampath.mukunthan@yahoo.co.in">sampath.mukunthan@yahoo.co.in</a></td>
<td></td>
<td>2625-3144</td>
</tr>
<tr>
<td>9</td>
<td>H. R. Jindal, Director - AIP-Chennai</td>
<td>0-9447-96802 /</td>
<td>044-2625-1808 /</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:hr.jindar@npcindia.org">hr.jindar@npcindia.org</a> / <a href="mailto:aipnpc@vsnl.com">aipnpc@vsnl.com</a></td>
<td></td>
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<td>S. No.</td>
<td>Name / Email Id</td>
<td>Mobile Number</td>
<td>Telephone Nos.</td>
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</tr>
<tr>
<td></td>
<td>S/Shri/Ms.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Shrish Palliwal, DD &amp; Head RPMG, Gandhinagar</td>
<td>0-98242-67246</td>
<td>079-2328-7344 / 2328-7345 / 079-2328-7344</td>
</tr>
<tr>
<td>14.</td>
<td>K.V.R.Raju, Director</td>
<td>0-98188-24667</td>
<td>040-2473-3473 / 040-2560-6981</td>
</tr>
<tr>
<td>16.</td>
<td>Dr.R.D.Mishra, H-RPMG, Kanpur</td>
<td>0-94154-74544</td>
<td>0512-224176 / 224-860 / 0512-222-4177</td>
</tr>
<tr>
<td>17.</td>
<td>P.S.Bajpai, Director, RPMG, Kanpur</td>
<td>0-98391-97113</td>
<td>0512-224176 / 222-4860 / 0512-222-4177</td>
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<tr>
<td>18.</td>
<td></td>
<td>0-98308-92627</td>
<td>033-2287-0269 / 609 / 3116 / 033-2287-3919</td>
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<tr>
<td>19.</td>
<td>Dr.S.Biswa, Director, RPMG Kolkata</td>
<td>0-98318-40613</td>
<td>033-2287-0269 / 609 / 3116 / 033-2287-3919</td>
</tr>
<tr>
<td>20.</td>
<td>S.B.Sadananda, H-RPMG, Mumbai</td>
<td>0-98922-78935</td>
<td>022-2307-1322 / 2300-2924 / 022-2307-3323</td>
</tr>
<tr>
<td>S. No.</td>
<td>Name / Email Id</td>
<td>Mobile Number</td>
<td>Telephone Nos.</td>
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<tr>
<td></td>
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<td>Office</td>
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<tr>
<td>21.</td>
<td>T.Sankaranarayanan, Director RPMG-Mumbai <a href="mailto:dp.majumdar@npcindia.org">dp.majumdar@npcindia.org</a></td>
<td>0-94239-84975</td>
<td>022-2307-1322 / 2300-2924</td>
</tr>
<tr>
<td>22.</td>
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<td>0-94316-85527</td>
<td>0612-257-2311</td>
</tr>
<tr>
<td>23.</td>
<td>A.K.Singh, DD, RPMG-Patna <a href="mailto:npcpat@sifi.com">npcpat@sifi.com</a></td>
<td>0-94302-93698</td>
<td>0612-257-2311</td>
</tr>
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</table>

Annexure - 3

<table>
<thead>
<tr>
<th>Sno</th>
<th>Sectors in which energy auditor / energy audit firm has conducted energy audits since inception</th>
<th>Yes / No</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Aluminium</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Buildings (Hospitals, Hotels, Malls, Schools, Tourist Offices)</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Chemicals Inorganic</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Chemicals Organic</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Cement</td>
<td>Yes</td>
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<tr>
<td>6</td>
<td>Chloralkali</td>
<td>Yes</td>
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<tr>
<td>7</td>
<td>Dyes</td>
<td>Yes</td>
</tr>
<tr>
<td>8</td>
<td>Engineering</td>
<td>Yes</td>
</tr>
<tr>
<td>9</td>
<td>Frabraction</td>
<td>Yes</td>
</tr>
<tr>
<td>10</td>
<td>Glass, Ceramic &amp; Tiles</td>
<td>Yes</td>
</tr>
<tr>
<td>11</td>
<td>Iron &amp; Steel</td>
<td>Yes</td>
</tr>
<tr>
<td>12</td>
<td>Fertilizers</td>
<td>Yes</td>
</tr>
<tr>
<td>13</td>
<td>Jute &amp; Jute products</td>
<td>Yes</td>
</tr>
<tr>
<td>14</td>
<td>Lamination Industries</td>
<td>Yes</td>
</tr>
<tr>
<td>15</td>
<td>Mineral Ores</td>
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</tr>
<tr>
<td>16</td>
<td>Mining Industries</td>
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</tr>
<tr>
<td>17</td>
<td>Naval Vessels</td>
<td>Yes</td>
</tr>
<tr>
<td>18</td>
<td>Pulp &amp; Paper</td>
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<td>19</td>
<td>Power Plants</td>
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<td>20</td>
<td>Pharmaceuticals</td>
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<td>Railways</td>
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<td>23</td>
<td>Tea Estates</td>
<td>Yes</td>
</tr>
<tr>
<td>24</td>
<td>Transmission &amp; Distribution</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Subject Wise Expertise

As a whole NPC has conducted energy audits on the following subjects & sectors, subject wise expertise Boilers, Furnaces, Thermo packs, Driers, Ovens, Kilns, Coke oven batteries, Steam generation, Distribution & Utilization, Steam economic insulation, Waste heat recovery, Co-generation, Heat exchangers, Diesel generating sets, Electric distribution systems, Sub-station, Transformers, Feeder lines, Motors, Compressed air system, Pumps, Fans & Blowers, Lighting Refrigeration & Air conditioning system.

