ENERGY EFFICIENCY

Spreading the Net: Evaluating the Multiple Benefits of Energy Efficiency

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International Energy Agency (IEA)

~Presented by Sara Pasquier~

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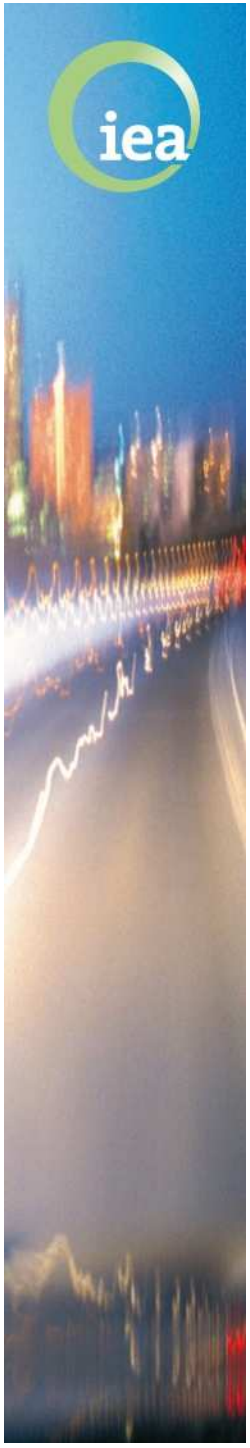
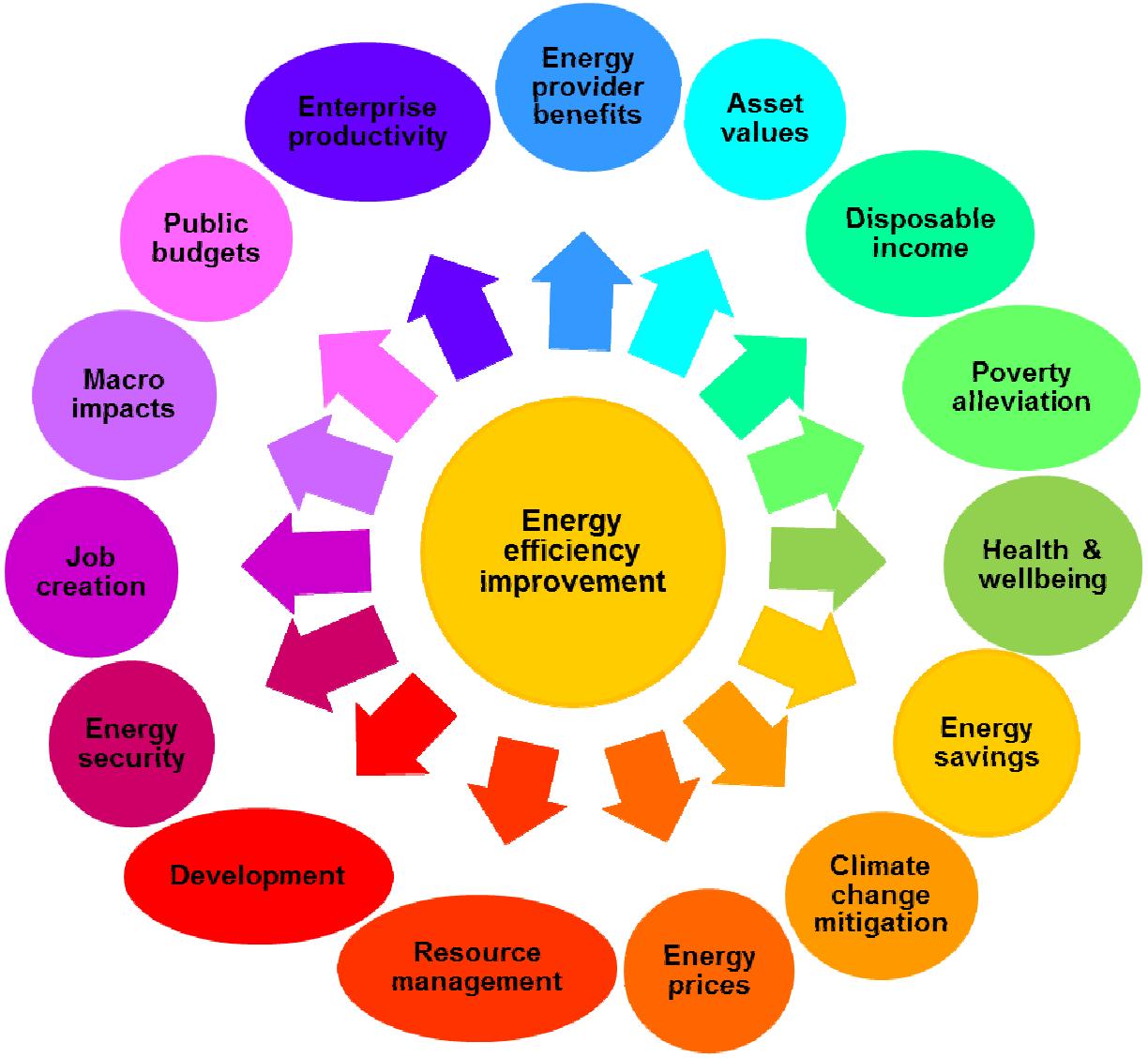
International Energy Agency

