

ECOWAS Initiative for Industrial Energy Efficiency

A world map with several regions highlighted in orange and green. The orange regions include Russia, China, India, and parts of Southeast Asia and Africa. The green regions include Mexico, Brazil, and parts of Africa and South America. The rest of the world is shown in grey.

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**ECOWAS-GFSE-GEF-UNIDO High Level
“Forum Towards Sustainable Energy For All in West
Africa. Paving the Way through Renewable Energy and
Energy Efficiency”**

30 October 2012

Accra, Ghana

Presentation Overview

- ✓ Introduction and linkage to the ECOWAS EE Policy
- ✓ Energy Management Systems & ISO 50001
- ✓ The Burkina Faso Experience
- ✓ Replication and up-scaling within ECOWAS
- ✓ Future prospects

ECOWAS EE Policy

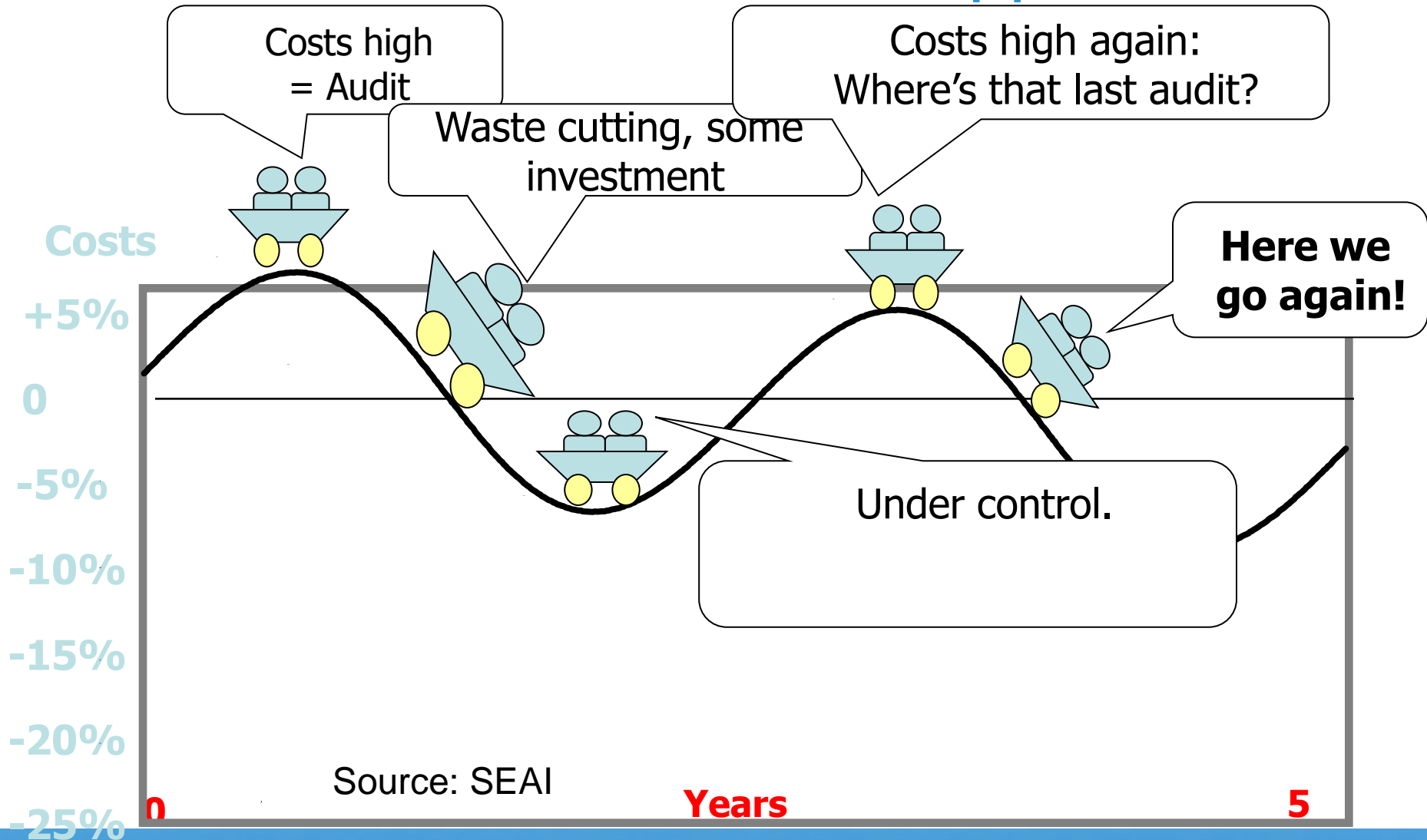
- ✓ Identifies potential sectors: Agro-food processing, textiles, leather, metal, ceramics, etc..
- ✓ Sets the need for public actions to establish incentive mechanisms, raise awareness, provide training and set-up financial schemes
- ✓ Highlights the role of women, fostering social development and the complementarity with renewable energy