### Subject Wise Expertise

<table>
<thead>
<tr>
<th>Sno</th>
<th>Subject Wise Expertise</th>
<th>Consultant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aluminum</td>
<td>RV, SBS, AC, BN, AKS</td>
</tr>
<tr>
<td>2</td>
<td>Buildings (Hospitals, Hotels, Malls, Schools, Tourist Offices)</td>
<td>RV, AKS, TSN, PB, SBS, BD, PKR, VV, PC, PS, AM, SK, BR</td>
</tr>
<tr>
<td>3</td>
<td>Chemicals Inorganic</td>
<td>RV, SBS, TSN, PB, JNK, GG, AKS, HRP</td>
</tr>
<tr>
<td>4</td>
<td>Chemicals Organic</td>
<td>RV, SBS, TSN, PB, JNK, GG, AR, AKS, HRP</td>
</tr>
<tr>
<td>5</td>
<td>Cement</td>
<td>RV, JNK, TSN, PB, DD, PKR, DB, PKR, HRP</td>
</tr>
<tr>
<td>6</td>
<td>Chloralkali</td>
<td>RV, SBS, TSN, PR, JNK, AKS, HRP</td>
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<tr>
<td>7</td>
<td>Dyes</td>
<td>RV, SBS, TSN, PB, JNK, RS, GG, AR, HRP, AKS</td>
</tr>
<tr>
<td>8</td>
<td>Engineering</td>
<td>RV, AKS, TSN, SBS, JNK, GG, PB, HRP, DB, PKR</td>
</tr>
<tr>
<td>9</td>
<td>Frabraction</td>
<td>RV, AKS, TSN, SBS, JNK, GG, PB, HRP, DB, PKR</td>
</tr>
<tr>
<td>10</td>
<td>Glass, Ceramic &amp; Tiles</td>
<td>RV, AKS, TSN, SBS, JNK, GG, PB, HRP, DB</td>
</tr>
<tr>
<td>11</td>
<td>Iron &amp; Steel</td>
<td>RV, AKS, HRP, JNK, PD, DB, VV</td>
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<tr>
<td>12</td>
<td>Fertilizers</td>
<td>RV, SBS, TSN, JNK, PD, AKS</td>
</tr>
<tr>
<td>13</td>
<td>Jute</td>
<td>RV, AKS, PB, SBS, TSN, JNK, PD, AKS</td>
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<tr>
<td>14</td>
<td>Lamination</td>
<td>RV, AKS, PB, SBS, TSN, JNK, PKR, DB</td>
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<td>15</td>
<td>Mineral Ores</td>
<td>RV, AKS, SBS, TSN, JNK</td>
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<td>16</td>
<td>Mining</td>
<td>RV, AKS, SBS, TSN, JNK</td>
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<td>17</td>
<td>Naval Vessels</td>
<td>RV, AKS, TSN, SBS, JNK</td>
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<td>18</td>
<td>Pulp &amp; Paper</td>
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<td>19</td>
<td>Pharmaceuticals</td>
<td>RV, AKS, TSN, JNK, HRP, PD</td>
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<td>20</td>
<td>POWER PLANTS</td>
<td>RV, AKS, TSN, JNK, HRP, HRP, AC, AR, DB, GG, BD, PKR, PD, PS, BR, AM, SK</td>
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<td>21</td>
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<td>Roadways</td>
<td>RV, AKS, TSN, JNK, PB, SBS, PC</td>
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<td>23</td>
<td>Tea Estates</td>
<td>RV, AKS, AC, AR, HRP, SBS, PB, TSN</td>
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<td>24</td>
<td>Transmission &amp; Distribution</td>
<td>RV, AKS, AC, AR, HRP, SBS, PB, TSN</td>
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**Annexure 4**
### Energy Audit in Process Systems

<table>
<thead>
<tr>
<th>Sno</th>
<th>Energy audit process system</th>
<th>Yes / No</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Aluminium Production Process</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Cement Production Process</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Textiles Production Process</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Iron &amp; Steel Production Process</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Fertilizers Production Process</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>Pulp &amp; Paper Production Process</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
<td>Sugar Production Process</td>
<td>Yes</td>
</tr>
<tr>
<td>8</td>
<td>Pharmaceuticals Production Process</td>
<td>Yes</td>
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<tr>
<td>9</td>
<td>Dyes &amp; Chemicals Production Process</td>
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### Energy Audits in Thermal Systems

<table>
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<th>Energy audit thermal utility system</th>
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<tr>
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<td>Aluminium</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Buildings (Hospitals, Hotels, Malls, Schools, Tourist Offices)</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Chemicals Inorganic</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Chemicals Organic</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Cement</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>Chloralkali</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
<td>Dyes</td>
<td>Yes</td>
</tr>
<tr>
<td>8</td>
<td>Engineering</td>
<td>Yes</td>
</tr>
<tr>
<td>9</td>
<td>Fabrication</td>
<td>Yes</td>
</tr>
<tr>
<td>Sno</td>
<td>Energy audit electrical utility system</td>
<td>Yes / No</td>
</tr>
<tr>
<td>-----</td>
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<tr>
<td>1</td>
<td>Aluminium</td>
<td>Yes</td>
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<td>2</td>
<td>Chemicals Inorganic</td>
<td>Yes</td>
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<tr>
<td>3</td>
<td>Chemicals Organic</td>
<td>Yes</td>
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<td>4</td>
<td>Cement</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Chloralkali</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>Dyes</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
<td>Engineering</td>
<td>Yes</td>
</tr>
<tr>
<td>8</td>
<td>Frabraction</td>
<td>Yes</td>
</tr>
<tr>
<td>9</td>
<td>Glass, Ceramic &amp; Tiles</td>
<td>Yes</td>
</tr>
<tr>
<td>10</td>
<td>Iron &amp; Steel</td>
<td>Yes</td>
</tr>
<tr>
<td>11</td>
<td>Fertilizers</td>
<td>Yes</td>
</tr>
<tr>
<td>12</td>
<td>Jute</td>
<td>Yes</td>
</tr>
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<td>13</td>
<td>Lamination</td>
<td>Yes</td>
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<tr>
<td>14</td>
<td>Mining</td>
<td>Yes</td>
</tr>
<tr>
<td>15</td>
<td>Naval Vessels</td>
<td>Yes</td>
</tr>
<tr>
<td>16</td>
<td>Pulp &amp; Paper</td>
<td>Yes</td>
</tr>
<tr>
<td>17</td>
<td>Power Plants</td>
<td>Yes</td>
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<td>18</td>
<td>Pharmaceuticals</td>
<td>Yes</td>
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<td>19</td>
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<td>20</td>
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**Energy Audits in Electrical Utility Systems**
<table>
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<td>2</td>
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Annexure - 8

