Industrial Energy Efficiency Project South Africa

Alf Hartzenburg

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Department:
Trade and Industry
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Project Stakeholders, Scope and Objectives

➢ Scope

- 4 Year Project: April 2010 – End March 2014
- 5 Target Sectors: Automotive, Agro-Processing, Chemicals and Liquid Fuels, Metals & Engineering and Mining.

➢ Objective

To support industry in improving its energy performance thereby alleviating the country's acute power shortage while at the same time improving productivity, competitiveness and reducing CO_2 emissions.

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UNIDO

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs FDE
State Secretariat for Economic Affairs SECO

UKaid
from the Department for International Development

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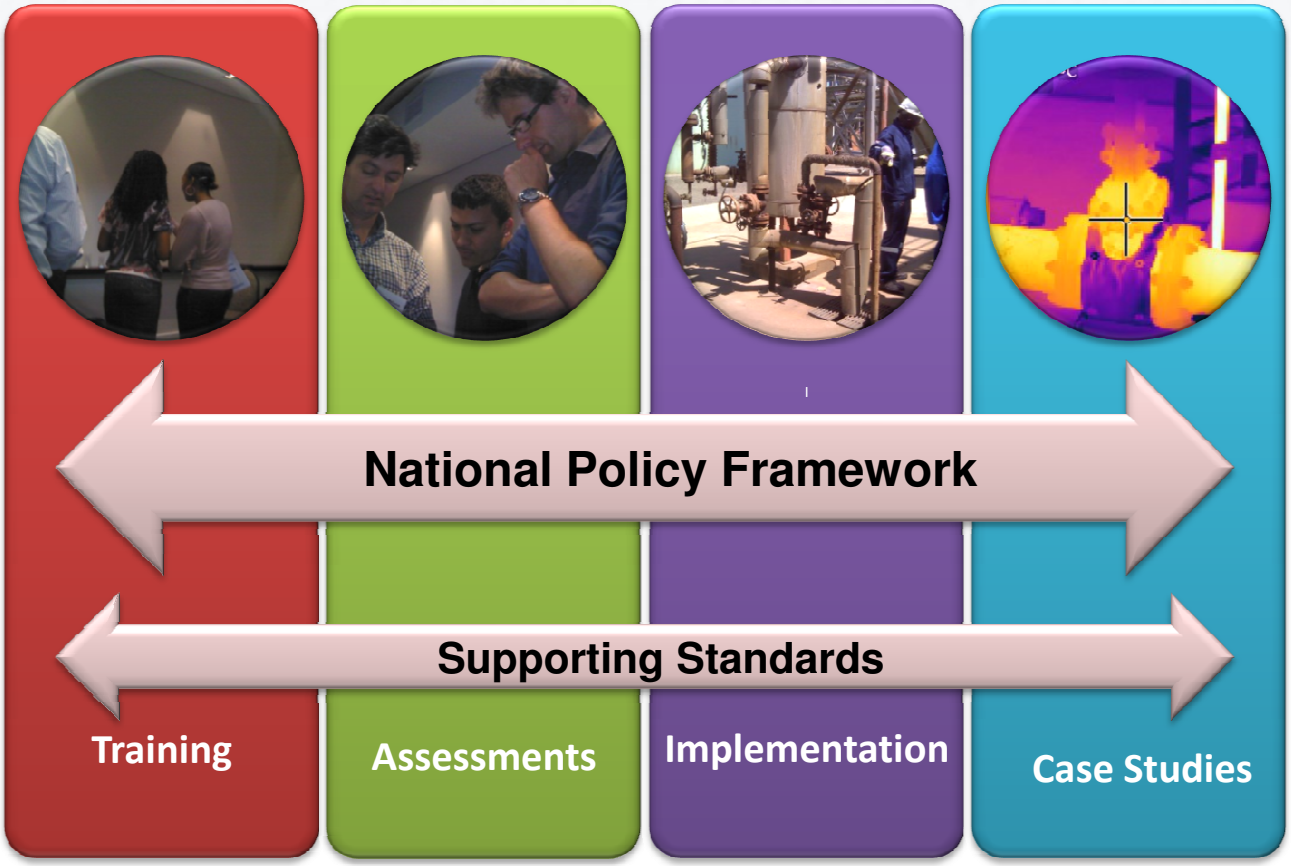
Project Components



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Training Outcomes

- ✓ **129** Training Workshops Nationally.
- ✓ **2 193** Engineers, Technicians and Managers trained.
- ✓ **67** EnMS/ESO National Experts Qualified.
- ✓ **16** National EnMS/ESO Certified Trainers.
- ✓ **29** ISO 50001 Lead Auditors accredited
- ✓ Growth of skilled energy consultant base.
- ✓ Embedded Energy Systems Optimisation philosophy in participating companies.

