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# Energy Efficiency and Behaviour A UNIDO Perspective

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**Expert Roundtable on Energy Efficiency & Behaviour in Developing Countries**  
Bonn, 12 December 2013

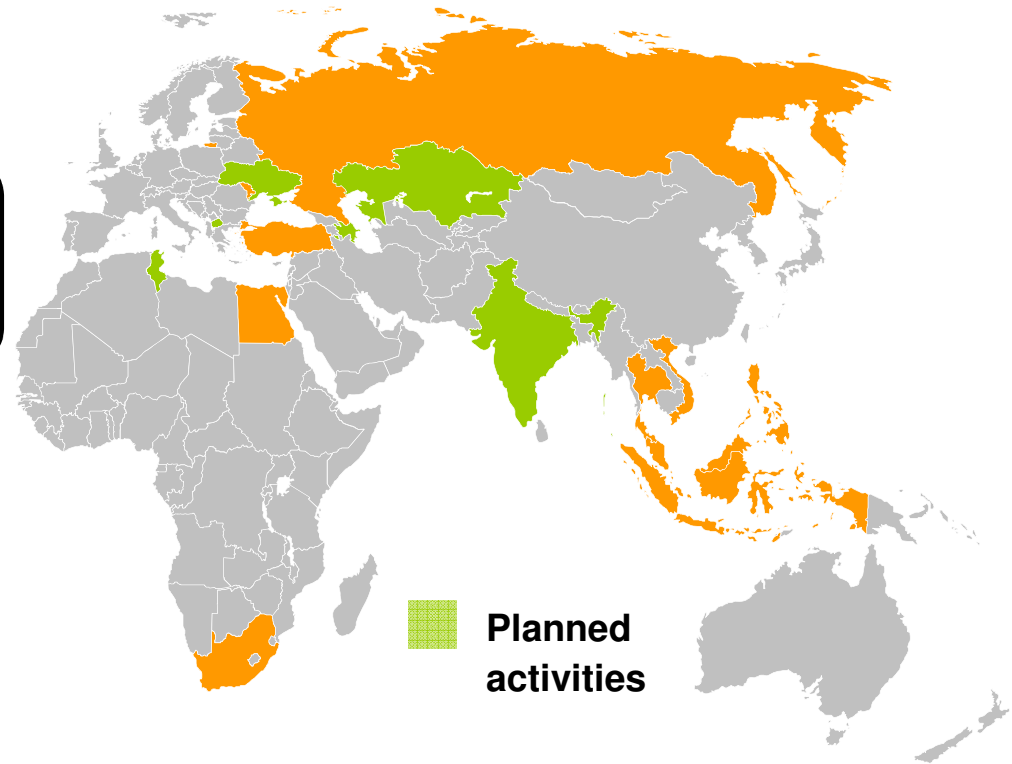


# UNIDO Programme on IEE/EnMS/ISO50001



**gef** GLOBAL ENVIRONMENT FACILITY  
INVESTING IN OUR PLANET

**Operational in 12 countries**  
**Planned activities in 6 countries**



**Operational**

- South Africa
- Moldova
- Russia
- Turkey
- Ecuador
- Malaysia
- Thailand
- Viet Nam
- Philippines
- Egypt
- Indonesia
- Iran

