

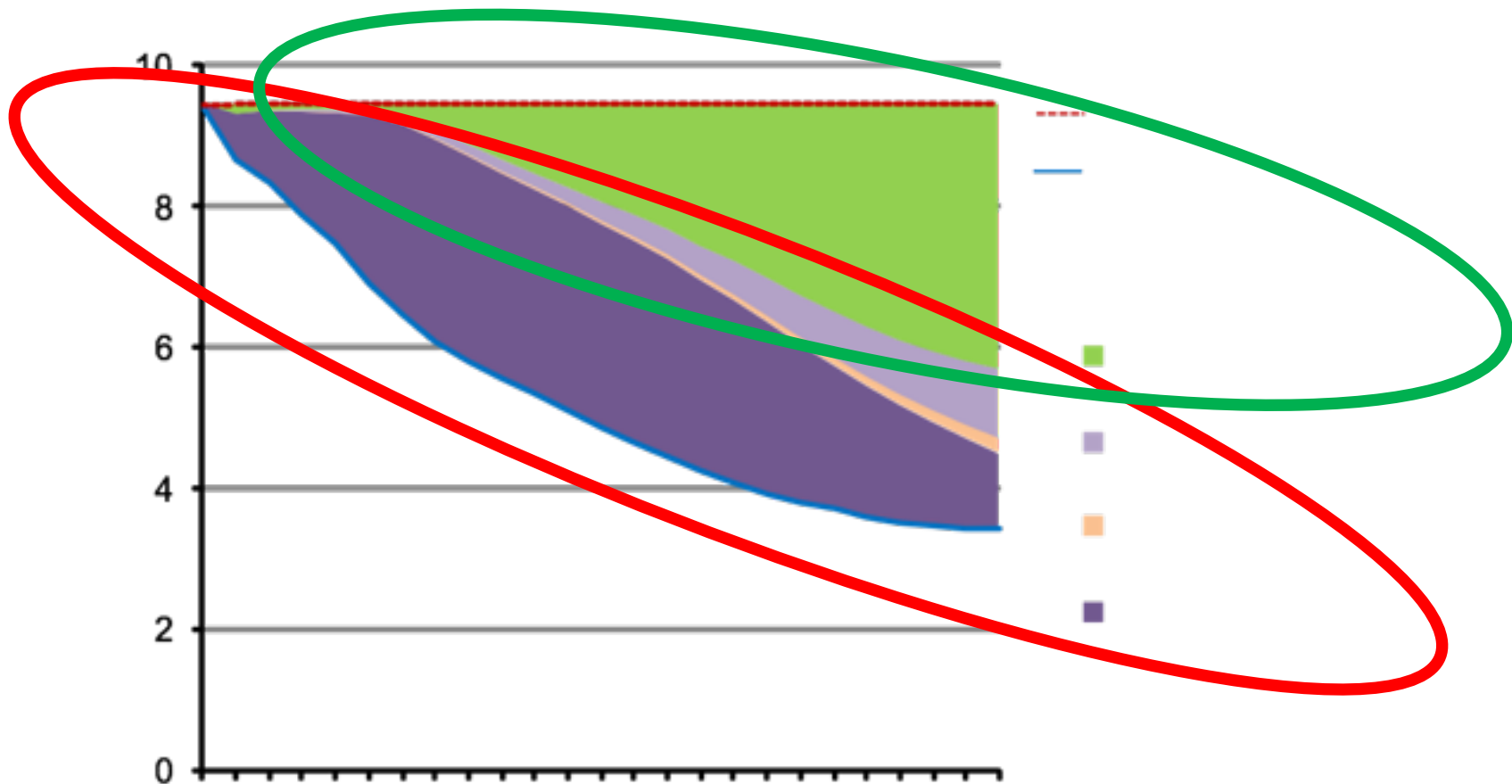


**International
Energy Agency**
Secure
Sustainable
Together

**Framing multiple benefits:
What do we mean by them?**

Samuel Thomas
Energy Efficiency Division
International Energy Agency
#energyefficientworld

