

Industrial Development Report 2011

Industrial energy efficiency for sustainable wealth creation

Capturing environmental, economic and social dividends



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

United Nations Industrial Development Organization (UNIDO)

INDUSTRIAL DEVELOPMENT REPORT

Industrial energy efficiency for sustainable wealth creation

Capturing environmental, economic and social dividends

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Outline

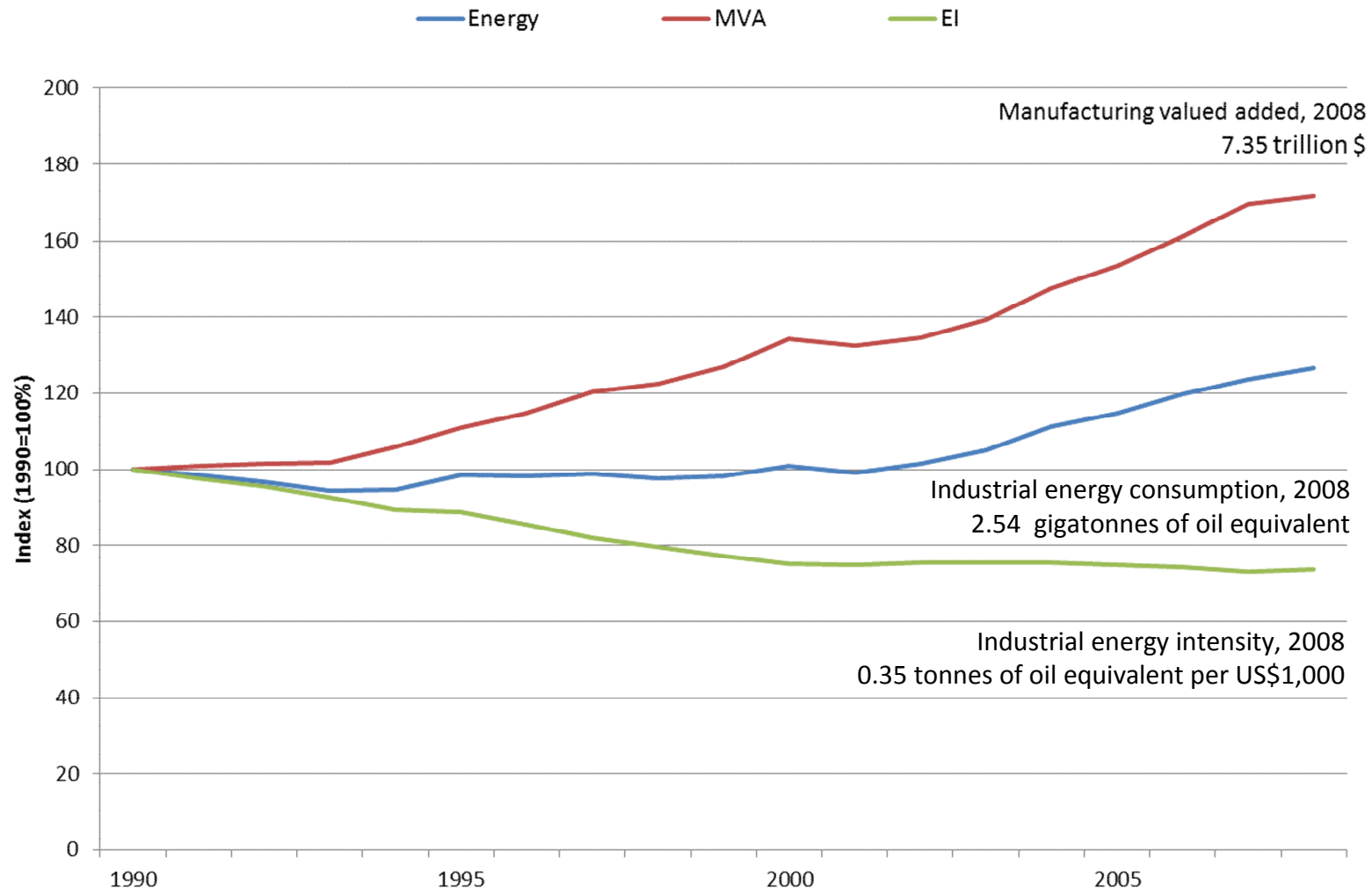
- Energy intensity trends
- Industrial energy efficiency dividends
- Energy efficiency policies for developing countries: national and international
- Support material

The background is a solid blue color with various faint, light-blue icons and patterns. A large, wireframe globe is centered in the background. To the right of the globe, there is a large blue arrow pointing right. Below it, there is a smaller blue square icon with a white arrow pointing right. At the bottom right, there is a binary code sequence '1010101'. On the left side, there are several vertical bars of varying heights, resembling a bar chart. The word 'TRENDS' is written in the center in a bold, white, sans-serif font with a slight drop shadow.