The UNIDO approach to Industrial Energy Efficiency

Energy Management Systems and System Optimization

How to do it....Ad hoc approach



Source: SEAI

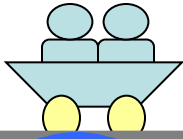
Energy Management Systems & Standards

- ✓ **Energy Management Systems (EnMS)** provide structured and systematic approach to integrate Energy Efficiency into industry corporate culture and daily management practices. EnMS provides:
 - A framework for understanding significant energy uses
 - Action plans for continually improve energy performance
 - Structure and organizational framework to sustain energy performance improvements over time and change of personnel

- ✓ **EnMS Standards** provide demonstrated policy-driven and market-based tools to disseminate energy management best-practices and support their implementation

Structured Approach

**Senior management
commit to programme**



Costs

+5%

0

-5%

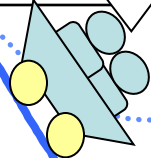
-10%

-15%

-20%

-25%

**Initial savings
sustained**



**Housekeeping first – then
investment**

**Becomes company
culture**

Investment

Source: SEAI

Years

0

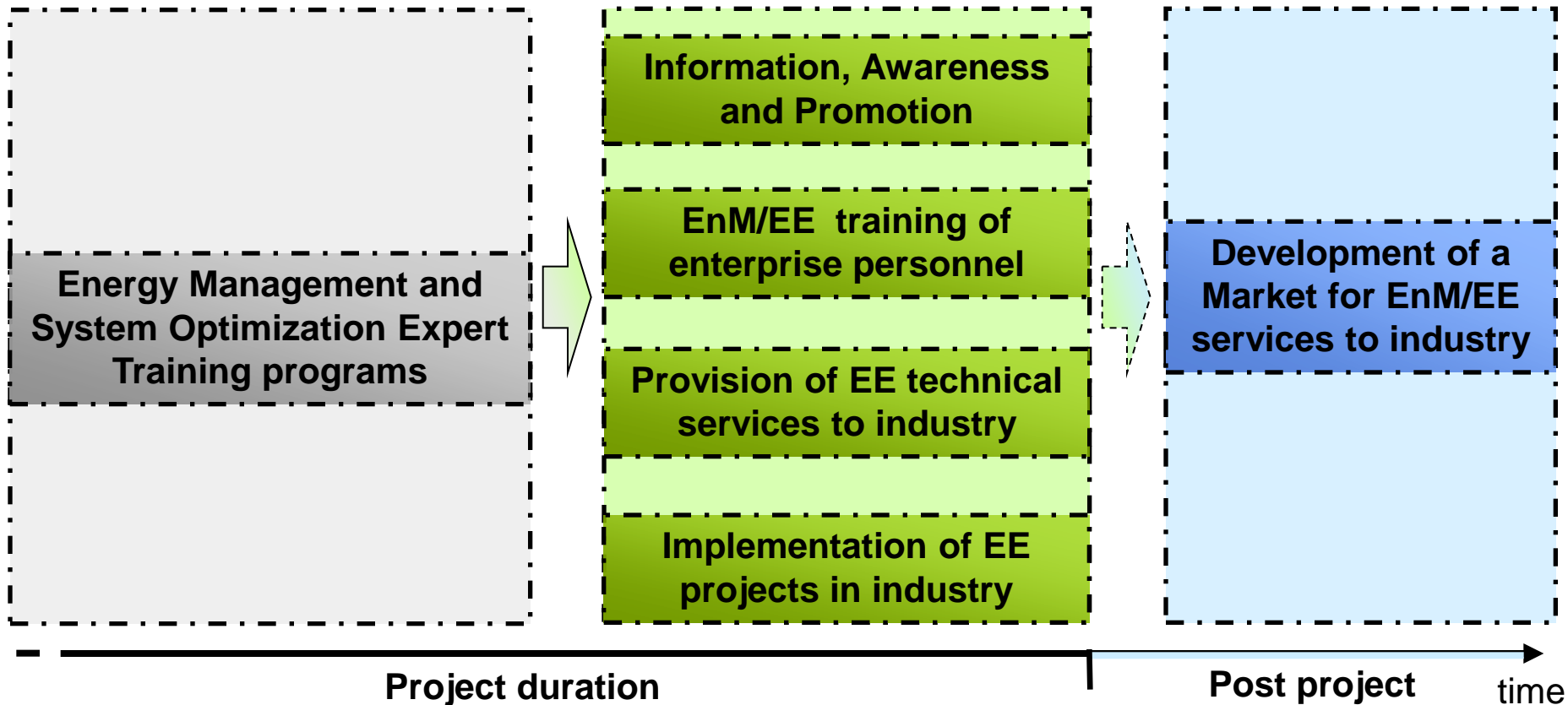
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Component v system approach

