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UNIDO Energy Efficiency Programme in Eastern Europe

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Plenary Session on Regional Energy Prospects in 2010 and beyond

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UNIDO Today

UNIDO's mandate is to promote sustainable industrial development.

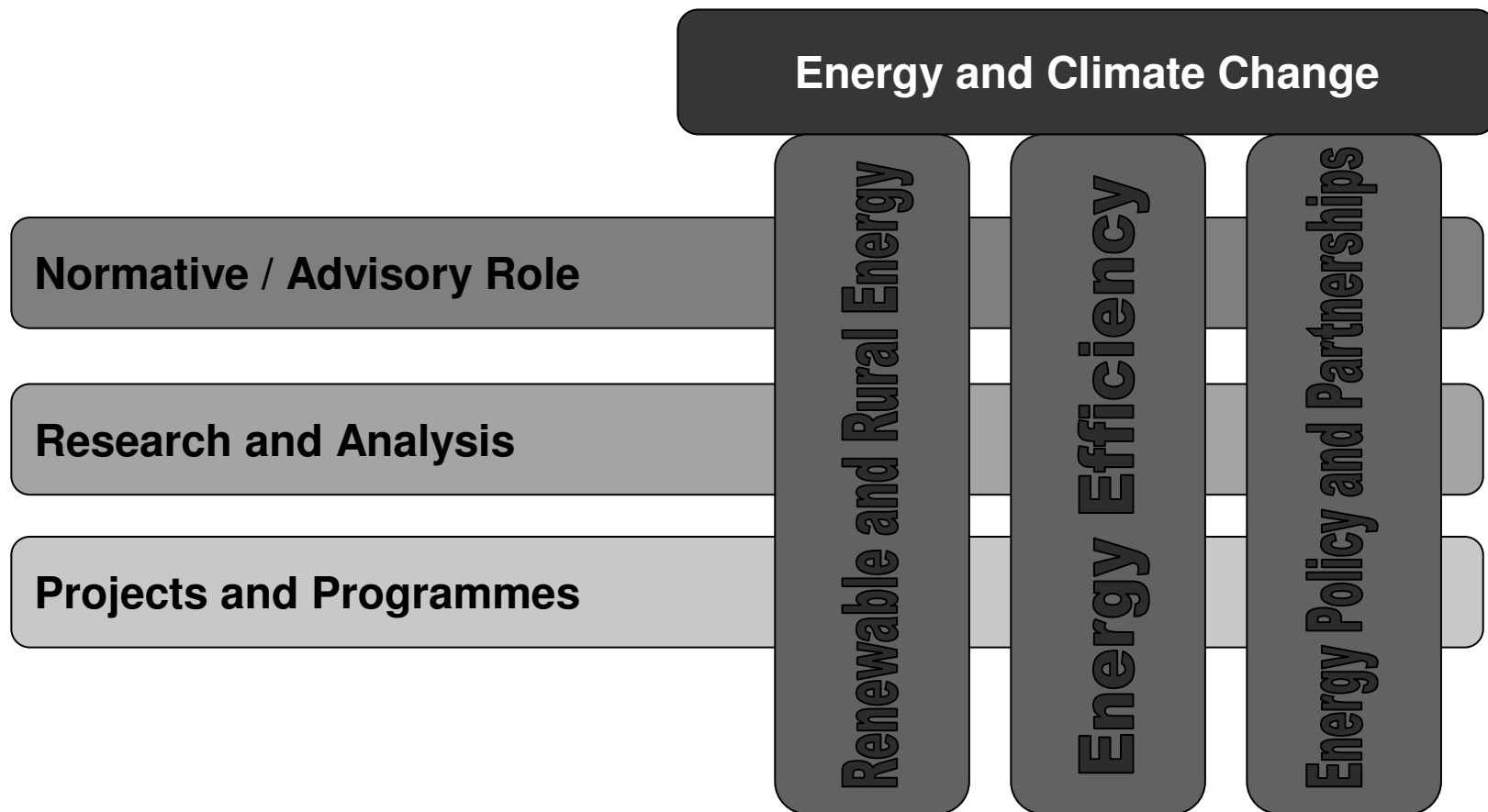
UNIDO is the only UN specialized agency promoting wealth and tackling poverty alleviation through industrial development