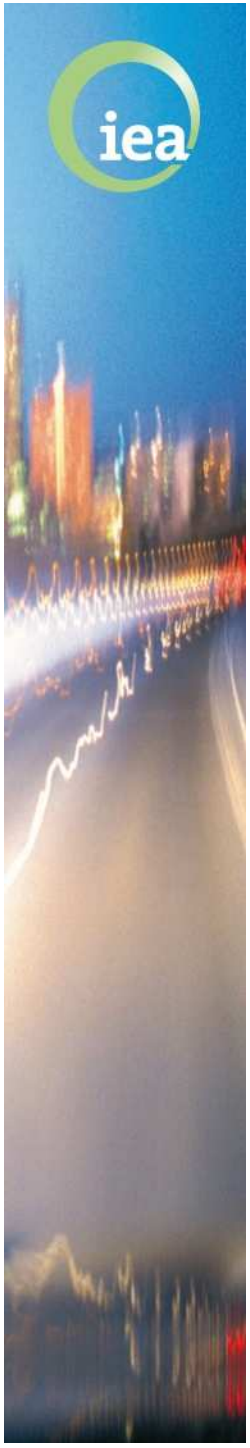


Its time to start spreading the net to catch multiple benefits

- Why multiple benefits?
- The haul of multiple benefits so far
  - To what degree have MBs been explored so far?
  - What promising avenues are presenting themselves?
- Possible implications for the rebound effect
- A call to action – collaboration!

Multiple benefits of energy efficiency





Multiple benefits across economic levels

International

- GHG emissions
- Energy prices
- Development goals
- Resource management

National

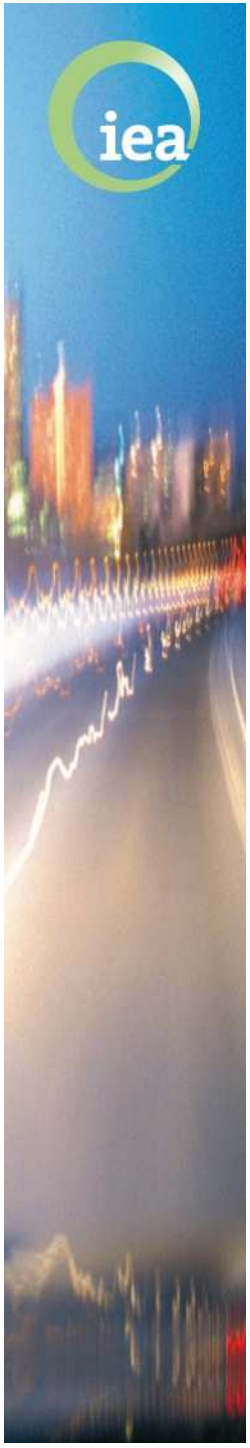
- Macroeconomic effects
- Job creation
- Energy security
- Public budget impacts