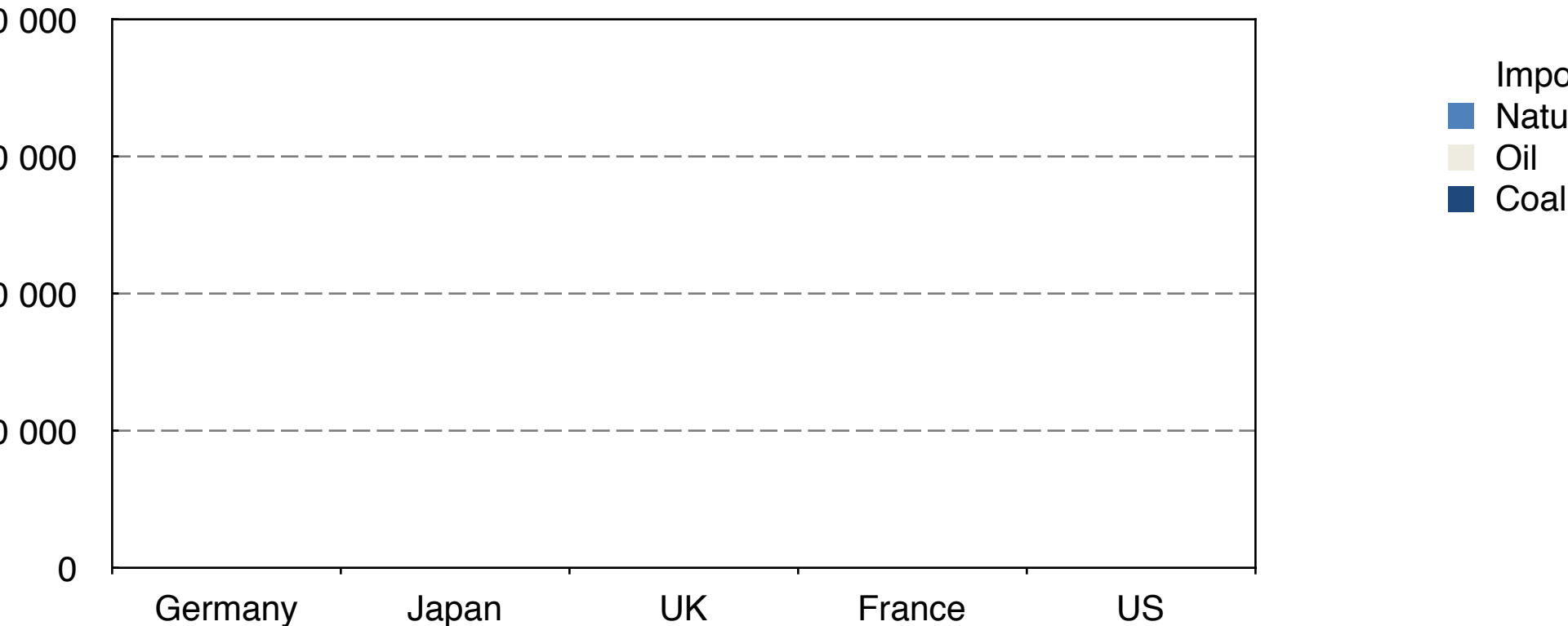
Impact of supply- and demand-side improvements on US oil import needs



