

# Multiple benefits of energy efficiency in buildings and the urban environment

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# Multiple Benefits of Energy Efficiency

## International

- Energy price reduction
- Greenhouse gas emissions reduction

## National

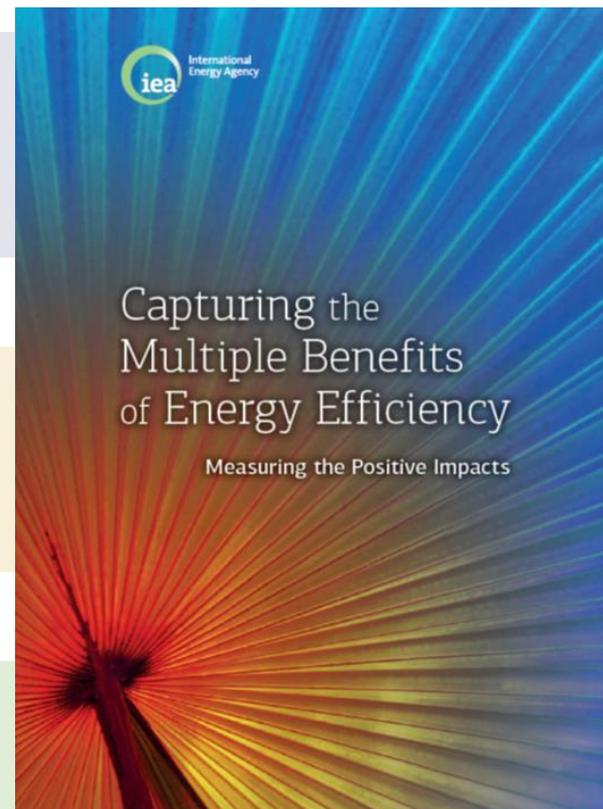
- Reduced energy demand and local price reduction
- Reduced public health spending
- Energy security
- Potential net increase in employment

## Sectoral

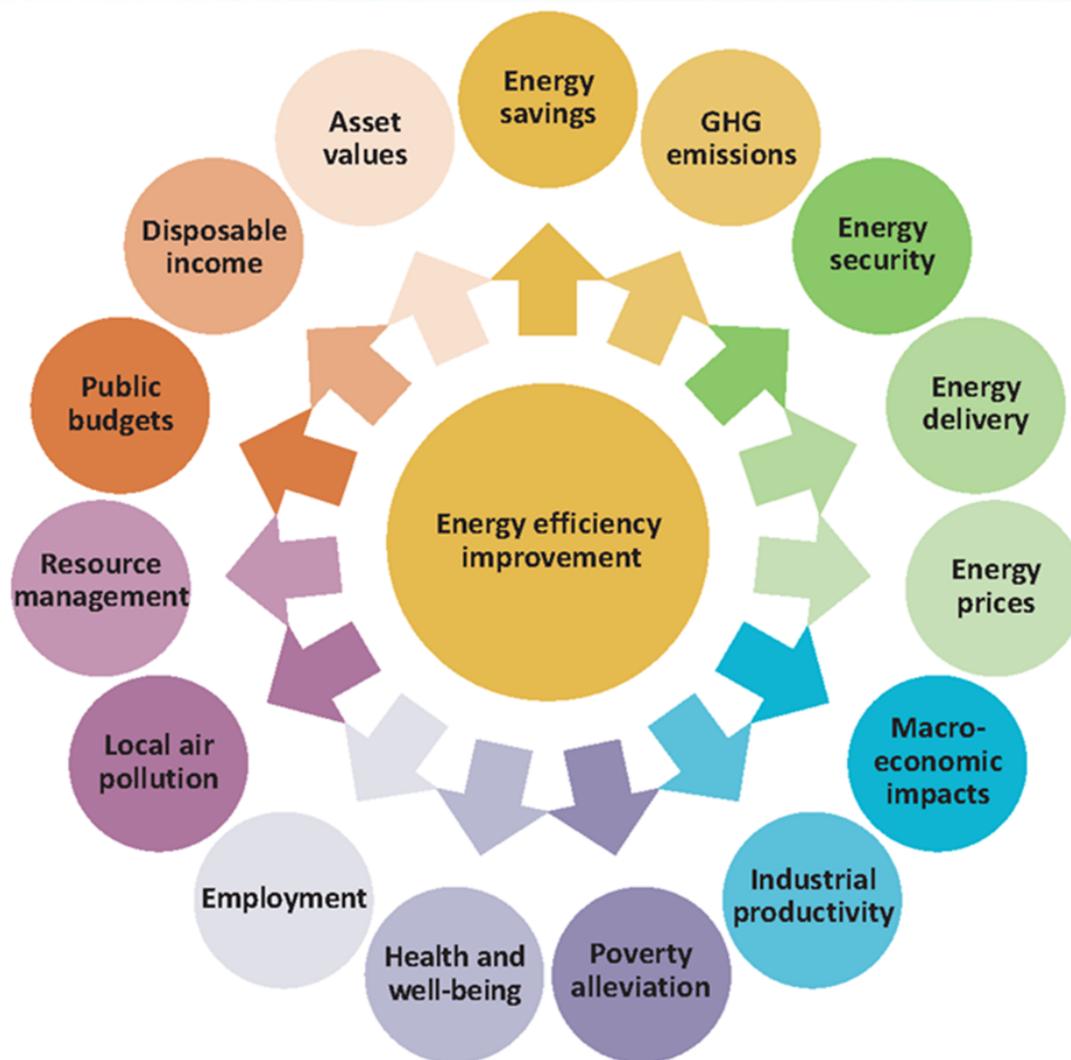
- Increase in re-sale value of home
- Improved bill payments for energy providers
- Jobs in installation and production of insulation materials