Sectoral

- Increased asset values
- Energy provider and infrastructure benefits
- Industrial productivity and competitiveness

Individual

- Health, wellbeing and social improvements
- Poverty alleviation: energy affordability & access
- Increased disposable income



Individual level (individual, household, enterprise)

a. Health, wellbeing and social improvements

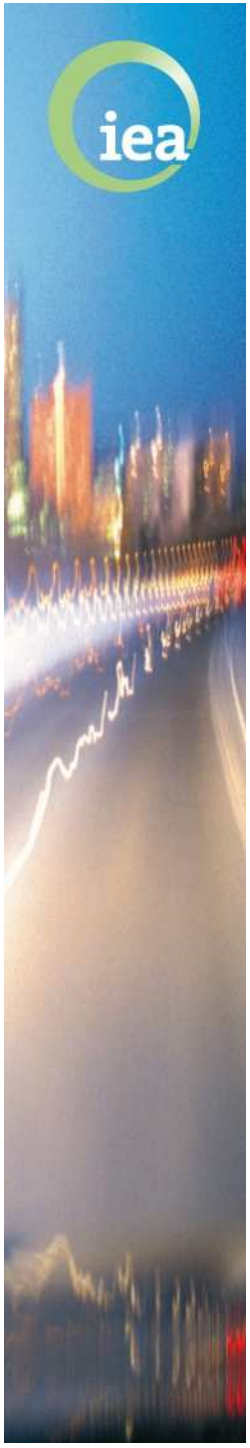
e.g. as a result of improved heating and cooling and air quality in buildings; more efficient transport systems and power generation.

b. Poverty alleviation: energy affordability/access

e.g. the impact on reducing fuel poverty; improving quality of life; increasing access to energy and aggregate impacts for poverty alleviation.

c. Increased disposable income

e.g. energy efficiency improvement at individual or firm level should reduce energy bills for the same energy services and free more disposable income.



Sectoral level

d. Industrial productivity and competitiveness

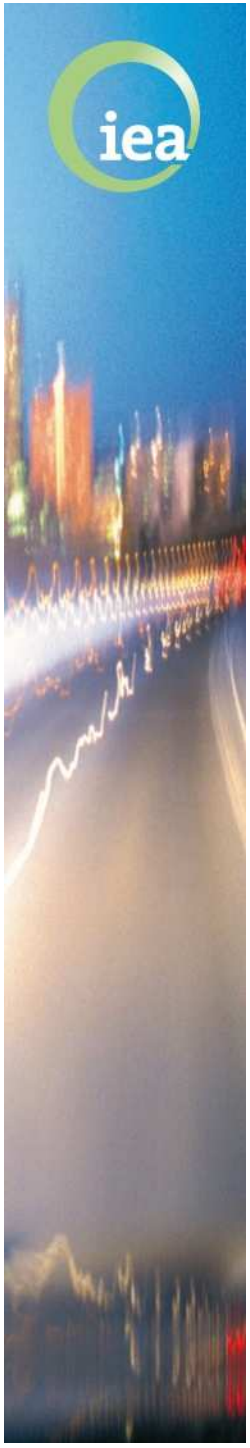
e.g. reductions in resource use and pollution; improved production and capacity utilisation; less operation and maintenance

e. Energy provider and infrastructure benefits

e.g. Help energy providers in providing a better energy service to their customers, reducing operating costs and improving profit margins.

f. Increased asset values

e.g. Investors willing to pay a sales premium, tenants a rental premium, for property with better energy performance, particularly commercial.



