Multiple Benefits of Energy Efficiency: Supporting Greater Climate Ambition

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CCXG Global Forum
Paris, 19 September, 2013
Energy emissions

ETP, 2012
Energy emissions

MtCO$_2$


4°C
Energy emissions
Energy emissions

The graph illustrates the trend of energy emissions over time, with lines indicating different scenarios. The x-axis represents years from 1990 to 2050, while the y-axis indicates the emission levels in MtCO₂. The graph shows a significant increase in emissions from 1990 to 2010, followed by a decrease by 2020. The 4°C scenario shows a steady increase in emissions by 2030, while the 2°C scenario indicates a significant reduction in emissions from 2020 onwards. The efficiency improvements are highlighted by the shaded area, suggesting potential mitigation strategies to address climate change.
Two-thirds of the economic potential to improve energy efficiency remains untapped in the period to 2035
Energy-related CO₂ emissions by scenario & abatement measures

New Policies Scenario

Gt

2010  2015  2020  2025  2030  2035
Energy-related CO\textsubscript{2} emissions by scenario & abatement measures

- **New Policies Scenario**
- **450 Scenario**
Energy-related CO₂ emissions by scenario & abatement measures
Energy-related CO₂ emissions by scenario & abatement measures

- **New Policies Scenario**
- **Efficient World Scenario**
- **450 Scenario**

Key abatement measures:
- End-use efficiency
- Electricity savings
- Power plant efficiency
- Fuel and technology switching
Massive global additional investment required

The Efficient World Scenario relative to the New Policies Scenario

Additional investments required in end-use efficiency are $11.8 trillion over 2012-2035; saving consumers $17.5 trillion in energy expenditures in this period.
Need to . . .

*Increase motivation*

*by expanding set of engaged stakeholders*  
*(what is their EE benefit)*
Multiple stakeholders at multiple levels

- International
- National
- Sectoral
- Individual
Multiple benefits of EE
Multiple benefits at multiple levels

International
- Energy prices
- Resource management
- GHG emissions abatement

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

The Public

More Public/Private Stakeholders
- Energy prices
- Resource management
- GHG emissions abatement
- Macroeconomic effects
- Job creation
- Energy security
- Public budget impacts
- Increased asset values
- Energy provider and infrastructure benefits
- Industrial productivity and competitiveness
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‘Different strokes for different folks’

Benefits vs. Co-Benefits → Multiple Benefits

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<th>Country or Stakeholder A</th>
<th>Cty/Stk B</th>
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<th>Etc.</th>
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<td>Industrial Competitiveness</td>
<td>Co-Benefit</td>
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<td>Fuel Imports</td>
<td>Primary</td>
<td>Co-Benefit</td>
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<td>Poverty Alleviation and Development</td>
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<td>GHG Emissions</td>
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Multiple Benefits of EE

Initial IEA analysis of 5 benefits:
- Macro-economic
- Health
- Utilities/Energy providers
- Public budgets
- Industrial productivity
Outputs: Results to Date

- **Analytical scoping study**
  - *Spreading the Net: Capturing the Multiple Benefits of Energy Efficiency Improvements* (OECD/IEA, 2012)

- **Expert Roundtable on Macroeconomic Benefits**
  - Paris, January 2013

- **Expert Roundtable on Health & Wellbeing Impacts**
  - Copenhagen, April 2013
Economically viable efficiency measures can halve energy demand growth to 2035; oil prices are $15 per barrel lower by 2035 due to oil demand savings.
Energy efficiency can help drive economic prosperity

Cumulative investments in energy efficiency of $12 trillion are more than offset by fuel savings & trigger economic growth of a cumulative $18 trillion
Health & well-being impacts

Some key messages:

- A clear link has been established
- Studies show $4 can be saved in public health for every $1 spent on EE
- A growing body of evidence that mental health benefits (reduced stress, anxiety and depression) are equal to or greater than physical benefits
- Significant benefits emerge when targeting vulnerable groups
- BUT overall cost/benefit suggests targeting dwellings not occupants, or IDEALLY start with a dwelling approach + demographic data overlay
- Policies must include safeguards to avoid negative impacts being generated inadvertently – i.e. ventilation testing post EE intervention
- Collected proven methodologies and received messaging advice
Outputs: Next Steps

- **Final Roundtables**
  - Energy provider and infrastructure benefits: Ottawa, Canada 15/16 October 2013
  - **Industrial productivity**: Paris, 2 December 2013

- **Multiple Benefits Handbook for Governments and Evaluators**
  - Publication expected in 2014
Need to . . .

**adjust our approach**

to achieve scale up at level required for CC mitigation goals.

**EE multiple benefits**

outreach can help
Thank You

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