## Individual

- Lower energy bills (discretionary)
- Increased disposable income
- Warmer, drier, more comfortable home
- Improved health and well-being potential

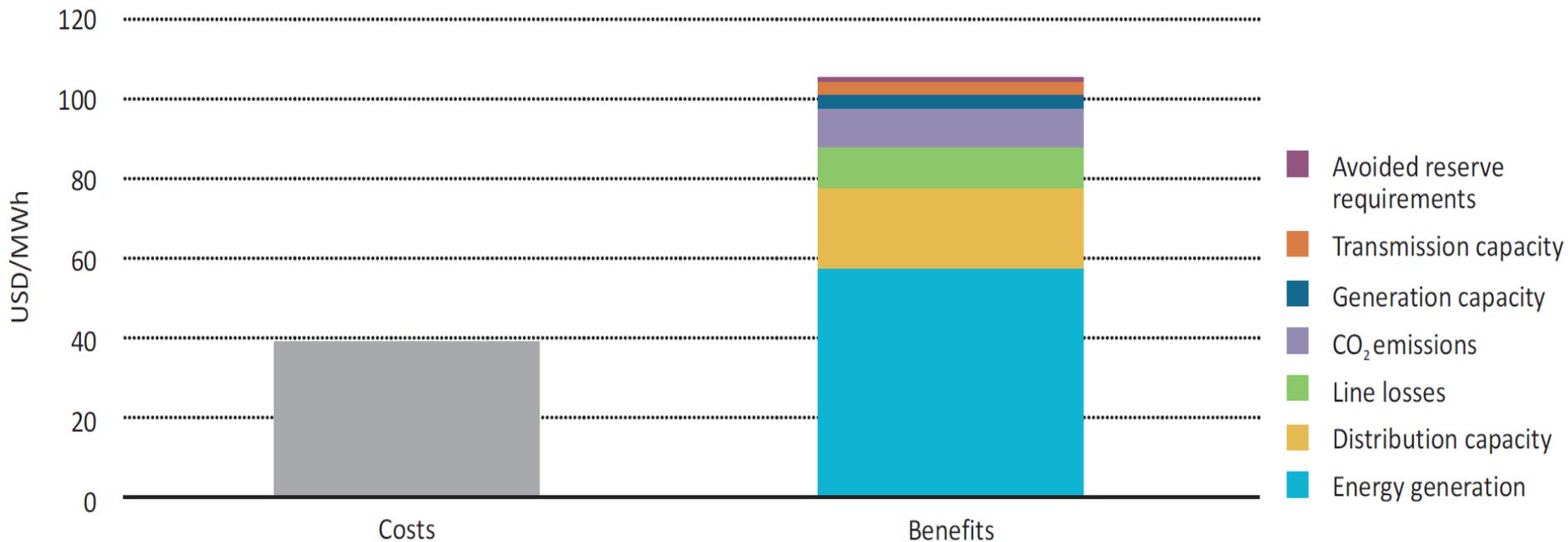


# Multiple Benefits of Energy Efficiency



***Energy efficiency is a means to enhance energy security, support economic and social development, and promote environmental goals.***