**Instruments Available**

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<tr>
<th>Sn o</th>
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<tbody>
<tr>
<td>1</td>
<td>Power Analyser</td>
</tr>
<tr>
<td>2</td>
<td>Lux Meter</td>
</tr>
<tr>
<td>3</td>
<td>Strobo Scobe</td>
</tr>
<tr>
<td>4</td>
<td>IR Thermo Gun</td>
</tr>
<tr>
<td>5</td>
<td>Flue Gas Analyser with Probe</td>
</tr>
<tr>
<td>6</td>
<td>Manometer and Pitot Tube</td>
</tr>
<tr>
<td>7</td>
<td>Anemo Meter</td>
</tr>
<tr>
<td>8</td>
<td>Hygro Scope</td>
</tr>
<tr>
<td>9</td>
<td>Ultra Sonic Water Flow Meter with Transducers</td>
</tr>
<tr>
<td>10</td>
<td>K-Type Thermometer and Thermo couple</td>
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</table>

Annexure - 9

**Instruments Available (Electrical)**

<table>
<thead>
<tr>
<th>Sno</th>
<th>Instruments Available (Electrical)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Power Analyser</td>
</tr>
<tr>
<td>2</td>
<td>Lux Meter</td>
</tr>
<tr>
<td>3</td>
<td>Strobo Scobe</td>
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Annexure - 10
## Instruments Available
(Thermal and others)

<table>
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<tr>
<th>Sno</th>
<th>Instruments Available (Thermal and others)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I R Thermo Gun</td>
</tr>
<tr>
<td>2</td>
<td>Flue Gas Analyser with Probe</td>
</tr>
<tr>
<td>3</td>
<td>Pitot Tube and Digital Manometer</td>
</tr>
<tr>
<td>4</td>
<td>Anemometer</td>
</tr>
<tr>
<td>5</td>
<td>Hygroscope</td>
</tr>
<tr>
<td>6</td>
<td>Ultra Sonic Water Flow Meter with Transducers</td>
</tr>
<tr>
<td>7</td>
<td>K-Type Thermometer and Thermo couple</td>
</tr>
<tr>
<td>No.</td>
<td>Details of Recent Training Programmes / Seminars / Workshops</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Post Graduate certificate course on Energy Management for 11th Batch Energy Management Trainees of National Productivity Council</td>
</tr>
<tr>
<td>2</td>
<td>UNEP sponsored Two Weeks Hands-on Practical Training Energy Efficiency and Conservation in Utility Equipments for ASEAN Countries</td>
</tr>
<tr>
<td>3</td>
<td>Training programme on &quot;Energy auditing and conservation&quot; for oil and natural gas corporation limited</td>
</tr>
<tr>
<td>4</td>
<td>Training programme on &quot;Energy auditing and conservation techniques&quot; for Power grid Corporation of India ltd.,</td>
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<td>5</td>
<td>Hands on practical training on energy conservation for RITES ltd.,</td>
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<tr>
<td>6</td>
<td>Avenues for GHG Emission Reduction in Energy Generation, Distribution and Demand side Activities for Rina India Pvt., Ltd</td>
</tr>
<tr>
<td>7</td>
<td>Preparatory training course for prospective EM / EA Candidates appearing for 11th BEE National Certification Exam</td>
</tr>
<tr>
<td>8</td>
<td>Preparatory training course for prospective EM / EA Candidates appearing for 12th BEE National Certification Exam</td>
</tr>
<tr>
<td>9</td>
<td>Preparatory training course for prospective EM / EA Candidates appearing for 13th BEE National Certification Exam</td>
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<tr>
<td>10</td>
<td>Energy Conservation in HVAC &amp; Refrigeration</td>
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<tr>
<td>11</td>
<td>Energy Conservation in Buildings in Hyderabad</td>
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<tr>
<td>12</td>
<td>Energy Clinic</td>
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<tr>
<td>13</td>
<td>Efficient operation of Boilers</td>
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<tr>
<td>14</td>
<td>DRUM Programmes for Distribution companies</td>
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<tr>
<td>15</td>
<td>RAPDRP Training Programmes for Distribution companies</td>
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<tr>
<td>16</td>
<td>Cleaner production &amp; Energy Efficiency work shops for ministry of environment in Hyderabad</td>
</tr>
<tr>
<td>17</td>
<td>5 day work shop on energy conservation in process utilities in Hyderabad</td>
</tr>
<tr>
<td>18</td>
<td>Capacity Building of students &amp; Academicians in CP, CDM &amp; Env. Related issues in Gujarat</td>
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<tr>
<td>19</td>
<td>Training Program on &quot;Management of Hazardous Waste, Used Batteries &amp; E-Waste in Gujarat</td>
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<td>20</td>
<td>Dissemination workshop on CP Assessment in Wood Processing Sector in Gujarat</td>
</tr>
<tr>
<td>21</td>
<td>Dissemination workshop on CP options for treating specific trade effluents from Industries in Gujarat</td>
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<tr>
<td>22</td>
<td>Dissemination workshop on CP Assessment in VSK type mini cement Industry Sector in Gujarat</td>
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<td>23</td>
<td>Dissemination workshop on CP Assessment in TPS in Gujarat</td>
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<td>24</td>
<td>Dissemination workshop on CP Assessment in Sugar &amp; Distillery in Gujarat</td>
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<td>Annexure-11</td>
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<td><strong>Scheduled in AIP for 2013-14</strong></td>
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<table>
<thead>
<tr>
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<th>Electrical Energy efficiency training for</th>
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<td>31.</td>
<td>Electric motor, VFD &amp; Harmonic</td>
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<td></td>
<td>Energy conservation in Pumps &amp; Fans</td>
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<tr>
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<td>Energy conservation in compressed system</td>
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<td></td>
<td>Energy Conservation in refrigeration &amp; Air Conditioning</td>
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<tr>
<td></td>
<td>Advance Lighting Technology &amp; Conservation</td>
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<td></td>
<td>Electrical Energy Audit &amp; Conservation</td>
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<table>
<thead>
<tr>
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<th>Thermal Energy Efficiency Training For</th>
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<tbody>
<tr>
<td>32.</td>
<td>Industrial Furnance &amp; WHR</td>
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<td>Energy Conservation in Process Boilers</td>
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<td>Energy Conservation in Steam Systems</td>
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<td></td>
<td>Heat Exchanger &amp; Performance Evaluation</td>
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<td>Thermal Energy Audit &amp; Conservation</td>
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<th>Renewable Energy application for Industrial Commercial Building</th>
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<td>Wind</td>
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<td>Solar Thermal</td>
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<td>Photovolatic</td>
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<td>ISO 50001 EnMS Training</td>
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<td>Energy Audit Instruments &amp; M &amp; V Training</td>
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<td></td>
<td>Power Plant Computer simulation training</td>
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Annexure-2
Technical Form 6: CV of Anupom Chakraborty

