Training of ISO 50001 certification auditors in South Africa

Presented by: Hemant Grover
Industrial Energy Efficiency Project

• The project is a joint collaboration between
  – The Government, represented by the dti, the DoE
  – The Government of Switzerland, represented by SECO
  – UK Department of International Development

• The project is implemented by NCPC-SA
### UNIDO/ NCPC IEE Project

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<tr>
<th>Project objective</th>
<th>To reduce GHG emissions and enhance competitiveness of industry through improved energy efficiency and the transformation of the market for industrial energy efficiency products and services.</th>
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<td>Project components:</td>
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| **Policy and institutional support** | Development and establishment of:  
✓ National Energy Management Standard compatible with ISO 50001  
✓ Capacitation of management system auditors for ISO 50001  
✓ National IEE Monitoring, Verification and Benchmarking Programs  
✓ IEE Best-Practice Information, Dissemination and Recognition Programs  
✓ Incentives for IEE and other |
| **Capacity-building** | ✓ Energy Management Systems (EnMS) Expert Training  
✓ System Optimization (SO) Expert Training (steam, pumps, compressed air, ..)  
✓ Development and provision of tools to assist industry in developing and implementing EnMS and system optimization projects  
✓ Training of industry energy managers and engineers |
| **Pilot IEE projects** | ✓ Implementation of pilot EnMS and SO projects in selected enterprises |
EnMS training offered by the NCPC-SA

• SA Govt. identified the need for EnMS training
  – Mandated the NCPC to offer EnMS training
• Training offered on EnMS at the following levels:
  – 1 day: Introduction to EnMS
  – 2-day: Advanced EnMS training
  – 12 months: Expert Level EnMS training + Exam
  – 5-day: ISO 50001 Auditor Training + Exam
• 35 courses offered to-date, nationally
• Total of 869 candidates registered
Candidate Selection

• Training was developed with support from SAATCA (Southern African Auditor and Training Certification Authority)
  – Aligned to SAATCA’s CRT 6.20 Energy Management System Auditor

• Academic education and work experience

• Atleast 2 years Management systems experience (related to ISO 14,001 and ISO 9,001) in Southern Africa

• Successfully completed SAATCA certified courses: ISO 19011 and ISO/IEC 17021
Development Needs addressed by the training

- ISO 50001 fairly new standard in SA,
  - July 2011
  - SA was first to adopt the standard as a national standard
- Number of organisations are implementing EnMS for certification (10 organisations linked to NCPC)
- Capacity creation:
  - Certification audit of an EnMS against ISO/SANS 50001
EnMS knowledge and skill addressed

• Conducting a certification audit for ISO 50001:
  1. Technical grasp of Energy Performance improvement
     – Candidates were given an understanding of; SEU’s, EnPI’s, Baseline, Operational Control etc. from an auditing perspective
  2. Management Systems skills
     – Candidates were trained on auditing the management system side of ISO 50001, e.g. Documentation and record control, Roles and responsibilities matrix, etc.
Deploying and administering the Auditor Training

- UNIDO funded the development of all training material
- Developers and facilitators of the training:
  1. Deann Desai [USA],
     - expert for the U.S. Technical Advisory Group for Technical Committee 242
  2. Wendy da Cruz [SA],
     - +25 years experience in Management System auditing in SA. Served as SAATCA committee Chair for EnMS and EMS
  3. Hemant Grover [SA],
     - +13 years experience in EM in SA. BEng, registered CEM, registering as CMVP and CREP. SA TC 242 committee member and convenor for ISO 50002
Deploying and administering the Auditor Training…cont.

- Logistics and training administration was done by the skills development department.
- Classroom based training,
  - Lecturing, case studies, group discussions and group exercises (technical and MS oriented)
- Exam on last day,
  - Each facilitator marked the exam
Energy Metrics

Purpose of energy metrics

- Support for decision making
- Often subjective reasons
- We need to know how much energy we are using
- We need to know if performance is improving or not
- We need to know if we are meeting targets
- We need to be able to verify savings of improvements
- We need to establish the following:
  - Baseline
  - Baseload
  - Performance indicators (EnPIs)
  - Numerical basis
Outcomes from the training

- October 2012
  - 12 candidates registered
  - 9 passed the exam
- April 2013
  - 25 candidates registered
  - 20 passed
- In total 29 auditors passed exam on EnMS
- A number of requests for more such courses
  - Mercedes Benz SA internal auditors will be trained (Feb 2014)
Lessons learnt

- Most candidates had strong Management System auditing skills, but rather weak on technical skills,
  - Deepen an understanding of the technical aspect
  - Pre-2-day advanced EnMS course to boost technical learning
  - Practical exposure to technical system, HVAC, boiler, compressor to acquaint learners with systems
Resources available for the training program

- NCPC aimed to capacitate other training providers (SABS) to create sustainability of the auditor training for ISO 50001
- Knowledge and experience of the developers and facilitators may be shared
- Copyrights for the training material are held by UNIDO,
  - Requests for training material may be routed to UNIDO
CASE STUDY
Johnson Matthey-SA success

• JM – commenced EnMS implementation, 2012
  – Completed stage 2 certification
• EnMS Implementing consultant (Wendy) – qualified EnMS expert
  – Facilitator for ISO/ SANS 50001 lead auditor training
• Project manager (Hemant) – lead auditor facilitator & qualified EnMS expert
• Certification MS auditor (Peter) – qualified lead auditor (IEEP training)
• Technical assistance provided by (Moses) – qualified EnMS expert
Thank You!

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