Efficiency's domestic production substitutes for fuel imports

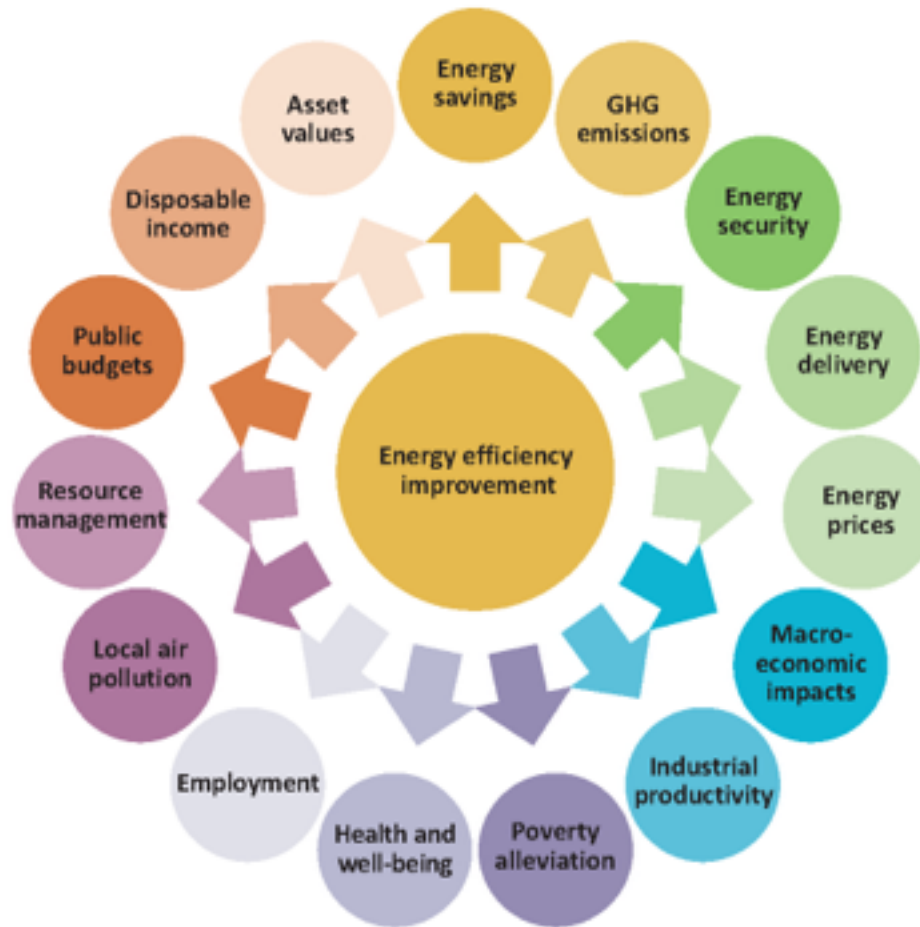
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Avoided imports in 2014, as a result of energy efficiency gains since 1990



Domestically produced, efficiency supports energy security

The multiple benefits of energy efficiency improvements

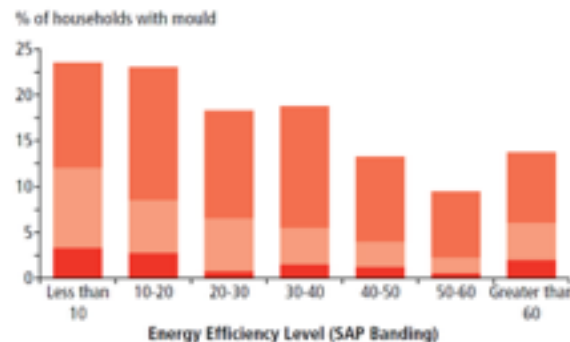
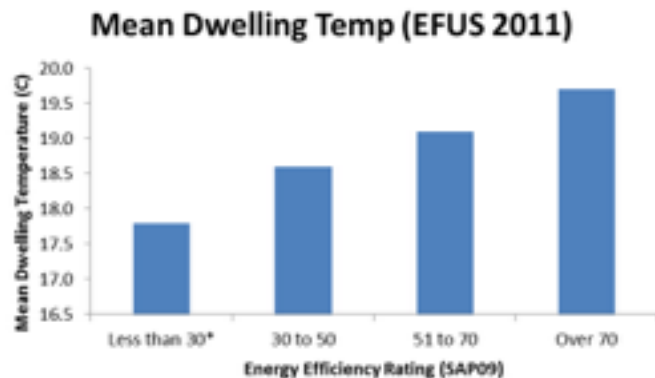


Energy efficiency is a means to enhance energy security, support economic and social development, and promote environmental goals

Poor energy efficiency related to health outcomes

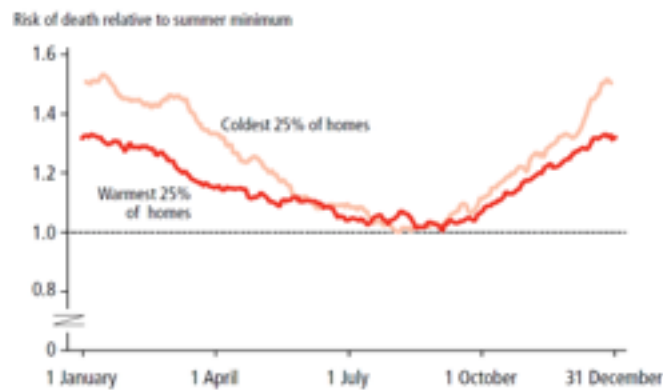
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Extensive body of research linking poor energy efficiency / high fuel costs to **low indoor temperatures** and **poor housing condition** in the UK (e.g. mould)...