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Project Impact 2011 - 2013

Energy Savings (kWh)	Cost Savings (ZAR)	CO_2 Emission Reduction (tonnes)	Capital Investment (ZAR)
375 314 556	253 028 972	359 417	37 863 494

Barriers to IEE

- Limited policies and enforcement
- Duplicate EE programmes
- Lack of management awareness
- Lack of management commitment
- Limited knowledge and information
- Implementation financing not accessible
- Shifting priorities
- Results not sustained
- Narrow focus
- Defensiveness
- Unstable labour force

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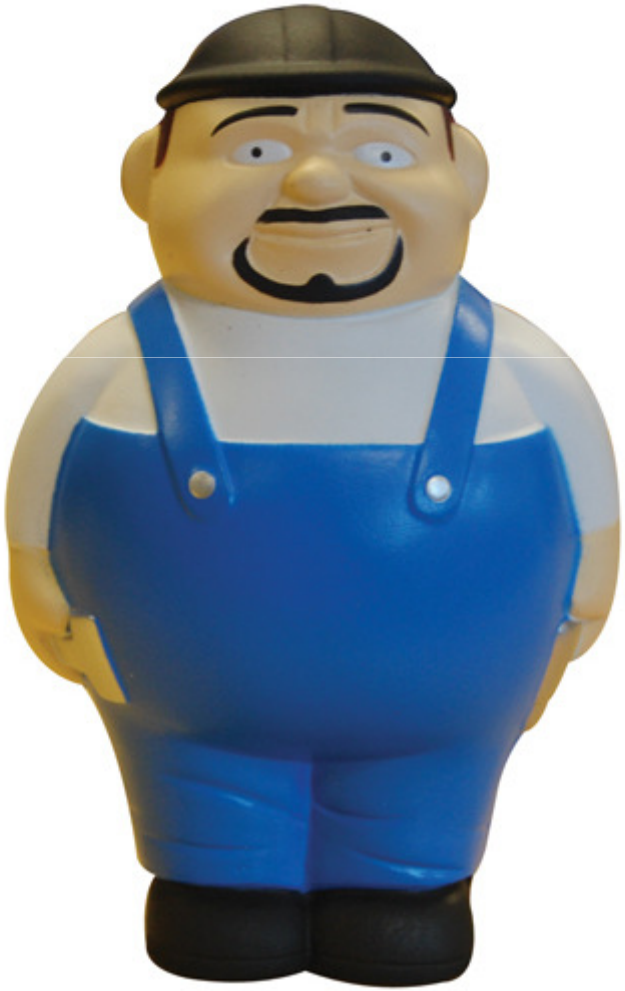
Changing Attitudes and Behaviour



Would you allow this man to make a R500 purchase on behalf of your company?

What about R10,000?

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Overcoming Barriers

- Create well defined national policy environment
- Identify ideal energy intensive industry sectors
- Provide funding for industrial energy programmes
- Develop sector flagships
- Organisational stability and commitment
- Resource allocation
- Access to technical expertise
- New technologies

Case Study Highlights

Company/Sector	Action Plans Implemented	Savings Secured
Toyota SA (Automotive)	Implemented EnMS in 2010. Savings represent 73 energy saving projects.	15 GWh in 3 years. Now no. 1 EE plant globally.
Kraft Foods (Foods)	Implemented EnMS in 320 days (2012/3) Switched off idle machines during Dec'12 shutdown.	2.9GWh 1.5yr Payback Saved 280 963kWh in 11 days during shutdown.
ArcelorMittal Saldanha (Metals)	Implemented EnMS in 2010. No cost electricity and LPG savings. Pump Systems, Conarc, WHR, etc...	R127M savings in 2012 with a R13M investment. 2.2GWh pump saving.
Johnson Matthey (Automotive)	4 large projects. Compressor/Chiller systems optimised and production related projects undertaken. Investment R620k.	9 425 084 kWh R7 728 569 (R3,2M behaviour change)
Gledhow Sugar (Agro-processing)	Replacing boiler fuel (coal) with a by product of sugar production viz. bagasse	R3,9M over 2 years with no investment cost.
TechniPlate (Metals Finishing)	Installed automatic temperature controls in 42 plating tanks.	421 344kWh Saving Payback - 4 months

Key Success Factors

- There must be the will to change (“Burning Platform”)
- There must be a plan
- There must be resources to implement the plan
- The resources must be equipped with the applicable skills
- Stability and reliability is a prerequisite for optimisation efforts.
- Management Commitment is essential.
- An Energy Management System is required to sustain savings and assists with structure.
- Measuring and reporting is important for both identifying opportunities and changing behaviour.
- Awareness and education is a critical part for sustained savings and should never be stopped.

thank you for your attention

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