# Multiple Benefits of Energy Efficiency: Energy Provider Perspective



- **Benefits for utilities: cost and operational benefits in a resource constrained operating context**
- **Benefits for consumers/indirect benefits for utilities: increased affordability reduces customer default and associated costs**

# Multiple Benefits of Energy Efficiency: *Building Owner and Occupant Perspective*

<b>Comfort</b>	Improved lighting comfort, thermal comfort and noise comfort
<b>Health</b>	Improved physical and mental health from indoor air quality and comfort.
<b>Operations and maintenance</b>	Improved building and systems durability with reduced need for maintenance.
<b>Safety</b>	Improved safety through lighting, controls and reduced chance of fire from gas leaks.
<b>Property Value</b>	Increased rental income, reduced tenant turnover, increased habitable floor area.

- ***Benefits for owners: increased quality & property value***
- ***Benefits for occupants: increased health, comfort, safety and affordability***

# Multiple Benefits of Energy Efficiency: *Builder and Developer Perspective*

<b>Business</b>	Faster sale, faster leasing, higher occupancy, etc.
<b>Leadership</b>	Market differentiation and environmental stewardship
<b>Satisfaction</b>	Improved customer satisfaction, fewer callbacks with improved operations and maintenance, etc.
<b>Risk</b>	Lower risk from improved safety and increased satisfaction
<b>Profit</b>	Increased revenue, higher property value, etc.

- **Benefits: improved business and competitiveness, particularly in a buyers market or down economy.**

# Multiple Benefits of Energy Efficiency: *Industry Perspective*

<b>Competitiveness</b>	Ability to enter new markets, reduced production costs, etc.
<b>Production</b>	Capacity utilisation, improved product quality, etc.
<b>Operations and maintenance</b>	Improved industrial and commercial operation; reduced need for maintenance, etc.
<b>Working environment</b>	Site environmental quality, worker health and safety, etc.
<b>Environment</b>	Air pollution, solid waste, wastewater, reduced input materials, etc.

- **Benefits for industry: increased productivity & value creation**
- **Benefits for consumers/indirect benefits for industry: increased affordability and access to products and services**

# Multiple Benefits of Energy Efficiency: *Societal Perspective*

<b>Jobs</b>	Shifting from global to local jobs and from polluting to green jobs
<b>Economic</b>	Investment that provides economic benefit for many years.
<b>Emissions</b>	Reduced direct and indirect emissions from efficiency, refrigerants and reduced product size / quantity.
<b>Energy</b>	Energy use benefit from improved efficiency and reduced embodied energy from increased durability
<b>Environmental</b>	Air pollution, solid waste, wastewater, and reduced input materials

- **Benefits: economic and environmental impacts that provide multiple benefits for years.**

# Multiple Benefits of Energy Efficiency: *Country Perspective - Supporting Development*

<b>Energy access</b>	Expand access to supply power to more people through the existing energy infrastructure.
<b>Economic development</b>	Supporting economic growth including through industrial productivity and reducing fuel import bills.
<b>Poverty alleviation</b>	Increasing the affordability by reducing the per-unit cost of lighting, heating, refrigeration, etc.
<b>Combatting local pollution</b>	Reducing direct and indirect emissions through energy efficiency on supply side and demand side.
<b>Climate change resilience</b>	Reducing vulnerable energy infrastructure and improving the durability of buildings.

**Multiple benefits are of particular importance for emerging economies and developing countries**

# Multiple Benefits of Energy Efficiency: *Supporting Development Goals*

***Changing our thinking...***

***from:***

***“doing more with less”***

***to:***

***“doing even more with more”***