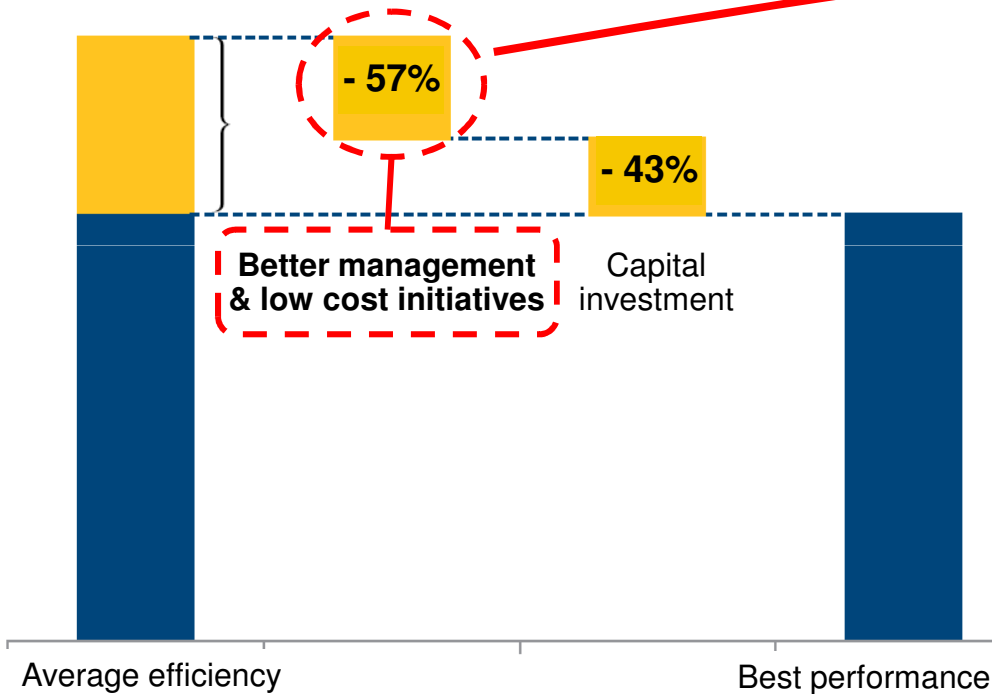
**Planned activities**

Funds with UNIDO	Co-Funding	Total Funding
52 Mio US\$	426 Mio US\$	478 Mio US\$



# Where EE opportunities are in Industry

## Benchmarking study in Foundry sector (Russia vs Germany)



Source: IFC, 2010

## ArcelorMittal Saldanha Works South Africa

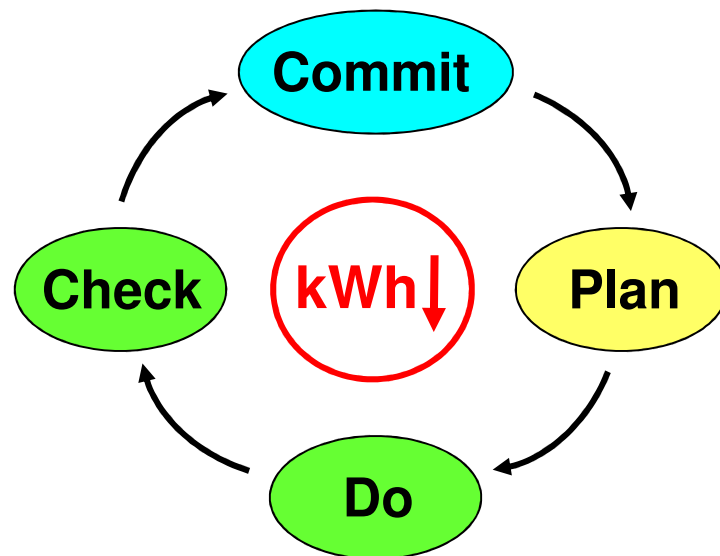
### Energy Efficiency Achievements 2011

#### Energy Management System Implemented

No. of Projects/Measures	11
Total Capital Investment (USD)	0
2011 Gross Financial Savings (USD)	9,076,000
Overall Payback Period (in years)	0
2011 Energy Savings (GWh)	79.95
2011 GHG Reductions (tons CO <sub>2</sub> )	77,000