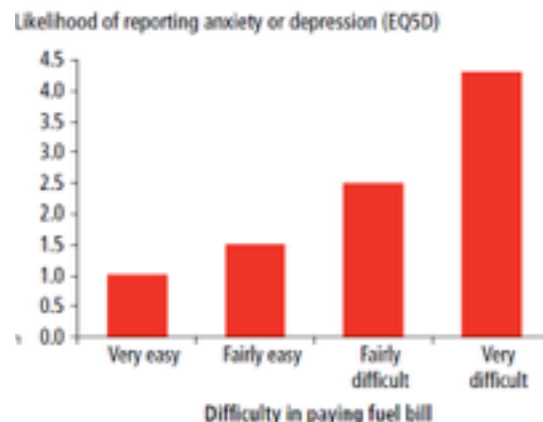


Source: EHS 1996, Oreszczyn et al. (2006)

...with significant implications for health and wellbeing outcomes.



Source: Wilkinson et al (2001)



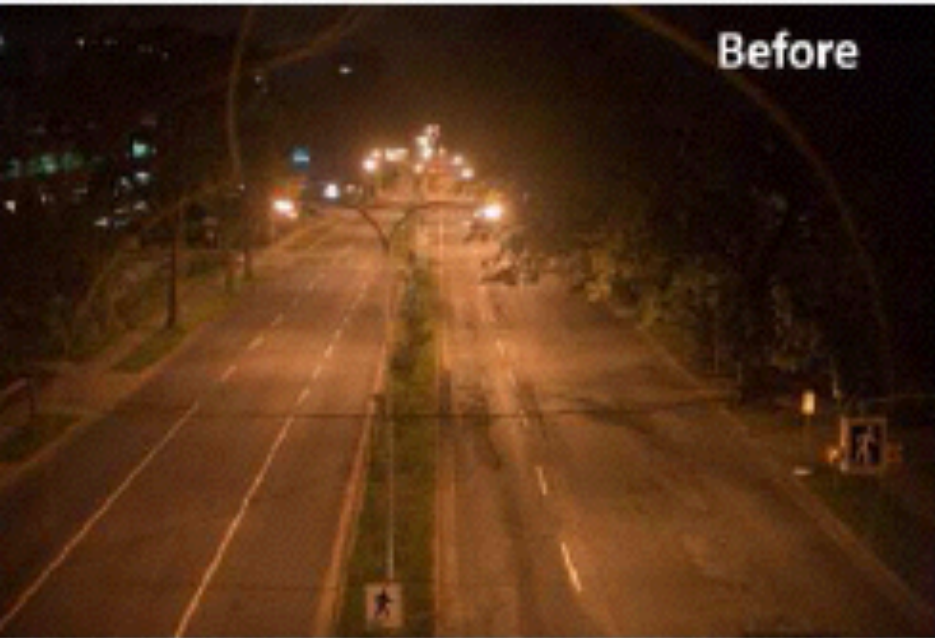


March 11, 2014