<table>
<thead>
<tr>
<th>1.) Proposed Position</th>
<th>Team Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.) Name of the firm</td>
<td>National Productivity Council</td>
</tr>
<tr>
<td>3.) Name of Staff</td>
<td>Anupom Chakraborty</td>
</tr>
<tr>
<td>4.) Nationality</td>
<td>Indian</td>
</tr>
<tr>
<td>5.) Date of Birth</td>
<td></td>
</tr>
<tr>
<td>6.) Profession</td>
<td>Sr.Deputy Director (EM)</td>
</tr>
<tr>
<td>7.) Year with firm / Entity</td>
<td>24 years</td>
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</table>
| 8.) Key Qualifications | Bachelor Degree in Mechanical Engg.- Assam Engineering College 
TIPIE (now AIP), Chennai - Two- Yr. PG Certificate in Energy Mgmnt.) 
Japan Productivity Center, Tokyo – One month Trg. Certificate on’ Environment Protection & Resource Conservation’ 
* Bongaigaon T. P. S. under ASEB - July’81 to Nov’83 Assistant Engineer (O & M) 
* Performed duties as adviser cum consultant as team leader for the entire APDRP project in the circle of 24 PGs (South), West Bengal State Electricity Board (WBSEB) during end of 2001. 
* Responsibility: Under the project, the AcC activities included DPR preparations, BID document preparations, assisting the state utilities, awarding the contracts, monitoring the construction/ implementation activities of various schemes as per the provision of DPR. |
9.) | Membership in Professional Societies | ---- |
---|---|---|
10.) | Task Assigned | Component activities as called upon |

**Signature of Contact Person on behalf of organization**

**Full Name:** D.Pawan Kumar, Director & Group Head (Energy Management)

**Address:** 5-6, Institutional Area, Lodhi Road , New Delhi - 110003

**Phone No:** 011-24607311

**E-mail Id:** dpawan.kumar@npcindia.org
| 1.) | Proposed Position | Team Member |

Technical Form 6: CV of J. Nagesh Kumar
<table>
<thead>
<tr>
<th></th>
<th>Name of the firm</th>
<th>National Productivity Council</th>
</tr>
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<tbody>
<tr>
<td>3.)</td>
<td>Name of Staff</td>
<td>J. Nagesh Kumar</td>
</tr>
<tr>
<td>4.)</td>
<td>Nationality</td>
<td>Indian</td>
</tr>
<tr>
<td>5.)</td>
<td>Date of Birth</td>
<td>06/01/1962</td>
</tr>
<tr>
<td>6.)</td>
<td>Profession</td>
<td>Consultant &amp; Trainer</td>
</tr>
<tr>
<td>7.)</td>
<td>Year with firm / Entity</td>
<td>Since August’1988</td>
</tr>
<tr>
<td>8.)</td>
<td>Key Qualifications</td>
<td>Experience</td>
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</table>

1. B.E (Mechanical Engg.) – 1979-84
3. Ph.d. (Gas Turbine) in Progress from Anna University, Chennai.

- 21 years experience in various RPMGs offices of National Productivity council as Consultant and Trainer in Energy Management inclusive of:
  2. Technology Application & Diagnostic Studies
  3. Technology Assessment / Needs

- Functioned as a Chief Consultant and a specialist in Energy Efficiency improvement studies and energy audit in a wide spectrum of industries including recent ones:
  1. **Accelerated Power Development and Reforms Project of MoP, GoI** in states of Himachal Pradesh, Assam and West Bengal
  2. Faculty in Drum Training Program (Andhra Pradesh State Electricity Board)
  5. Assessment of Cogeneration potential in India.
<table>
<thead>
<tr>
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<th>Membership in Professional Societies</th>
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</thead>
<tbody>
<tr>
<td>10.)</td>
<td>Task Assigned</td>
<td>Component activities as called upon</td>
</tr>
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</table>
Technical Form 6: CV of P.Dharmalingam