Thematic priorities:

- **Poverty Reduction through Productive Activities**
- **Trade Capacity-Building**
- **Energy and Environment**



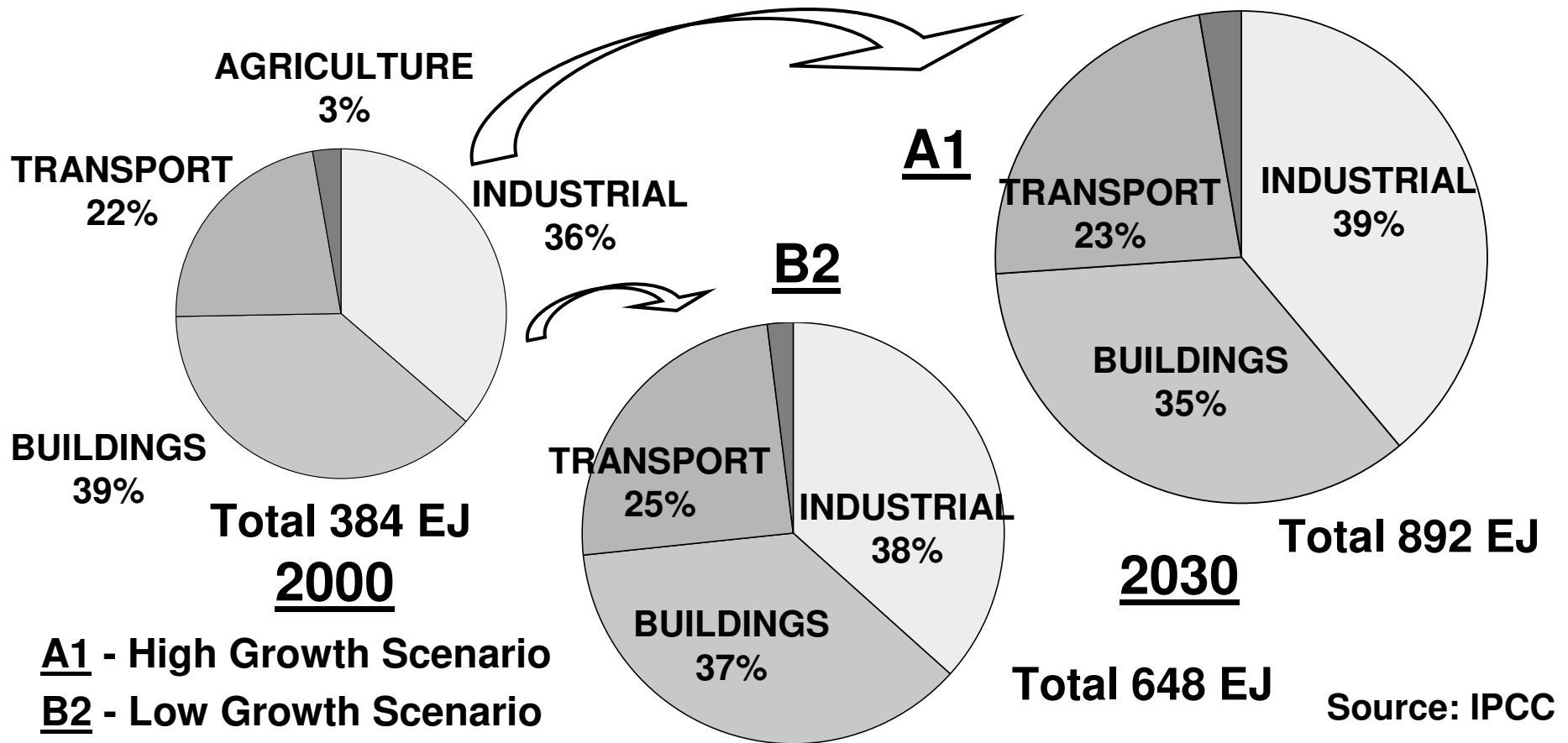
UNIDO's Key Role in the Global Energy Agenda