- ✓ Component approach involves segregating components and analyzing in isolation
 - Can result from education by particular technology sales engineer, e.g. variable speed drive, steam trap, etc.
- ✓ System approach involves looking at how the whole group functions together and how changing one can help or impact another
 - Requires more knowledge of the system and its interactions
- ✓ The energy savings opportunities from systems are far greater than from individual components
 - 2-5 % efficiency gains for individual components against 15-30% average efficiency gains through system optimization

UNIDO EnMS & SO Capacity Building programme

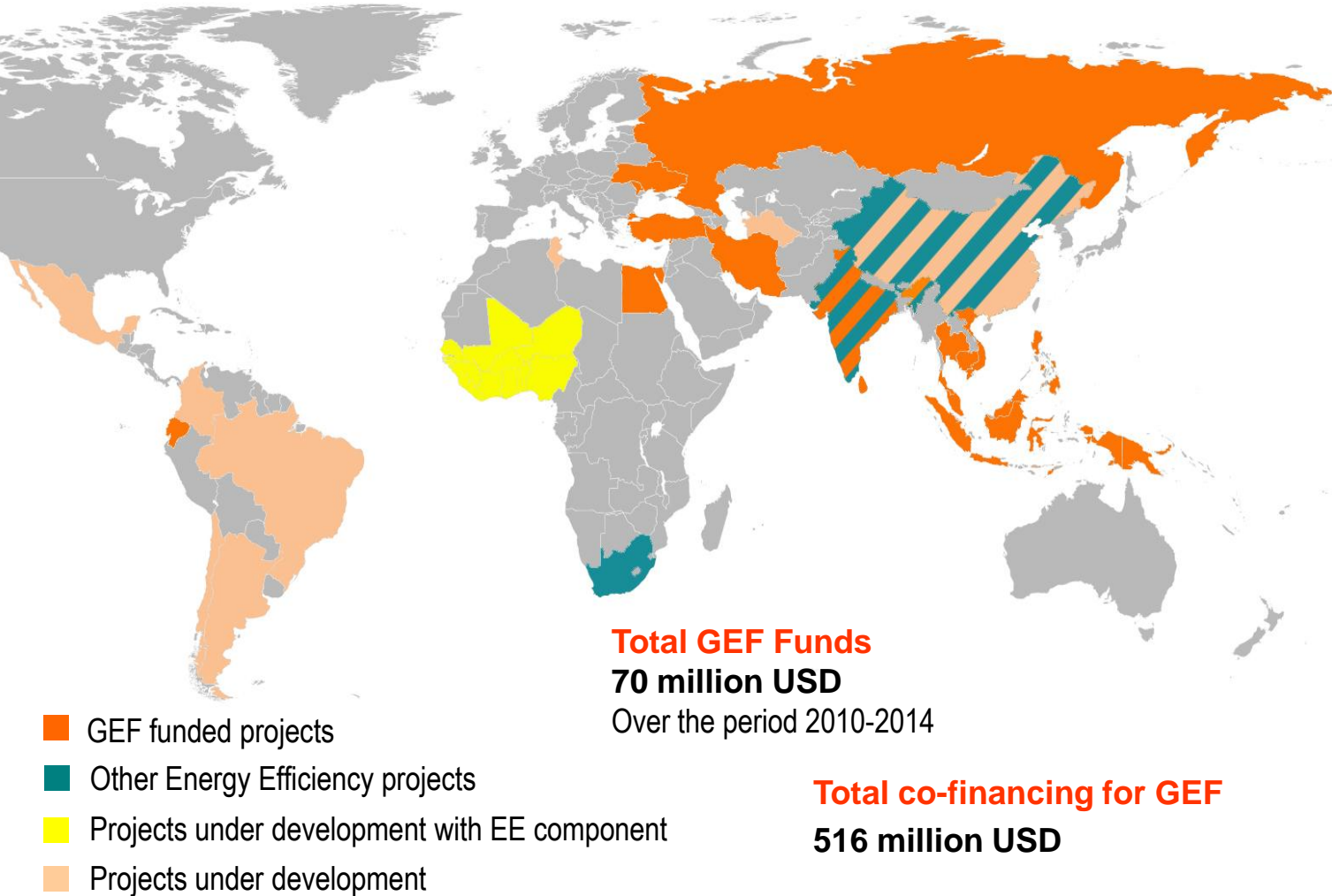
Creating market opportunities for energy efficiency



UNIDO IEE Projects Portfolio

More than 20 countries:

- Brazil
- Ecuador
- Egypt
- India
- Indonesia
- Iran
- Malaysia
- Moldova
- Philippines
- Russia
- Thailand
- Turkey
- Viet Nam
- Ukraine



Total GEF Funds
70 million USD
 Over the period 2010-2014

Total co-financing for GEF
516 million USD

Promoting energy efficient cook stoves for beer brewers (dolotiere) in Burkina Faso



Key facts about beer cook stoves

Design	4 pots per cook stove
Capacity	1050L of Dolo (beer)
Process duration	48 to 72 hours
Wood costs	<ul style="list-style-type: none">• CFA 250,000 to 500,000/month• 3 to 4 tons /stove/month
Pots	<ul style="list-style-type: none">• Ceramic (CFA 25000)• Aluminum (CFA 2000)
Energy Efficiency	45 to 50% and 60 to 65%
Payback period	Starting 6 weeks

Sector Characteristics

- ✓ Traditional industry
- ✓ 100% Female brewers (dolotiers)
- ✓ Mass concentrations of at least 3000 brewers in Ouagadougou alone
- ✓ 20% of the country's firewood consumption