<table>
<thead>
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<th>Proposed Position</th>
<th>Team Member</th>
</tr>
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<tbody>
<tr>
<td>2.)</td>
<td>Name of the firm</td>
<td>National Productivity Council</td>
</tr>
<tr>
<td>3.)</td>
<td>Name of Staff</td>
<td>P.Dharmalingam</td>
</tr>
<tr>
<td>4.)</td>
<td>Nationality</td>
<td>Indian</td>
</tr>
<tr>
<td>5.)</td>
<td>Date of Birth</td>
<td>25&lt;sup&gt;th&lt;/sup&gt; May 1957</td>
</tr>
<tr>
<td>6.)</td>
<td>Profession</td>
<td>Director, NPC Chennai</td>
</tr>
<tr>
<td>7.)</td>
<td>Year with firm / Entity</td>
<td>20 years</td>
</tr>
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</table>
| 8.) | Key Qualifications | **BEE certified Energy Auditor**  
B.Tech (Hons)Mech, Spl-Automobile Engg Madras Institute of Technology  
PGDEM (Post Graduate Professional Course in Energy Management) TIPIE, Chennai  
M.S (Software Systems-Spl Energy Mgmt) BITS, Pilani  
ADM - (Business Administration) AIMA  
DIM (Industrial Management) Symbiosis Institute, Pune  
Consulting assignments in Energy Audit & Energy Efficiency for Industries (Direct users):  
Executed more than 200 assignments covering Process, Engineering & Service industry. The sectors covered are Refineries, chemical, textiles, dairy, paper, sugar, tyre, steel, cement, fertilizers, pumping, oil & gas processing, automobiles, railways, power plant, large hotel and commercial buildings  
25 years experience as Consultant and Trainer in Energy Management & conservation  
- **Cleaner Production Energy Efficiency manual for Greenhouse gas Emission Reduction in Industry in Asia Pacific (GERIAP), UNEP, 2000**  
A Manual was prepared for training of trainers to the needs of nine countries in Asia pacific region under UNEP Project.  
- Performance assessment of Biomass power generation/Cogeneration project in India, Supported by MNRE, GOI, New Delhi)  
- Performance assessment and efficiency improvement in Heat & Power consuming equipments namely, Steam Generators, Waste Heat Boilers, Process/Fired Heaters  
- Energy audit and Performance assessment in Refrigeration, Compressed Air, Cooling Water System, water pumping, fan system and Lighting system. |
- Energy optimisation in process, process integration
- Thermal Power Station and Transmission & Distribution
- Thermal Insulation & Steam Trap Survey
- Captive Power & Co-Generation – Steam & Gas Turbine plant: Evaluation & Improvements
- Fuel/steam and power optimisation applicable to large continuous process plants
- Electrical Demand side Management
- Water audit and conservation
- Application of metering & monitoring system and Energy Efficient equipments

**National and International assignments Executed:**


  About 10,000 candidates have written this examination for the Certification from 2004
- Implementation of Institutional building & energy efficiency for state of Tamil Nadu supported by GTZ/BEE (SDA Development Project- EC ACT 2001)
- Chief faculty in Executive Development programme on Energy auditing at IPHRD –Tehran (IRAN Govt Project) conducted by NPC
- Namakkal Eco-city Demonstration Project: APO, Japan, Team Member for Energy Efficiency.

**Special Projects and Captive Power & Co-Generation Projects executed**

- **Cogeneration Performance Evaluation study**
  - 5 MW Bio mass based cogeneration plant, paper industry
  - 20 MW steam turbine cogeneration- sugar Industry
  - 6 MW DG SET cogeneration- Pharma industry

**MNRE sponsored Co-Generation Potential Evaluation Study- western India**

- **Gas Turbine- Power Plant Study**
* Assessment of Co-generation Potential in Western India Process plants (50 Nos) and preparation of 10 detailed Project report for implementing Cogeneration.

* Cairn Energy Ltd, Rajmundry Pondichery power corporation, Karikal

* **Electrical Demand Management**
  * Preparation of DSM Potential for the state of Tamilnadu
  * Part of the Strategic Plan for implementing EC ACT. For SDA & Pondicherry.

* **Energy & Environment**:
  Cleaner production and Energy Efficiency projects

**Green Productivity Demonstration Project**
- Hotel Industries, Chennai.
- Aavin Dairy- Ambattur
- As member on “Development of model Eco-city through Green Productivity at Namakkal” Tamilnadu, a project sponsored by Asian Productivity Organisation, Tokyo

**Projects executed on National Survey, Technical Audit & Curriculum Development**

Productivity and Energy efficiency in small & Tiny industries in Tamilnadu
- Improvements study undertaken in coir, metal, umbrella, lock manufacturing industries across the Tamil nadu.

Energy efficiency in Agricultural Form, Chengam
- Energy efficiency in agricultural pumping, form implements, Diesel engines, Drying units etc at Chengam

Technical Tender evaluation for selection of energy efficient boilers
- Technical audit and evaluation study was carried out for energy optimisation and selection process for IOCL.

**Setting up Energy Lab at NSIC**
Professional study and advisory service provided to NSIC for setting up Energy Demonstration LAB project. All energy audit instruments were procured and setup. Appropriate Energy equipments for practical training. Programme were conducted based on this project

**Curriculum development for Professional Course on Energy Management**
- Involved in syllabus development for BEE Energy auditor and Energy manager Course
- B.Tech Energy & Environment Agricultural university

Software tool Development for energy performance and efficiency calculation
- For Boiler & Furnace performance Analysis.
- Technical and Financial feasibility evaluation for Cogeneration projects

**Capacity Building for Power Sector Engineers:**
- Resource person/ training programmes conducted through CORE International for the following Electricity Boards:
  - Tamil Nadu Electricity Board
  - Power Department, Pondicherry

**TNUDF Study on Public Utilities: Energy Efficiency study in 25 Municipalities/Corporation in the state of Tamil Nadu**
- Detailed energy efficiency study was carried out in 25 manipulates in the Tamil nadu state sponsored by Tamil nadu urban development Fund under World Bank project. The main focus was on water pumping ,transportation, distribution, street lighting and office buildings
- Our study identified the saving potential of 25% in all public utilities.
- Based on this findings workshop was conducted involving all stockholders Tamilnadu including ESCO companies for awareness, dissemination and implantation based on ESCO Basis
- Based on this study, TN Govt has started for implementation on ESCO Basis.