# ISO 50001 & Energy Management Systems

## ENACT CHANGE!



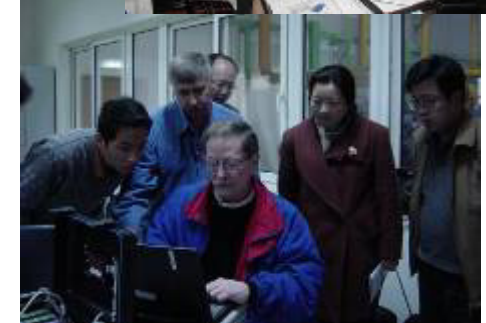
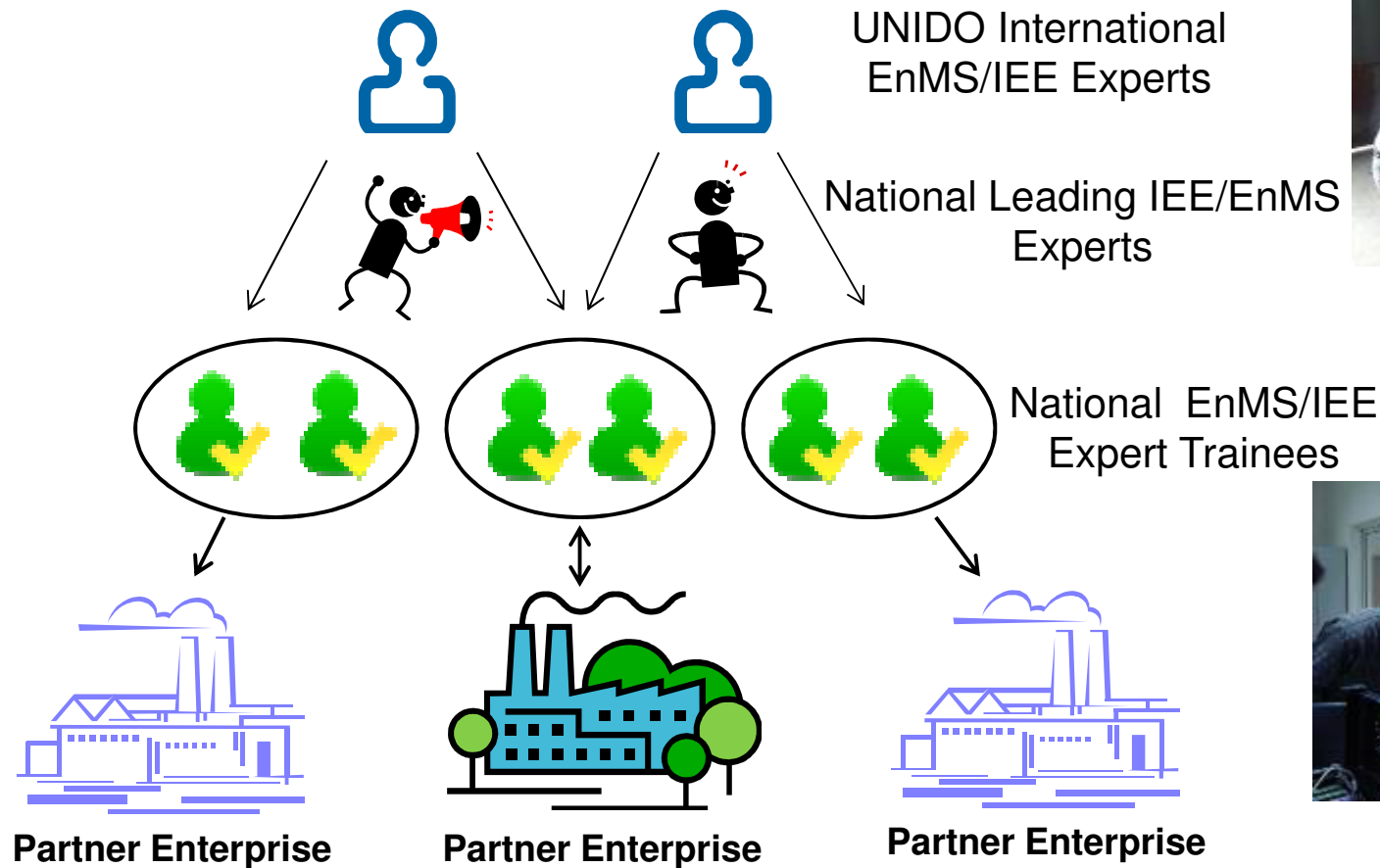
## ENACT CHANGE!

- ✓ Top management engage in EE
- ✓ Challenge operations and established practices
- ✓ Build internal technical skills
- ✓ Data and analysis discipline
- ✓ Focus on no-/low-cost measures
- ✓ Continual improvement