National level

g. Macroeconomic effects

e.g. increases in GDP; improved trade balance; national competitiveness; and employment.

h. Public budget impacts

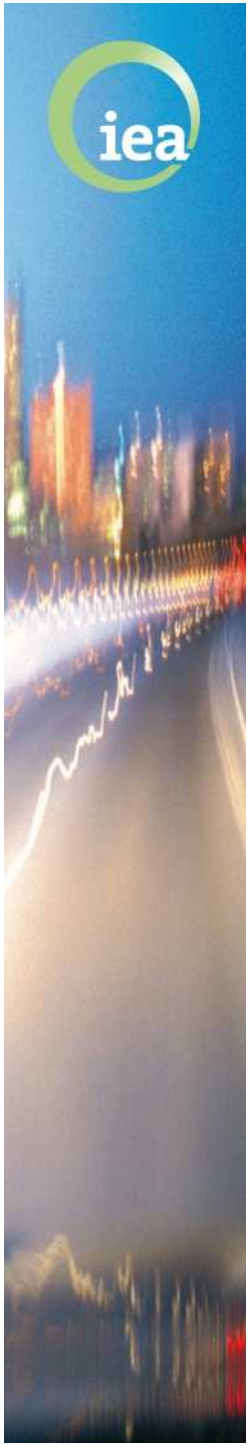
e.g. Reduced spending on public energy procurement; reduced fuel imports; less foreign currency reserves; reduced outlay on subsidies.

i. Employment

e.g. energy efficiency work and increased disposable income can generate direct and indirect jobs in energy and other sectors.

j. Energy security

e.g. reduced energy demand can improve energy system security across the 4 dimensions of risk – fuel availability, accessibility, affordability, and social and environmental acceptability.



International level

k. Energy prices

e.g. If energy demand is reduced significantly in several markets, energy prices can be reduced.

l. Reduced GHG emissions

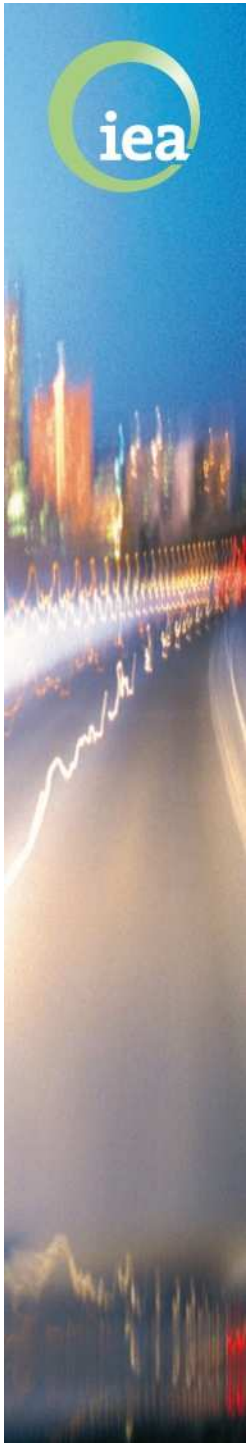
e.g. when energy efficiency improvements result in reduced demand for fossil fuel energy.

m. Resource management

e.g. Reduce pressure on scare resources; manage supply constraints; reduce incentive to pursue technologies with environmental impacts.

n. Development goals

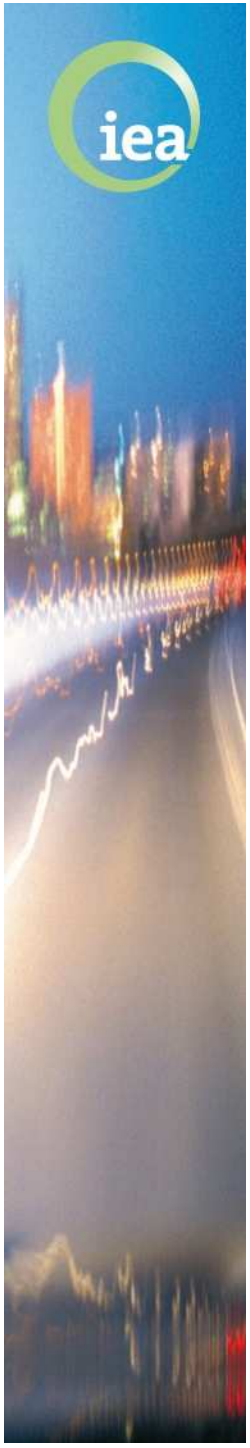
e.g. eradicating poverty; increasing economic growth; improving environmental sustainability; and increasing access to energy.