TRENDS



Global industrial energy intensity trends (1990-2008)

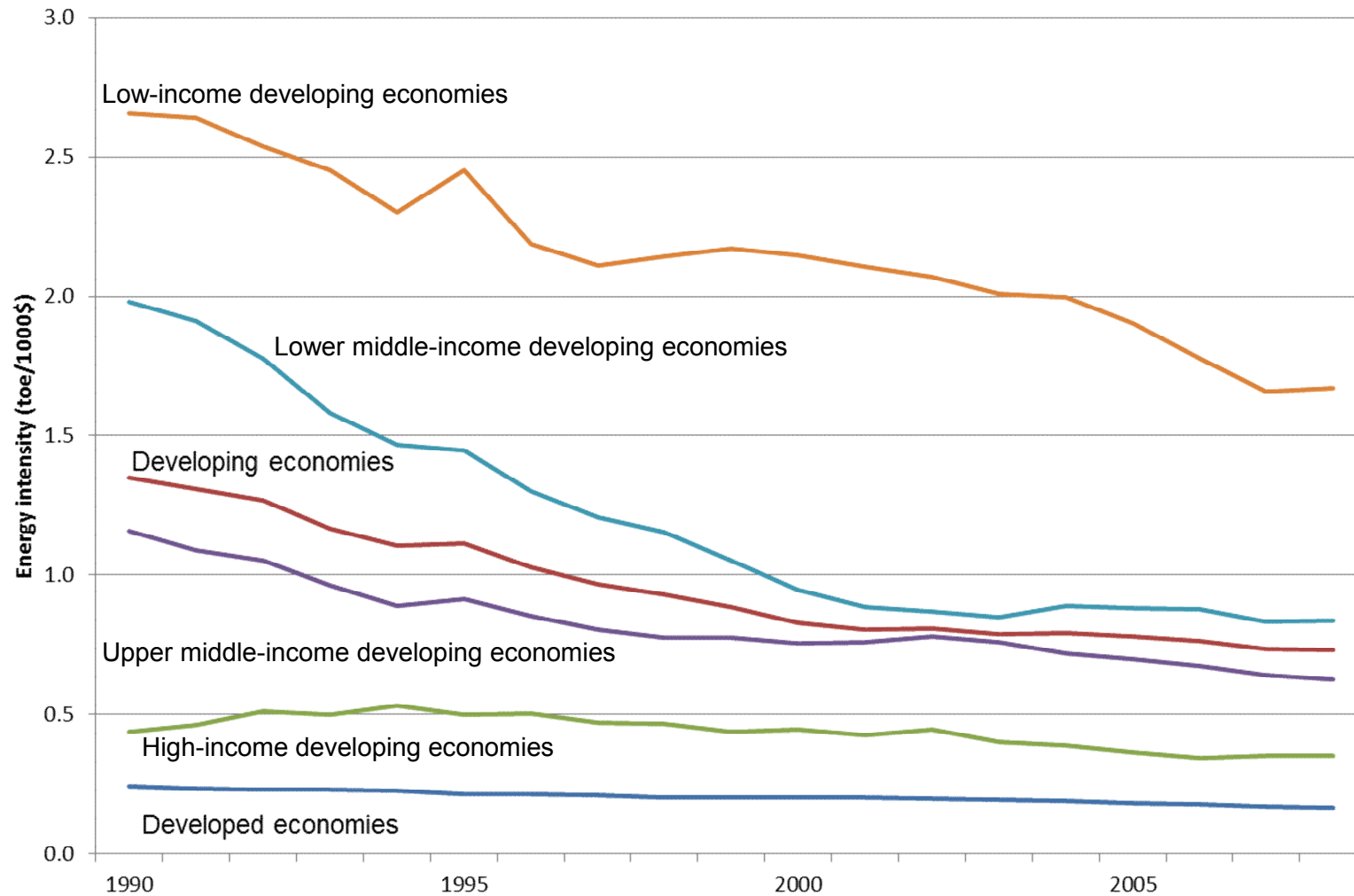


Note: Industrial energy intensity in 2000 US dollars.
Source: UNIDO 2010e,f,g; IEA 2010c.



Industrial energy intensity

(By income group, 1990-2008)



Note: Industrial energy intensity in 2000 US dollars.

Source: UNIDO 2010e,f,g; IEA 2010c.

The background is a solid blue color with a complex pattern of white and light blue lines and shapes. A large, semi-transparent globe with latitude and longitude lines is centered. Overlaid on the globe are various geometric shapes: a large arrow pointing right, a square with a right-pointing arrow, and a series of dots connected by a line. In the bottom right corner, the binary sequence '1010101' is visible. The overall aesthetic is technical and digital.