**EE INTEGRATED!**  
**ENERGY AND COST SAVINGS!**

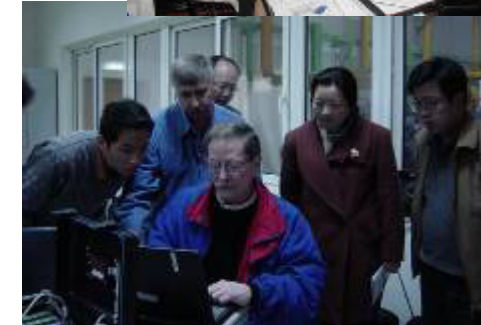
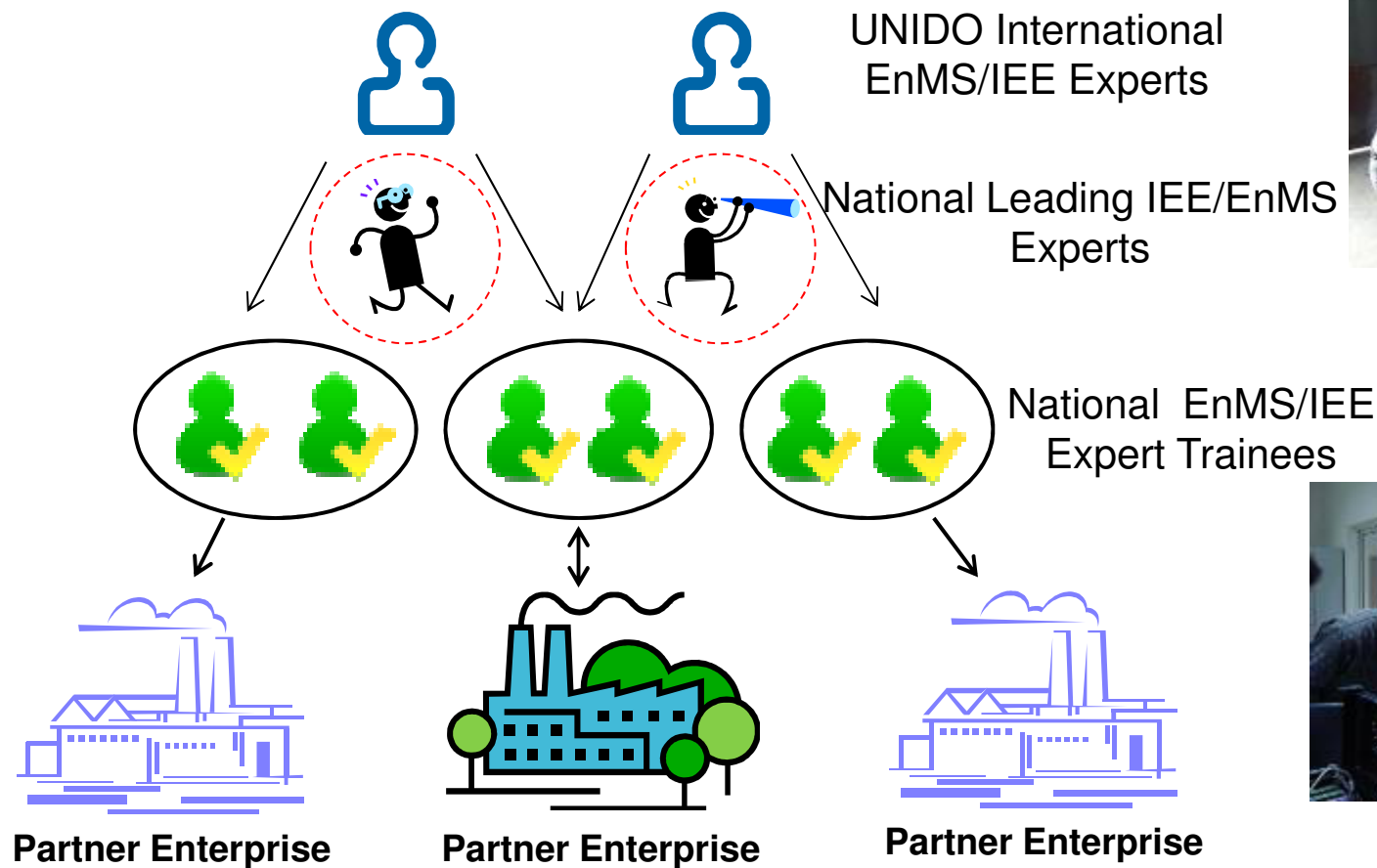


# UNIDO's Approach to Capacity Building and EnMS Implementation Programme





# UNIDO's Approach to Capacity Building and EnMS Implementation Programme





## Lessons Learned from UNIDO EnMS/IEE Experience

1. Top management engagement is necessary for EnMS & EE implementation ... but it is not always sufficient (personal and social norms can interfere)
2. Cultural context is an important factor in transferring knowledge and embracing change
3. Cultural context can vary substantially from country to country → lessons learned may not apply or become misleading
4. Minimize uncertainty about the proposed new scenario
5. The split incentive problem can arise at any level (personal and social norms have an influence)
6. Communication and partnership/relationship management are critical
7. It is not mainly about technology, engineering and numbers but it is mainly about people, processes and practices



## Some thoughts

*“If you want to make enemies, try to change something”*  
*Woodrow Wilson*

When we develop projects we look for certain indicators and features in identifying partners, beneficiaries, etc. that we think would help ... are all these right? are these enough?