The Rebound Effect

- **Positive welfare or utility gains from energy efficiency can increase energy consumption = rebound effect**
- **Measurement methodology similar**
- **If primary objective of EE policy is economic development - Different interpretation of rebound effect?**

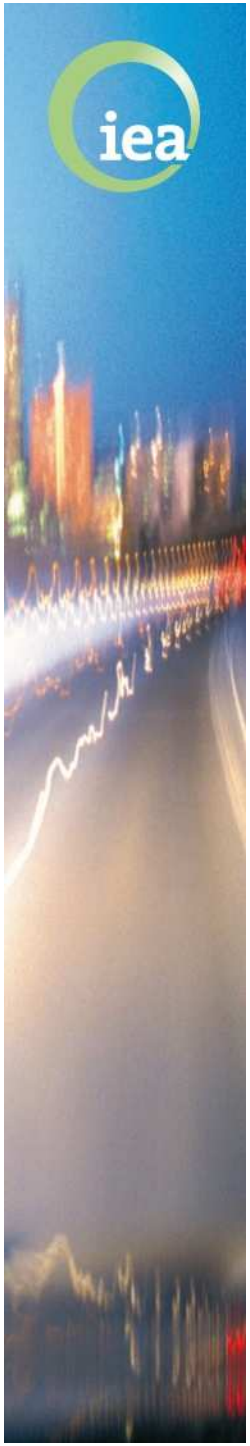
Rebound Effects	Consumer		Producer	
	Income	Substitution	Output	Substitution
Direct	Turning up the heat, driving more	Buying a bigger house	Increasing production	More energy use relative to other factors
Indirect	Taking a holiday		Lower cost cars lead to more transport consumption	
Macro-economic	Lower prices for energy services boost demand for all goods and services economy-wide; increased employment		Increased productivity, higher profits/dividends implies investment in the economy	



Future Work

- **Better data needed in priority areas:**
  - **Health and well-being**
  - **Industrial productivity**
  - **Public budget outlay**
  - **Macroeconomic effects**
  - **Consumer spending/disposable income**
- **Toolkit for policy makers with evaluation methodologies**

→ **Consortium of funders, experts and working partners needed!**



Thank you

for your attention

For more information or to discuss becoming a content or funding partner, contact:

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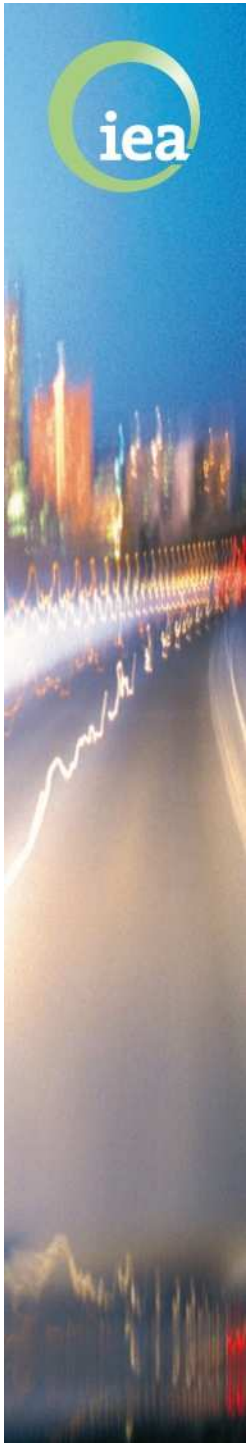

Discussion

- **Where is work most urgently needed?**
- **Could energy efficiency be framed as a recession-buster and linked to green growth?**
- **Why are the wider outcomes from energy efficiency not measured?**
- ***Tinbergen Rule:*** **for each and every policy target there must be at least one policy tool. If there are fewer tools than targets, then some policy goals will not be achieved**