| 9.) | Membership in Professional Societies | --- |
| 10.) | Task Assigned | Component activities as called upon |
## Technical Form 6: CV of H. Raghavendra Prabhu

<table>
<thead>
<tr>
<th></th>
<th>Proposed Position</th>
<th>Team Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.)</td>
<td>Name of the firm</td>
<td>National Productivity Council</td>
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<tr>
<td>3.)</td>
<td>Name of Staff</td>
<td>H. Raghavendra Prabhu</td>
</tr>
<tr>
<td>4.)</td>
<td>Nationality</td>
<td>Indian</td>
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<tr>
<td>5.)</td>
<td>Date of Birth</td>
<td>23.11.1959</td>
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<tr>
<td>6.)</td>
<td>Profession</td>
<td>Consultant</td>
</tr>
<tr>
<td>7.)</td>
<td>Year with firm / Entity</td>
<td>22 Years</td>
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</table>
| 8.) | Key Qualifications | 22 years of experience in training and consultancy in different energy intensive sectors. 
- B.Tech. (Mechanical Engineering), 
- Post Graduate Diploma in Energy Management, 
- Post Graduate Programme in Management (M.B.A. Equivalent) in Production & Operations Management, All India Management Association, New Delhi, 
- Diploma in Training & Development, Indian Society of Training & Development, New Delhi, 
- Certified Energy Auditor (CEA) by Bureau of Energy Efficiency (BEE), Govt. of India. 
- A unique combination of service in Energy Management & Audit, Production and Operations Management, and also in Training & Development with rich experience of Consulting and Training. 
- Carried out more than 250 Energy Audit and Conservation studies in large and medium industries in different sectors such as Dairy, Mining, Pharmaceutical, Building, Automobile, Pulp & Paper, Chemical, Textile, re-rolling, Forging etc. Also done projects in Industrial Engineering discipline. 
- Imparted training to more than 4000 senior and middle level executive of various public and private organizations such as GAIL, ONGC, NTPC State Electricity Board, Hero Honda, Karnataka Power Corporation & Indian Railways through national level inter-company training programme and in-company training programme. |
| 9.) | Membership in Professional Societies | ---- |
| 10.) | Task Assigned | Component activities as called upon |
**Technical Form 6: CV of S.B. Sadananda**

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<td>Name of the firm</td>
<td>National Productivity Council</td>
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<tr>
<td>3.)</td>
<td>Name of Staff</td>
<td>Sadananda Subbarao Balasubramanya</td>
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<td>4.)</td>
<td>Nationality</td>
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<td>5.)</td>
<td>Date of Birth</td>
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<td>6.)</td>
<td>Profession</td>
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<td>7.)</td>
<td>Year with firm / Entity</td>
<td>28 years</td>
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<td>8.)</td>
<td>Key Qualifications</td>
<td>B.Tech. (Mechanical Engineering), Post Graduate Diploma in Fuel Efficiency (Energy Management) BEE Certified Energy Auditor</td>
</tr>
</tbody>
</table>

**Experience**

- 28 years experience as Consultant and Trainer in Energy Management & conservation.
- **Consulting assignments in Energy Audit, Energy Efficiency & Technical Audit for clients (Direct users).**
  - Executed more than 100 assignments covering Process, Engineering & Service industry. The sectors covered are textiles, pharmaceuticals, brewery, dairy, paper, fertilizers & petrochemicals, oil & gas processing, automobiles, railways, power, large luxury hotel and commercial buildings.
- **Capacity Building and Training Programmes**
  - Planned and conducted as core faculty more than 100 inter company programmes on energy conservation and management. Planned and conducted as core faculty more than 50 in company programmes on Energy Management and Audit.
  - Prepared Workbooks and Energy Conservation Manuals
  - Designed & Conducted as Course Director capacity building exercise for marketing/technical sales engineers of Leading oil companies in energy management and audit to provide value added service to their customers.
- **Presentation of paper and information dissemination:**
  - Presented paper on energy audit of large and complex process plants in the symposium on Energy Management and Conservation in Heavy Water plants and allied chemical plants, organised by Heavy Water Board,
February 2000.

- Present paper on energy audit in large continuous process industry in the workshop on Energy Conservation organised by Fertilizer Association of India, March 2002.

- Developed background script & commentary and provided editing support for production of instructional film on “Importance of Heat Recovery” for Department of Power, Govt. of India (1988).

- **Resource person / Team leader in special assignments with emphasis on Technology development and Strategic Planning:**

- Technology evaluation of radial tyres for buses and trucks - Modi Rubber (1984) – Introduction of Radial tyres, a new technology during that period, through a pilot plant in India under Technology Absorption and Adaptation Scheme (TAAS).


- Impact assessment of Technical Development Funds (TDF), a government of India scheme for import of services and equipments through foreign line of credit / fund support for improving productivity and quality in manufacturing (1992).


| 9.) | Membership in Professional Societies | ---- |
| 10.) | Task Assigned | Component activities as called upon |
Technical Form 6 : CV of T.S.Narayan

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<td>3.)</td>
<td>Name of Staff</td>
<td><strong>Sankara Narayanan Thirugnana Sambandan</strong></td>
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<tr>
<td>4.)</td>
<td>Nationality</td>
<td>Indian</td>
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<tr>
<td>5.)</td>
<td>Date of Birth</td>
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<td>6.)</td>
<td>Profession</td>
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<td>Year with firm / Entity</td>
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<td>8.)</td>
<td>Key Qualifications</td>
<td>B.Tech. (Electrical &amp; Electronics Engineering), Post Graduate Diploma in Energy Management, BEE Certified Energy Auditor</td>
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**Experience**