The Importance of Industrial Energy Efficiency

World Primary Energy Consumption 2000 vs 2030





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UNIDO Industrial Energy Efficiency Program

Focus areas

➤ **Energy management system standard**

Feb 08: ISO established Project Committee 242 (ISO/PC 242) to develop new ISO Management System Standard for Energy, ISO 50001

Prerequisite for sustainable, company wide & continued improvement of energy efficiency and performance

➤ **Systems optimization** (steam system, pumps, compressed air, refrigeration, etc.)

Not specific to particular sectors but applicable over the entire industry

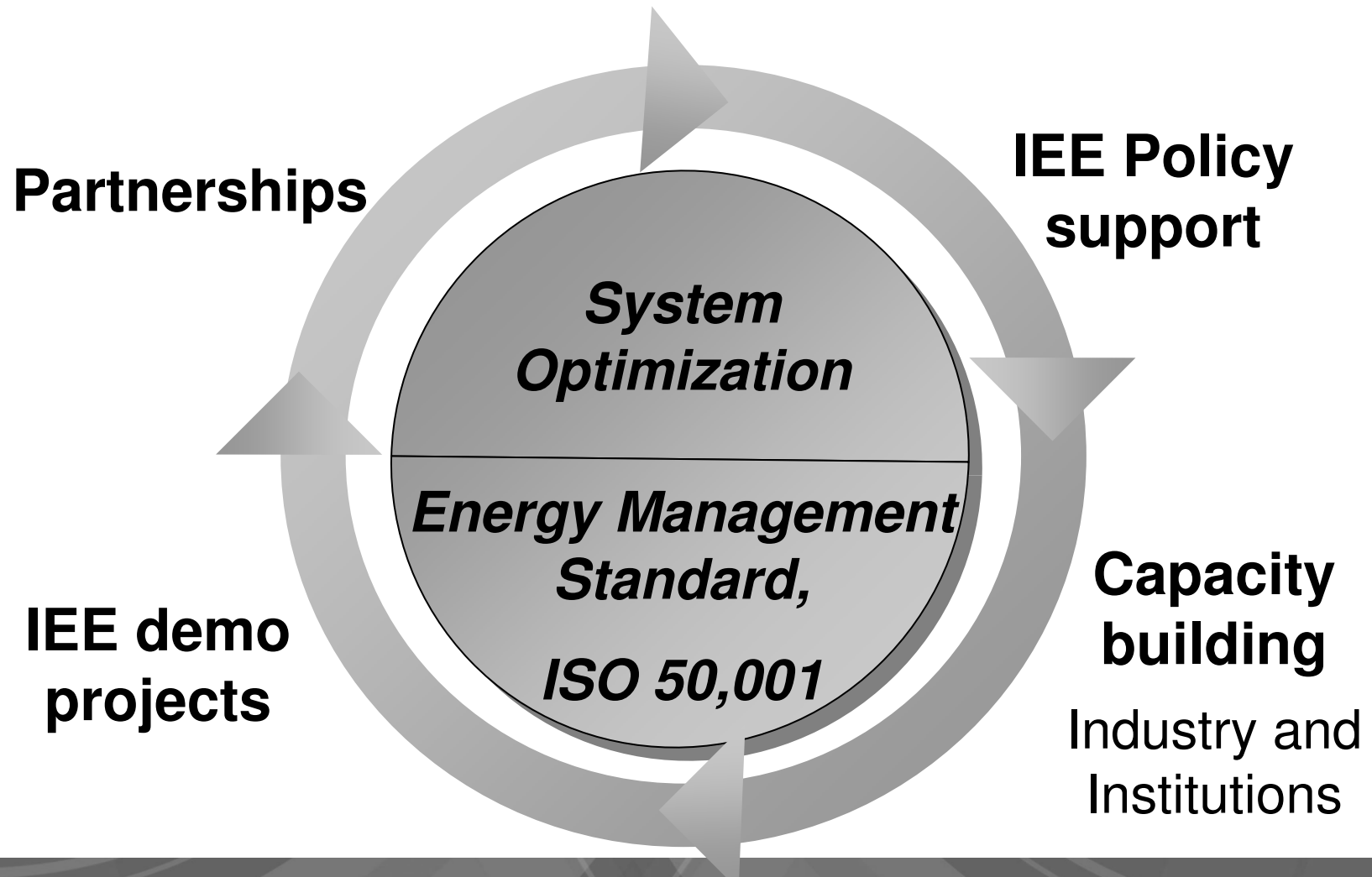


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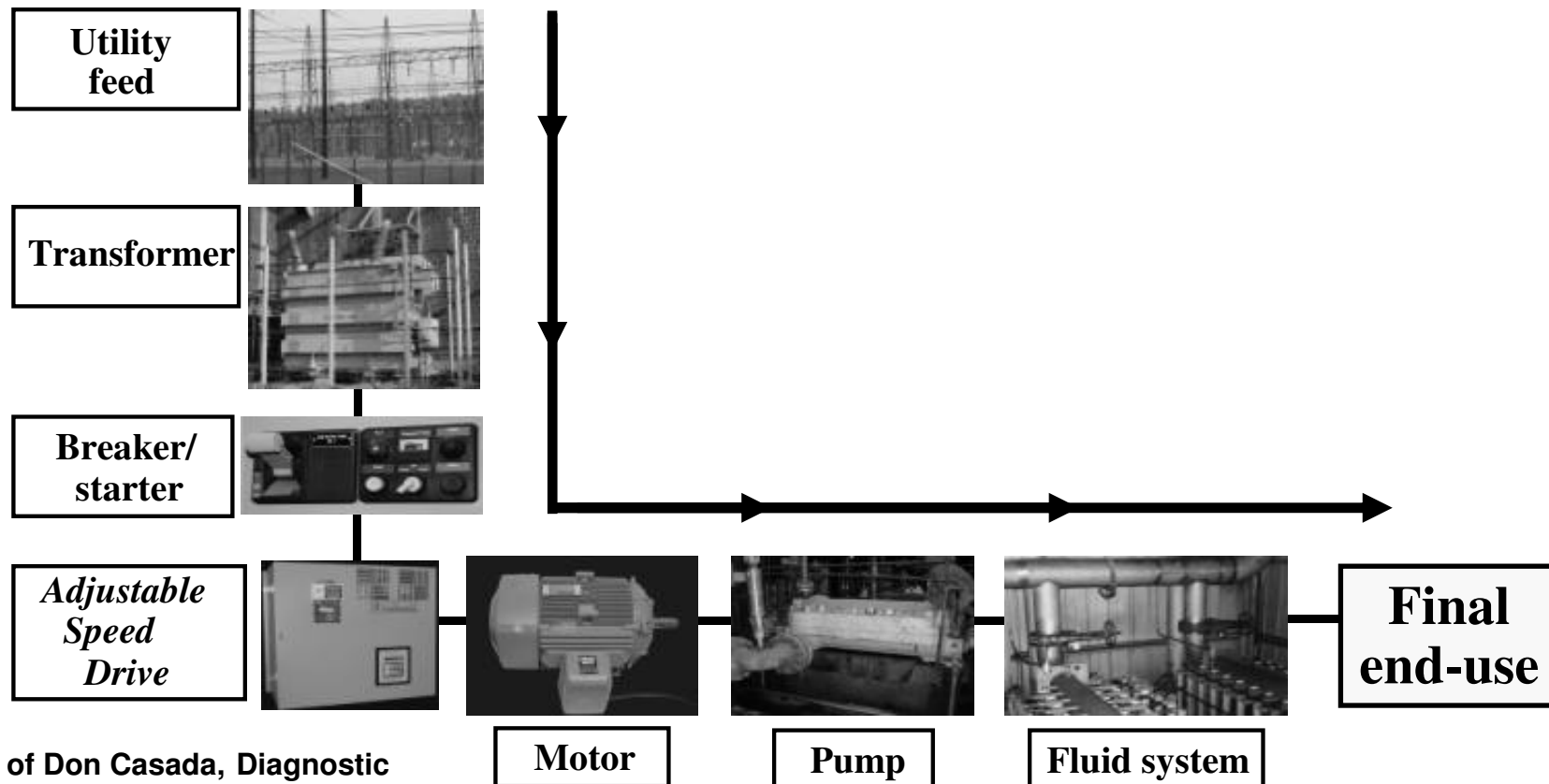
UNIDO Industrial Energy Efficiency Program