DIVIDENDS

Environmental

- Mitigation potential of industrial energy efficiency can be substantial since:
 - industry accounts for 25% of all GHG emissions
 - manufacturing and construction directly and indirectly account for 37% of CO₂ emissions (developing countries 47%)
- Industrial energy efficiency can help reach CO₂ reductions of around 1.3 Gt equivalent to global emissions reductions of approximately 4% from 2006 levels



Economic



- Industry expenditure on energy estimated at \$1trillion a year, 55% in developing countries
- Investing in energy efficiency projects is profitable:
 - Paybacks of 30 months
 - 40% IRR for projects with an expected lifetime of five years
- Cost savings from best available technologies:
 - \$65 billion in developed countries
 - \$165 billion in developing countries
 - 23% of total energy costs and around 3% of total MVA
- ‘All rounders’: better product quality, lower throughput and waste and more innovation



**Technical savings potential
arising from industrial energy-efficiency improvements (%)**

Sector and product	Developed countries	Developing countries
Process sectors		
Petroleum refineries	10-15	70
Chemical and petrochemical		
Steam cracking (excluding feedstock)	20-25	25-30
Ammonia	11	25
Methanol	9	14
Non-ferrous minerals		
Alumina production	35	50
Aluminium smelters	5-10	5
Other aluminium	5-10	5
Copper smelters		45-50
Zinc	16	46
Iron and steel	10	30
Non-metallic minerals		
Cement	20	25
Lime		
Glass	30-35	40
Ceramics		
Combined sectors		
Pulp and paper	25	20
Textile		
Spinning	10	20
Weaving		
Food and beverages	25	40
Other sectors	10-15	25-30
Total	15	30-35
Excluding feedstock	15-20	30-35

Yet, there is a 25-30% potential for obtaining even more dividends and to keep the rate of energy consumption under check



POLICIES

At the national level

- Laws, regulations, institutions and programmes
- Negotiated agreements
- Information-based instruments
- New technology and innovation support
- Market-based instruments
- Financial facilities



At the global level

- SE4ALL initiative
- Setting energy-intensity targets and standards
- Facilitating technological change
- Contributing to international technology transfer
- Promoting international financing
- Establishing an international monitoring and coordinating function

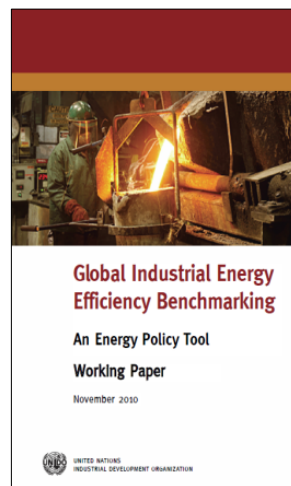
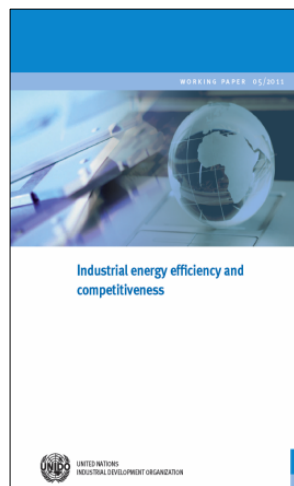


The background is a solid blue color with several faint, light-blue graphical elements. A large globe with latitude and longitude lines is centered. Overlaid on the globe are various network-related icons: a square with a right-pointing arrow, a square with a right-pointing arrow and a curved line below it, and a series of dots connected by a line. In the bottom right corner, the binary sequence '1010101' is visible. The text 'SUPPORT MATERIAL' is centered in a bold, white, sans-serif font with a slight drop shadow.

SUPPORT MATERIAL



IDR working papers (14)



Available at www.unido.org



UNIDO database

on Industrial Energy Efficiency policies

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DEMONSTRATION IEE PROJECTS
(South Africa)

In 2010, the 'UNIDO Industrial Energy Efficiency Programme' was launched as a joint collaboration between...

[See details](#)

WELCOME

UNIDO's Industrial Energy Efficiency Policy (IEEP) Database offers access to information on energy-related policy measures implemented or planned to improve energy efficiency on a national, regional or global basis.

The IEEP Database is based on information collected by UNIDO from multiple sources including international organizations, national government and private companies. Focus is paid to specifically developing countries in Latin America and the Caribbean, China, Africa, the Middle East and Eastern Europe.

Please note the IEEP Database is not exhaustive. If you believe information is missing or not accurate, please help us to improve the quality of this service by contacting us or filling out the [policy submission form](#).

DID YOU KNOW...

...that global industrial energy intensity dropped some 25 percent over 1990–2000, but stabilized more recently at around 0.35 toe per \$1,000 of manufacturing value added?

...that industrial energy intensity has been inversely related to national income since 1990. On average over 1990–2008, developed countries had the lowest energy intensity (0.2 toe per \$1,000), and low-income developing countries had the highest (2.2 toe per \$1,000).

[Find out more](#)

FEATURED

Industrial Development Report 2011
Industrial energy efficiency for sustainable wealth creation
Capturing environmental, economic and social benefits

Industrial Energy Efficiency is the main theme of UNIDO's Industrial Development Report 2011.

[More](#)

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THANK YOU

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