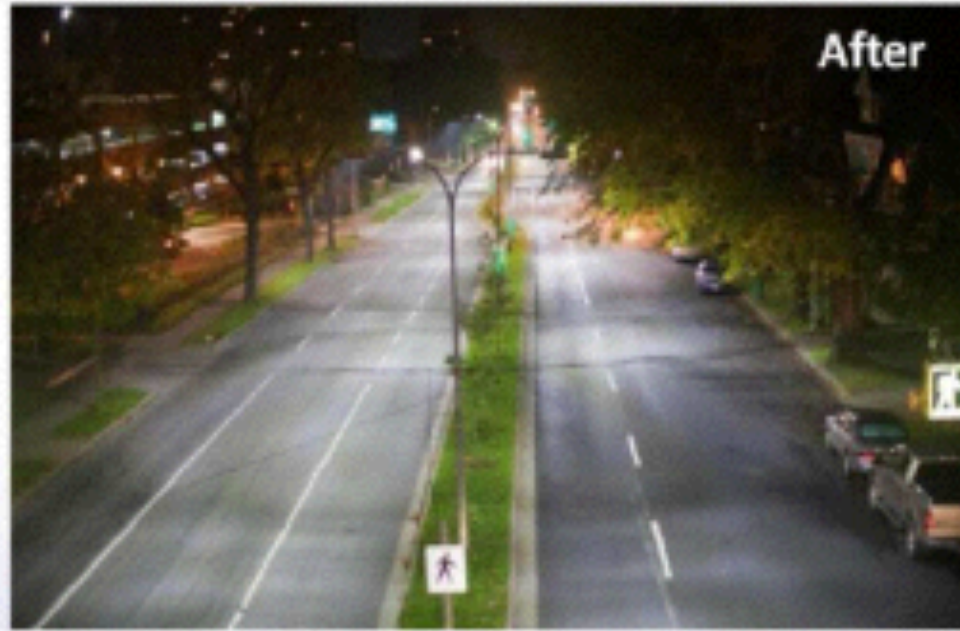
Credit: Patrick Kovarik AFP

Multiple Benefits of Energy Efficiency: *Lighting*

Poor visibility



Better light quality

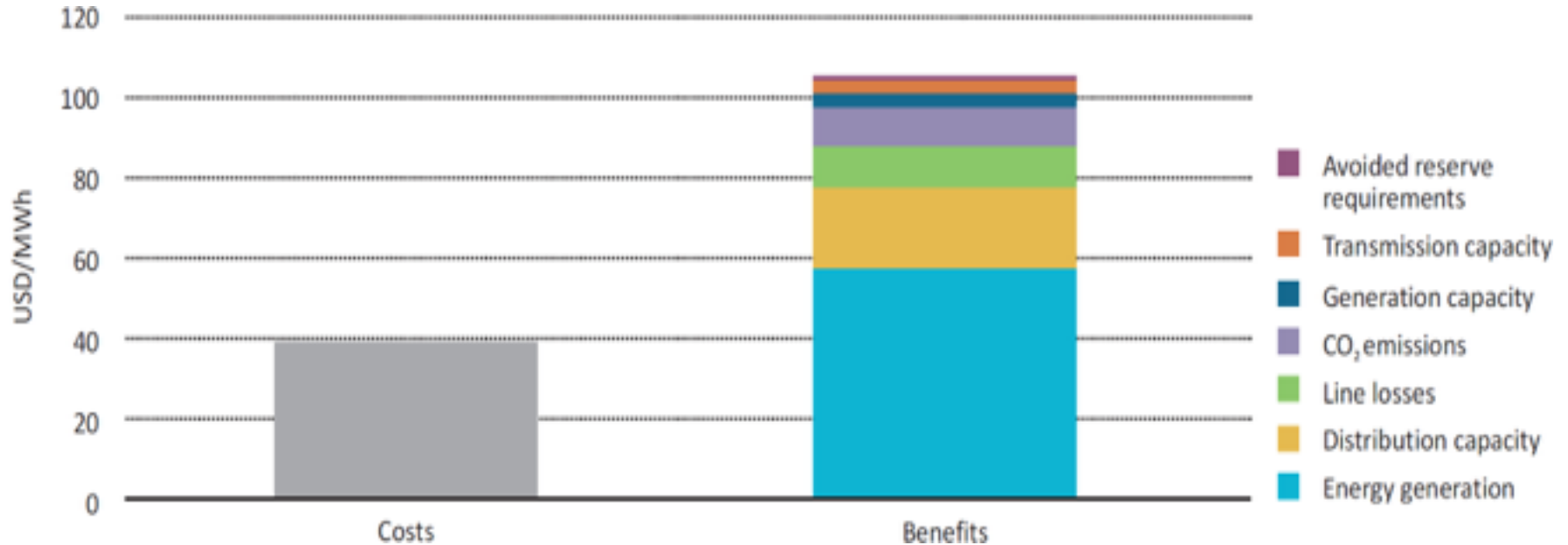


More energy use

Less energy use