Would it be feasible to design a methodology to define the “behavioural profile” of a targeted group in a given country?

Is there a “gender dimension” that should be considered?





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# Thank you for your attention

**For more information:**

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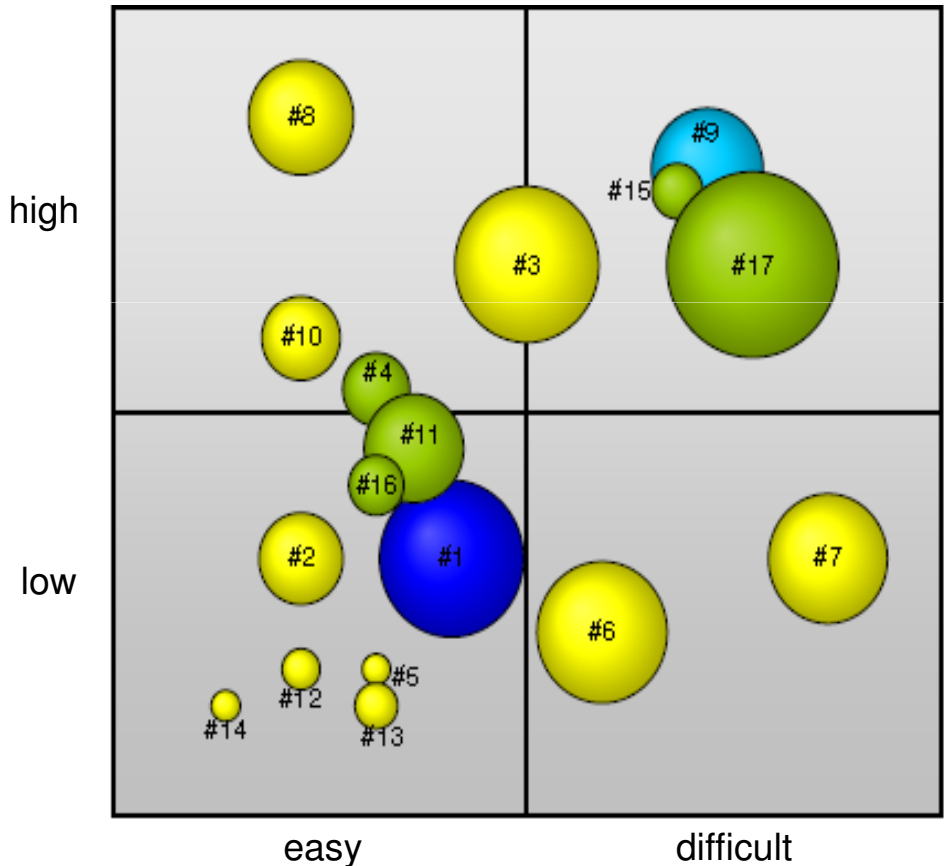
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# Why Energy Management Systems (EnMS)

Investment



Technical feasibility

## Financial and technology bias

- water
- gas/electricity
- gas
- electricity

NOTE: Size of circles proportional to savings

✓ The experience of many countries shows that companies tend to focus on high-cost and technically-difficult efficiency projects, and to overlook low-cost and easy opportunities



# GEF-4 UNIDO IEE Project in Moldova

<b>Project Title</b>	Reducing Greenhouse Gas Emissions through Improved Energy Efficiency in the Industrial Sector in Moldova
<b>Objective</b>	Improved Energy Efficiency of Moldovan Industrial Sector leading to reduced global environmental impact and enhanced competitiveness
<b>Components:</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Adoption of national Energy Management System Standard compatible with ISO 50001</li> <li><input type="checkbox"/> Strengthening national Monitoring and Verification of industrial energy performance</li> <li><input type="checkbox"/> Developing IEE Benchmarking Program and capacity</li> <li><input type="checkbox"/> Establishing IEE Best-Practice Information, Dissemination and Recognition Programs</li> <li><input type="checkbox"/> Strengthening national framework for energy auditors</li> <li><input type="checkbox"/> Strengthening capacity and expertise of Moldova Energy Efficiency Agency for IEE</li> </ul>
Policy support	
Capacity-building (consultants & enterprises)	
Pilot IEE projects	