UNIDO Industrial Energy Efficiency Program

System Optimization



Courtesy of Don Casada, Diagnostic Solutions and US Department of Energy



UNIDO IEE Technical Cooperation Projects Portfolio

Typical project

Project objective	To reduce global greenhouse gas emissions through: <ul style="list-style-type: none"> - improved energy efficiency in industry - transformation of market for industrial energy efficiency products and services
Project components:	Development & formulation of policies, regulation & programmes aimed to support:
Policy support	<ul style="list-style-type: none"> - Adoption of energy management standards - Stimulation of market demand for energy efficiency goods and services
Capacity-building	<p>Technical training programme for energy efficiency, including energy management and systems optimization, in industry and for the supply chain to support investments in energy efficient technologies and operation.</p> <p>Development of tools and methodologies to assist industry in developing and implementing energy system optimization projects and energy management as well as local expertise.</p>
Pilot IEE projects	Demonstration systems optimization and energy management projects in selected factories participating in the project



UNIDO IEE Projects Portfolio

15 countries:

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

Total portfolio value

300 million USD over
the period 2010-2014

Total UNIDO Budget

70 million USD

Balance is parallel cash co-financing and in-kind contributions

■ GEF funded projects



UNIDO IEE Technical Cooperation Projects Portfolio in Eastern Europe

UNIDO Projects under GEF (Global Environment Facility) funding and national co-funding

Developing countries

Europe: Moldova, Russia (2), Turkey, Ukraine

Budget over the period 2010-2014

GEF contribution Million US\$	Co-financing Million US\$	Total Million US\$
37.4	203.4	240.8



UNIDO-GEF Project in the Republic of Moldova:

Reducing Greenhouse Gas Emissions through Improved Energy Efficiency in the Industrial Sector

- **Objective:** Improved energy efficiency of Moldovan industrial sector leading to reduced global environmental impact and enhanced competitiveness.

- **Expected Outcomes:**
 1. Legal and regulatory frameworks to support sustainable IEE to stimulate the creation of a national market for IEE products and services.
 2. Energy efficient technologies for system optimization and energy management

- **Budget:** total – US\$ 3.12 million
(US \$ 1 million - GEF funding, US\$ 2.12 million – co-funding)

- **Duration:** 4 years, tentative start – May/June 2010

- **Project components:**
 - Policies, regulation and programs to promote and support sustainable industrial energy efficiency.
 - Capacity building and development of tools.
 - Pilot projects (system optimization and energy management system).