- Improved lighting has *improved safety* in Nova Scotia, Canada

Energy provider: supporting a changing business model



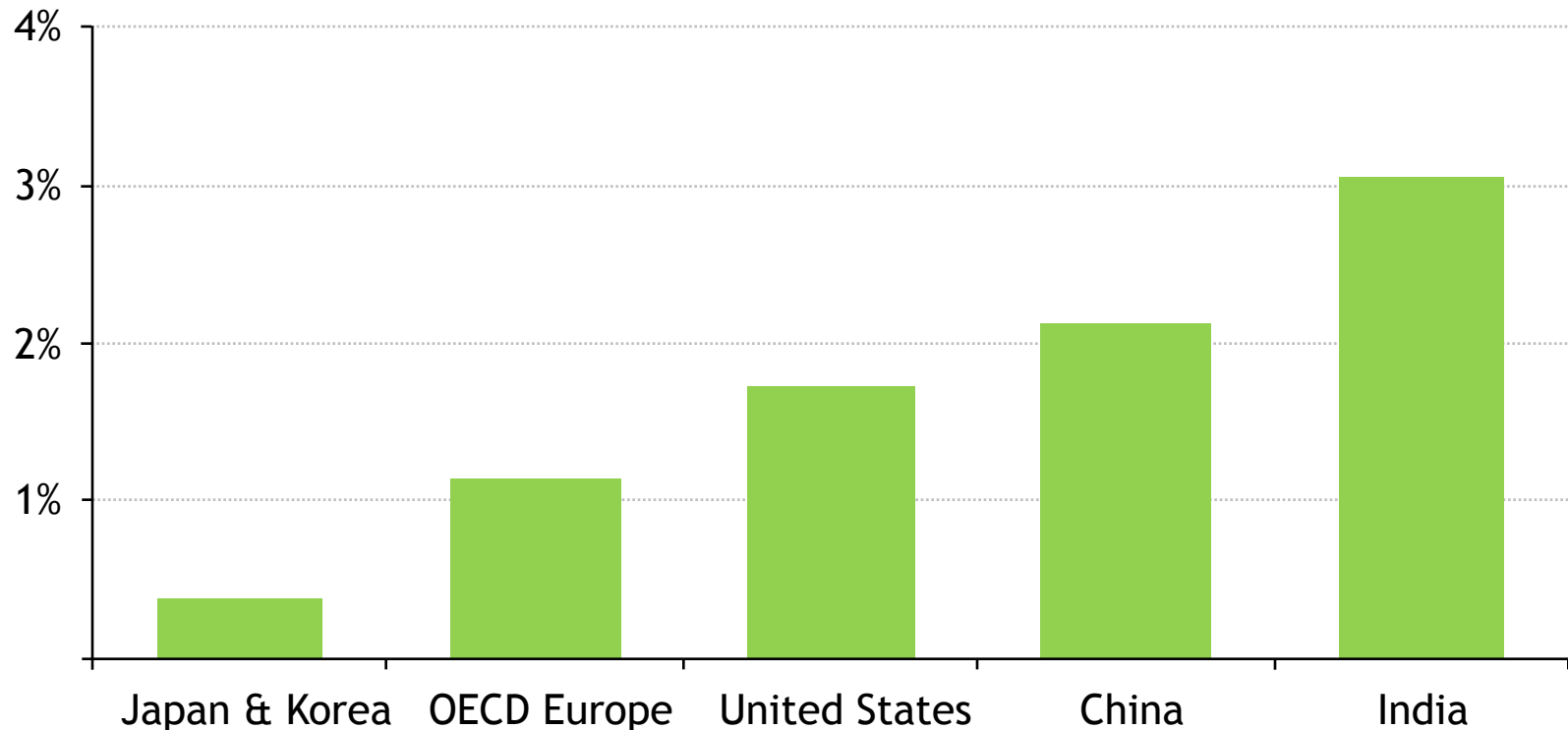
Benefits for utilities: particularly in resource constrained operating context