Challenges to the introduction of cook stoves

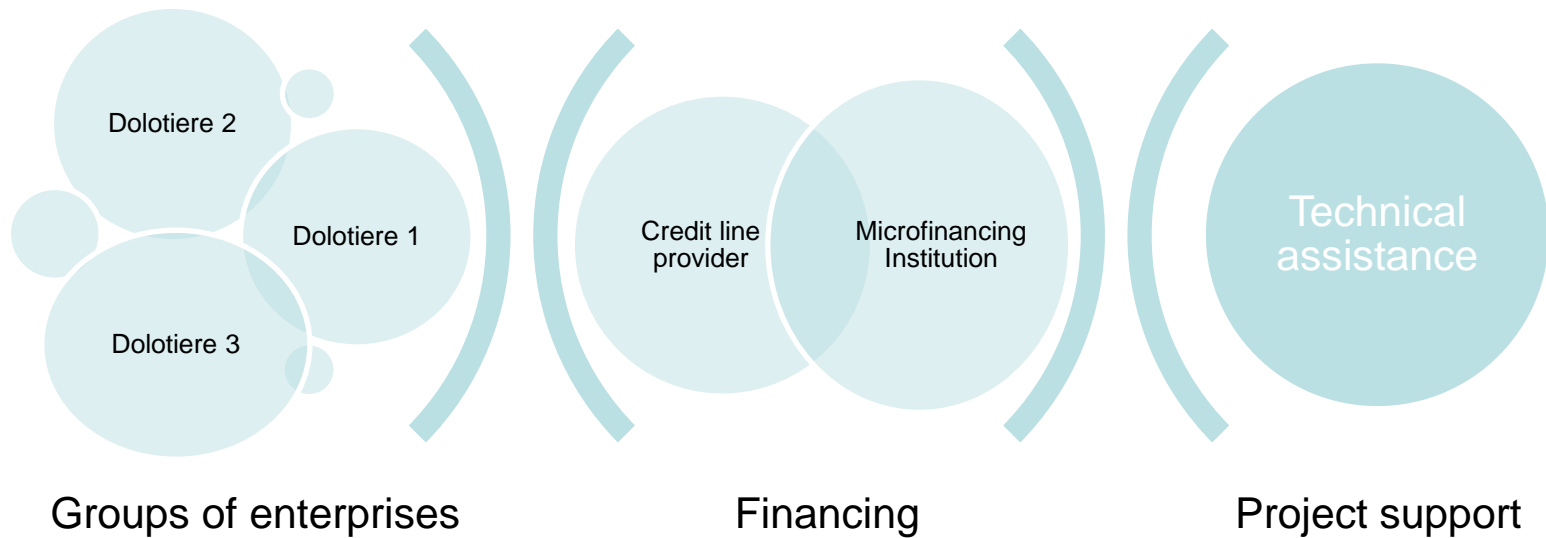
- ✓ Availability and pre-financing of sufficient low cost (scrap) input materials at
- ✓ Cost of training, quality assurance and uniform performance of stoves
- ✓ How to ensure large-scale and rapid dissemination in rural areas – incentives and consumer finance models
- ✓ Lack of awareness on reduced fuel collection/cost, time savings in cooking

1 – Technology introduction

- ✓ Training 100 cook stove artisans on improved designs and construction
- ✓ Training of the beer brewers on cook stove maintenance & operations
- ✓ Enforcing quality and standards to ensure performance



2 - Facilitating Financing & micro-credit



3 – Stimulating the market demand for improved cook stoves

- ✓ Developing micro-enterprise cluster to foster collective efficiency
- ✓ Establish vertical linkages between the cluster and the distribution & supply chains for improved cook stoves



4 - Replication through carbon financing

- ✓ Training 20 master project developers on GS project identification and development
- ✓ Establish a monitoring methodology
- ✓ Train 50 project operators on registration and monitoring requirements
- ✓ Establish a platform for interaction between project developers, project operators, DOE, CME, DNA and other relevant stakeholders

Scaling up in the ECOWAS region

Traditional Food Processing Technologies

- ✓ Beer brewing in Burkina Faso, Togo, Mali, etc..)
- ✓ Smoking fish in Ghana, Gambia, Nigeria and Sierra Leone
- ✓ Producing Garri from fermented cassava pulp in Benin, Cote d'Ivoire & Nigeria
- ✓ Producing dawadawa condiment through processing and fermenting African locust beans in Nigeria and other West African countries
- ✓ Commercial cooking, bakeries, etc..

Future Outlook



In collaboration with ECREEE

- ✓ Perform an assessment of IEE potential and opportunities in ECOWAS
- ✓ Develop a regional strategy for Industrial Energy Efficiency with national action plans



Thank you for your attention!

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2012 INTERNATIONAL YEAR OF
SUSTAINABLE ENERGY
FOR ALL