

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

<p>Project objective</p>	<p>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.</p>
<p>Project components:</p>	
<p>Policy and institutional support</p>	<p>Development and establishment of:</p> <ul style="list-style-type: none"> ✓ 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
<p>Capacity-building</p>	<ul style="list-style-type: none"> ✓ 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
<p>Pilot IEE projects</p>	<ul style="list-style-type: none"> ✓ 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
- At least 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, Baselineing, 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!

Hemant Grover

BEng, MEM, CEM

Industrial Energy Efficiency Project SA

E-mail: HGrover@csir.co.za

National Cleaner Production Centre of South Africa

Pretoria: +27 12 841 3772 * **Cape Town:** +27 21 658 2776 * **Durban:** +27 31 242 2365

Email: ncpc@csir.co.za

Websites: www.ncpc.co.za www.iee-sa.co.za