- 22 years experience as Consultant and Trainer in Energy Management & conservation
  - Executed more than 120 assignments covering Process, Engineering & Service industry. The sectors covered are textiles, dairy, paper, fertilizers, petroleum product pumping, oil & gas processing, automobiles, railways, power, large luxury hotel and commercial buildings.
  - Technical audit of Repair & Maintenance of MSEB Thermal Power Station and Transmission & Distribution Circles
  - Thermal Insulation & Steam Trap Survey
  - Energy optimisation in process
  - Captive Power & Co-Generation – Steam & Gas Turbine plants
  - Fuel/steam and power optimisation applicable to large continuous process plants
  - Electrical Demand Management
  - Application of metering & monitoring system and Energy Efficient equipments
<table>
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<th>Membership in Professional Societies</th>
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## Technical Form 6: CV of D. Rajnikant

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<td>3</td>
<td>Name of staff and Nationality</td>
<td>D.Rajnikant Indian</td>
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<tr>
<td>4</td>
<td>Date of Birth</td>
<td>30.08.1978</td>
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<td>7</td>
<td>Key Qualifications Experience</td>
<td>B.Tech (Chemical Engineering), Post Graduate Diploma in Energy Management BEE Certified Energy Auditor</td>
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**MAJOR PROJECTS EXECUTED – Few key projects at a glance**

1. **APDRP Project**

   As a team member for the APDRP (Accelerated Power Development Reform Project) for which NPC was Consultant cum Advisors (AcC) to three state electricity boards has developed different system improvement schemes to bring down the technical losses in the distribution system. Prepared detailed project report for the schemes such as consumer metering, computerized billing system in the state of Himachal Pradesh and the turnkey project on the basis of DPR was successfully implemented.

2. **Energy audit at Ferozabad Glass Industries**

   A detailed energy audit and conservation study conducted at Ferozabad glass industry cluster to evaluate the energy consumption and cost savings options, cost benefit analysis. Assisted in implementation of major suggestions (most of the suggestions are low cost and adopted to local conditions, as most of the industries in the cluster are small scale) and also evaluated the post implementation results. About 15-20 industries implemented the suggestions in the cluster.

3. **Capability Assessment of SDA for implementation of EC Act 2001**

   Bureau of Energy Efficiency (BEE) in collaboration with German Technical Cooperation (GTZ) assigned a task to assess capabilities of State Designated Agencies (SDA) for successful implementation of EC Act 2001.
Energy Audit At Delhi International Airport

Detailed energy audit and conservation study carried out at Delhi International Airport, New Delhi.

5. Development Of PDD for Large Scale Biomass Based Grid Connected Power Plant From India

18 MW large scale biomass based grid connected power plant situated in southern region of India in Ramnad district of Tamil Nadu eligible to register as CDM project under Kyoto protocol of UNFCC. Project registered under CDM successfully.

6. GERIAP (Greenhouse Emission Reduction from Industry in Asia & Pacific) Project

India being one of the member countries of GERIAP and NPC being the National Focal Point for India was awarded the GERIAP study to evaluate Green House Emission reduction potential in India.

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<tr>
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<th>Task assigned</th>
<th>Membership in Professional Societies</th>
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<td>9</td>
<td>Task assigned</td>
<td>Component Activities as called upon</td>
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## Technical Form-6: CV of Shri Durgaji Bonam

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<td>2.)</td>
<td>Name</td>
<td>Durgaji Bonam</td>
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<tr>
<td>3.)</td>
<td>Nationality</td>
<td>Indian</td>
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<tr>
<td>4.)</td>
<td>Date of Birth</td>
<td>16/04/1985</td>
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<td>5.)</td>
<td>Profession</td>
<td>Assistant Director in Energy management Division</td>
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<td>6.)</td>
<td>Key Qualifications</td>
<td>B.Tech. (Chemical), M.E. (Chemical Engg.), Post Graduate Certificate Program in Energy Management. BEE Certified Energy Auditor</td>
</tr>
<tr>
<td>7.)</td>
<td>Experience</td>
<td>Key team member in the various National level assignments such as BEE,s study to assess the Energy Consumption and Conservation Potential in sectors like Commercial, Agricultural, Municipal and SME sector through out Country. BEE/EESL PAT (Perform Achieve and Trade) Baseline Energy Audits for the Cement Plants. Conducted Energy Audits at various Thermal Power Plants, Cements Plants etc., such as NTPC Ramagundam, NTPC Simhadri, NSPCL Bhilai, Cement Corporation of India, Ordnance Factories, Security Printing Press. Faculty for USAID sponsored DRUM programs for Electrical Utilities, Boiler Directorates, BEE, NEDCAP, NMDC training programs</td>
</tr>
<tr>
<td>8.)</td>
<td>Training areas</td>
<td>Energy conservation and efficiency, Demand side Management, APDRP.R-APDRP, Energy audit in Power plant audits, process industries PAT scheme</td>
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<tr>
<td></td>
<td>Proposed Position</td>
<td>Team Member</td>
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<td>2.)</td>
<td>Name of the firm</td>
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<tr>
<td>3.)</td>
<td>Name of Staff</td>
<td>R.Suryanarayan</td>
</tr>
<tr>
<td>4.)</td>
<td>Nationality</td>
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<tr>
<td>5.)</td>
<td>Date of Birth</td>
<td>13 November 1960</td>
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<td>6.)</td>
<td>Profession</td>
<td>Director, NPC</td>
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<td>Year with firm / Entity</td>
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<td>8.)</td>
<td>Key Qualifications</td>
<td>BEE Certified Energy Auditor</td>
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<td></td>
<td>Experience</td>
<td>B.Tech. (Mechanical Engg.) Anna University</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post Graduate Diploma in Energy Management- National Productivity Council, Chennai</td>
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<td></td>
<td></td>
<td>National Productivity Council, Chennai- M.S (Software Systems)</td>
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<td></td>
<td></td>
<td>21 years experience as Consultant and Trainer in Energy Management.</td>
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<td></td>
<td></td>
<td>Energy Conservation &amp; energy Efficiency in Industry sector</td>
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<tr>
<td></td>
<td></td>
<td>Technology Application &amp; Diagnostic Studies</td>
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<tr>
<td></td>
<td></td>
<td>Technology Assessment / Needs</td>
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<td></td>
<td></td>
<td>Thermal Power Plant Auxiliary Energy use optimization studies</td>
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<tr>
<td></td>
<td></td>
<td>Functioned as a Chief Consultant and a specialist in Energy Efficiency improvement studies and energy audit in a wide spectrum of industries including recent ones:</td>
</tr>
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<td></td>
<td></td>
<td>Environments Audits &amp; monitoring at NTPC, RSTPS.</td>
</tr>
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<td></td>
<td></td>
<td>Faculty in Drum Training Program (Andhra Pradesh State Electricity Board)</td>
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<td>Sectoral Energy Audits for Deptt. of Power.</td>
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<td></td>
<td></td>
<td>Assessment of Cogeneration potential in India.</td>
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<td>9.)</td>
<td>Membership in Professional Societies</td>
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<td>10.)</td>
<td>Task Assigned</td>
<td>Component activities as called upon</td>
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Technical Form-6: CV of Shri Sunil Kumar