Benefits for consumers/indirect benefits for utilities: increased affordability reduces customer default and associated costs

Boosting industrial productivity: from savings to ‘value creation’

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

GDP in Efficient World Scenario versus New Policies Scenario, 2035



Cumulative investments in energy efficiency of \$12 trillion are more than offset by fuel savings & trigger economic growth of a cumulative \$18 trillion

Multiple Benefits of Energy Efficiency:

Macroeconomic impacts on public budgets

Sales tax revenue from sales of energy efficient products and services	Income	↑
Sales tax revenue from other goods when crowded out by energy efficiency	Income	↓
Sales and income tax revenues from increased economic activity	Income	↑
Energy excise duty, emissions trading, and carbon tax revenues	Income	↓
Revenues from real estate transactions if properties become more valuable	Income	↑

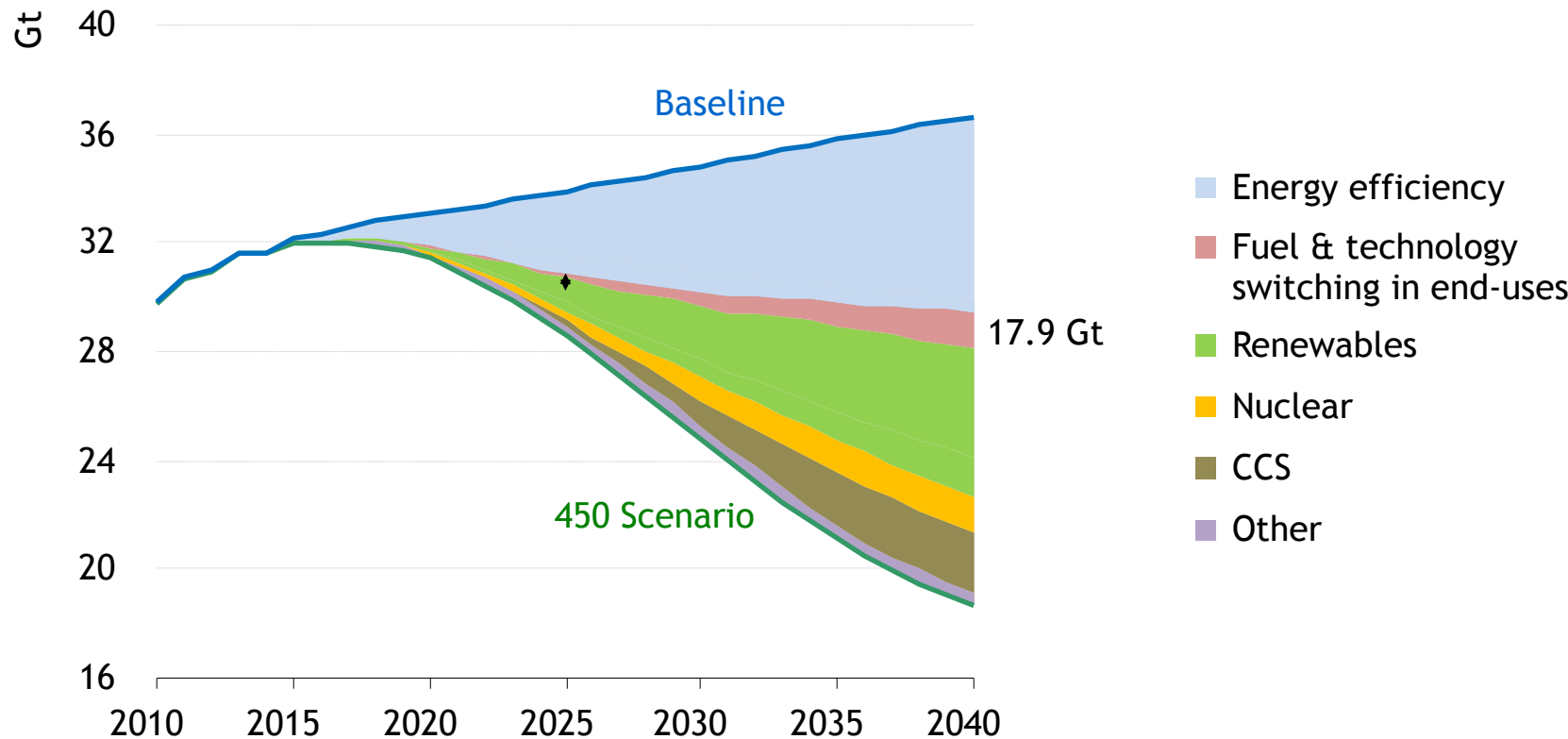
Multiple Benefits of Energy Efficiency:

Macroeconomic impacts on public budgets

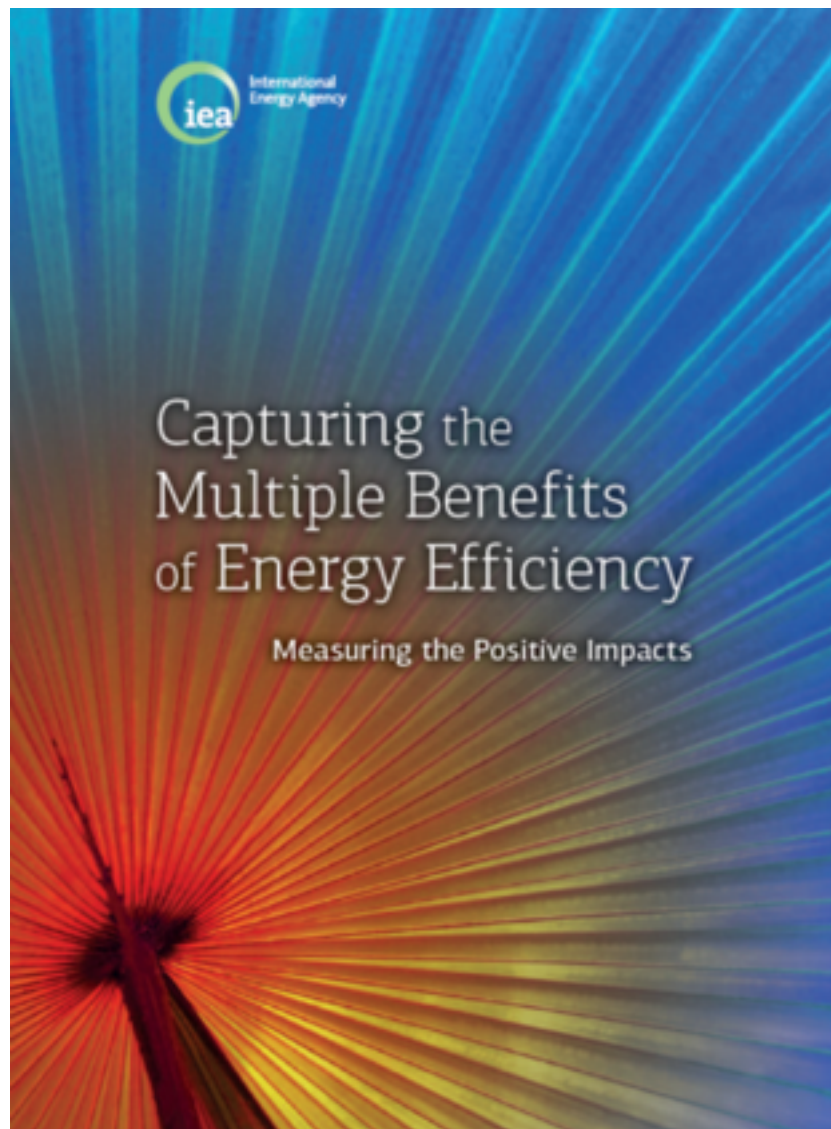
Initial costs of public investment in energy efficiency products and services	Expense	↑
Energy subsidies to final consumers	Expense	↓
Expenditures on health, social welfare and unemployment benefits	Expense	↓
Expenditures on public sector energy consumption	Expense	↓
Public investment in energy supply infrastructure and subsidies	Expense	↓

A 2°c pathway is still some distance away

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Energy efficiency holds the key to a peak in emissions by around 2020



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THANK YOU

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samuel.thomas@iea.org

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