UNIDO/EBRD- GEF Project in the Russian Federation:

Market Transformation Programme on Energy Efficiency in GHG-Intensive Industries in Russia

- **Objective:** Reduce GHG emissions by transforming the market for industrial energy efficiency in GHG-intensive industries
- **Expected Outcomes:**
 - Improved industrial energy efficiency in heavy industries;
 - Improved commercial prospects of industrial borrowers.
- **Budget:** total – US\$ 151.4 million, US\$ 15.4 million - GEF funding
US\$ 7.35 million UNIDO and US\$ 8.04 million EBRD; US\$ 135.75 million – co-funding
- **Duration:** 5 years, start – March 2009
- **Project components:**
 - National programme to establish voluntary target setting agreements with industry
 - National programme to implement ISO-compatible national energy management standards
 - Capacity building for energy efficiency (energy management and systems optimization)
 - Financing mechanism for energy efficiency investment



UNIDO-GEF Project in the Russian Federation (2): **Phase out of HCFCs and Promotion of HFC-free** **Energy Efficient Refrigeration and Air-conditioning Systems**

- **Objective:** To phase out 600 ODP tonnes of HCFCs in the foam and refrigeration, and introduce more energy efficient designs through technology transfer
- **Expected Outcomes:**
 - Policy, legal framework and institutional capacity to assess and accelerate HCFC phase out and reduction of HCFC consumption.
 - Most appropriate phase out strategies for different subsector.
 - Phase out of HCFC consumption in the key consuming sectors of foam and refrigeration

Budget: total – US\$ 58 million (US \$ 18 million - GEF funding, US\$ 40 million – co-funding)

- **Duration:** 5 years, tentative start – June 2010
- **Project components:**
 - Building institutional capacity
 - HFC and HCFC life cycle performance analysis
 - Meet Montreal Protocol phase out obligations



UNIDO-GEF Project in Turkey:

Improving Energy Efficiency in Industry

- **Objective:** To improve energy efficiency by applying efficient management energy system by different conservation measures and energy efficient technologies.
- **Expected Outcomes:**
 - Enabling policy and institutional framework in place to support industrial energy efficiency
 - Enhanced awareness and capacity to implement measures for improving the energy efficiency
 - Modern energy management practices and energy saving measures demonstrated and tested
- **Budget:** total – US\$ 18.8 million (US\$ 5.9 million - GEF funding, US\$ 12.9 million – co-funding)
- **Duration:** 5 years, tentative start – March 2010
- **Project components:**
 - - Strengthening the policy and institutional framework;
 -
 - - Awareness raising and capacity building of the industry and private energy service providers;
 -
 - - Demonstrating state-of-art in energy management practices and of different energy saving measures and business and financing models;



UNIDO-GEF Project in Ukraine:

Improving Energy Efficiency and Promoting Renewable Energy in Agro-Food and other SMEs

- **Objective:** Scaling up energy efficiencies and enhanced use of renewable energy technologies for fuel switching in the energy intensive manufacturing SMEs in Ukraine

- **Budget:** total – US\$ 17.8 million
(US \$ 5.14 million - GEF funding, US\$ 12.65 million – co-funding)

- **Duration:** 5 years, tentative start - January 2011

- **Project components:**
 - policy review, policy incentives, action plans
 - diagnostic studies, EE and RE technologies recommendations, plans
 - scaling up strategy at the industry level in energy intensive SMEs clusters
 - capacity building at the selected SMEs



UNIDO International Centre for Hydrogen Energy Technologies (ICHET)

- ICHET founded in 2003 under Agreement between UNIDO Turkish Government (US\$ 40 million), located in Istanbul
- **Purpose:** to demonstrate hydrogen technologies, possible application and facilitate their widespread use
- **Focus:** conduct pilot hydrogen energy projects in Turkey and worldwide; R&D programmes, test laboratories and training; hydrogen energy database; conferences and workshops
- **Examples:** Bozca Hydrogen island, Turkey, Fuel cell fork-lift, Turkey Hydrogen FC boat, Turkey, H2 3-wheelers, New Delhi, India



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Thank you

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