1.) Proposed Position
Team Member

2.) Name of the firm
National Productivity Council

3.) Name of Staff
Sunil Kumar

4.) Nationality
Indian

5.) Date of Birth
05/01/64

6.) Profession
Consultant

7.) Year with firm / Entity
17 years

8.) Key Qualifications
B.Tech. (Metallurgical), Post Graduate Diploma in Industrial Engineering.

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<th>Designation</th>
<th>Role</th>
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<tr>
<td>From May, 2002 till date</td>
<td>National Productivity Council, New Delhi</td>
<td>Deputy Director</td>
<td>Senior Consultant, (Energy Management &amp; Process Management Group)</td>
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<tr>
<td>From October, 1997 to April, 2002</td>
<td>National Productivity Council, Chandigarh</td>
<td>Deputy Director</td>
<td>Senior Consultant,</td>
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<tr>
<td>From November, 1992 to September, 1997</td>
<td>National Productivity Council, Chandigarh</td>
<td>Assistant Director</td>
<td>Consultant, (Industrial Engineering)</td>
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<tr>
<td>From March, 1990 to August, 1990</td>
<td>General Engineering Works (Subsi. Of M/s HDCL)</td>
<td>Assistant Manager (Production)</td>
<td>Production Planning and Control</td>
</tr>
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</table>

Functioned as a Senior Consultant and a specialist in Energy Efficiency improvement studies and energy audit in a wide spectrum...
of industries including recent ones:
- **Accelerated Power Development and Reforms Project of MoP, GoI** in states of Himachal Pradesh, Assam and West Bengal
- Implementation of EC Act in SDA in Six states of India
- Distribution Reforms and Upgrades Management (Training Programmes e.g. Customer Relationship Management)
- Impact Assessment study of Renewable Energy Systems Deployed in Leh ana Kargil (Ladakh Region)
- Building Audit in Delhi
- Facilitation services for developing ISO-9001 standard based on Quality Management System
- Business Process Analysis and Re-engineering for Organisational Restructuring
- Business Process Engineering for IT package implementation

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<tr>
<td>9.)</td>
<td>Membership in Professional Societies</td>
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<td>10.)</td>
<td>Task Assigned</td>
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### Technical Form 6: CV of P. Chitra

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<td>2.)</td>
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<td>3.)</td>
<td>Name of Staff</td>
<td>P. Chitra</td>
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<td>5.)</td>
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<td>Profession</td>
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<td>Year with firm / Entity</td>
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<td>• M.E. (BioEnergy)</td>
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<td>• PGDCA -PG Diploma in Computer Application</td>
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<td>• B.E. (Agricultural Engineering)</td>
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<td></td>
<td></td>
<td>• Certified Energy Auditor (BEE)</td>
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</table>

1. 1 year as Asstt. Director (Energy Mgt.) in AIP, NPC, Chennai in.
2. 1 year 11 months and 16 days as Sr. Research Fallow in Department of Bio-Energy, AEC&RI, Tamil Nadu Agricultural University (TNAU), Coimbatore.
3. 5 months and 13 days as Sr. Research Fallow in Forest College & Research Institute, Mettupalayam, TNAU.
4. 2 years, 1 month and 4 days as JRF in Department of Agricultural Food Process Engineering, TNAU, Coimbatore.

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<td>Component activities as called upon</td>
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# CV of Prashant Srivastava

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<td>3</td>
<td>Name of staff and Nationality</td>
<td>Prashant Srivastava, Indian</td>
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<td>4</td>
<td>Date of Birth</td>
<td>10.05.1979</td>
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<td>Years with firm / Entity</td>
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## Key Qualifications

**Experience**

- B.Tech (Chemical Engineering), BEE Certified Energy Auditor

**Detailed Energy Audit study** of various types of companies includes the following:

1. M/s Oberoi Hotels – all over India
2. M/S PVR Cinemas – all over India
3. M/s Continental Carbon India Ltd, Ghaziabad
4. M/s Tata Teleservices Ltd, New Delhi
5. M/S Radico Khaitan Limited, Rampur (U.P.)

Under the project **Process Integration and Optimization in Pulp and Paper Industry** – X five Year Plan Project, a “Detailed Energy Audit, Performance Evaluation and Optimization studies” was conducted in the following four Pulp & Paper mills:

1. M/s Mysore Paper Mill, Bhadravati, Karnataka
3. M/s Nagaon Paper Mill, Jagi Road, Assam
4. M/s Bilt, Unit : ShriGopal, Yamunanagar

**Other Energy Audits of Interest:**

**Brief Overview:** Under the provision of Energy conservation act 2001, energy audit for buildings above 500 kW of connected load were made mandatory. On this regard being in NPC I was privileged to carry out energy audit of prestigious government buildings:

- Mini Secretariat, Chandigarh
- Vidhansabha, Dehradun
- Secretariat, Dehradun
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<td>Component Activities as called upon</td>
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