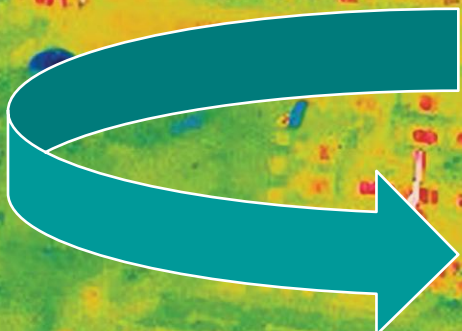


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Hidden Fuel First Fuel

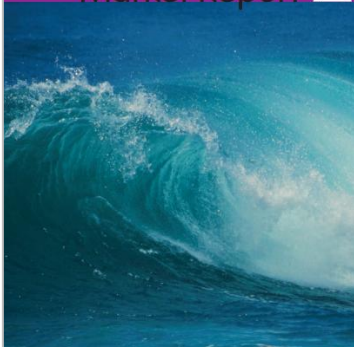
Didier Houssin
Director Sustainable Energy
Policy and Technology
18 October 2013

Market Trends and Medium-Term Prospects



IEA fuel market reports

RENEWABLE ENERGY
Medium-Term
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Market Trends and Projections to 2018

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Market Trends and Projections to 2018

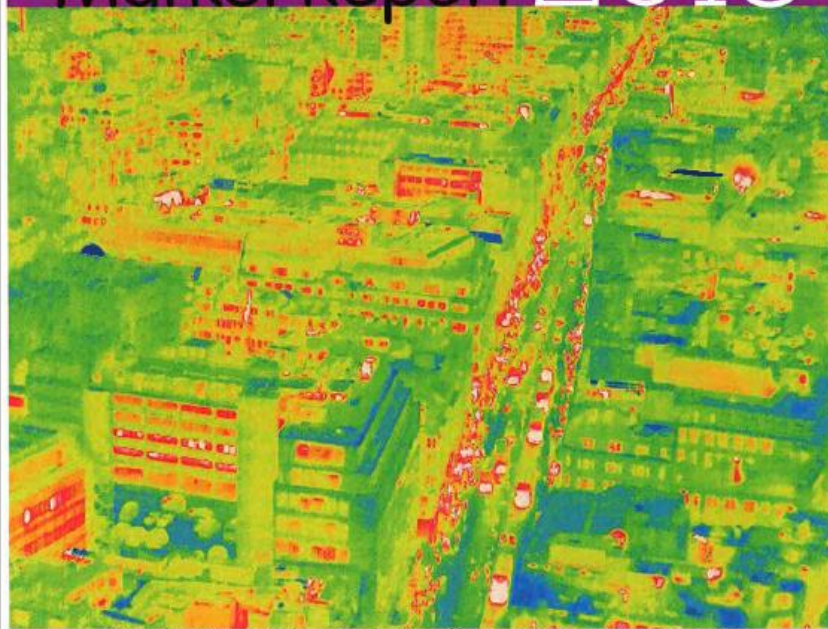
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Market Trends and Projections to 2018

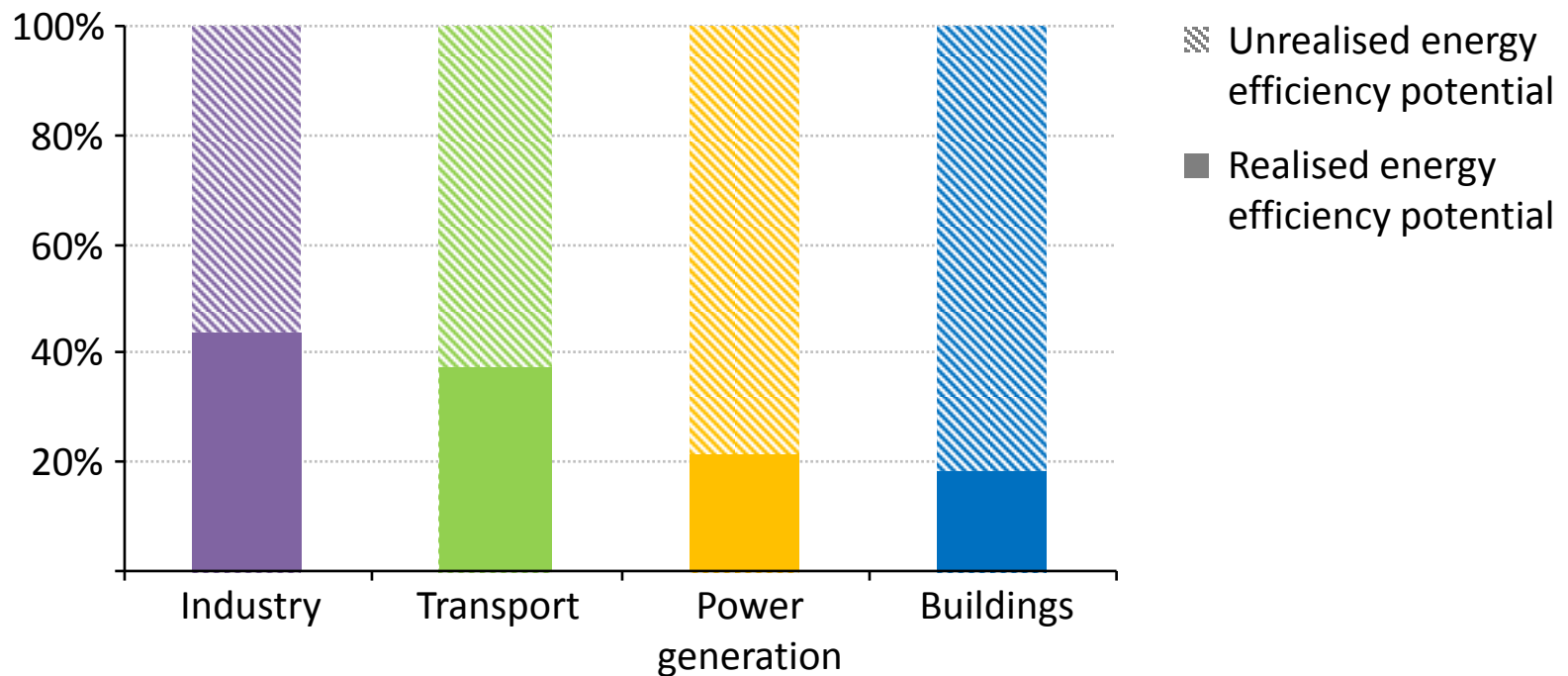


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Energy efficiency: a huge opportunity going unrealised

Energy efficiency potential used by sector in the WEO 2012 New Policies Scenario



Two-thirds of the economic potential to improve energy efficiency remains untapped in the period to 2035



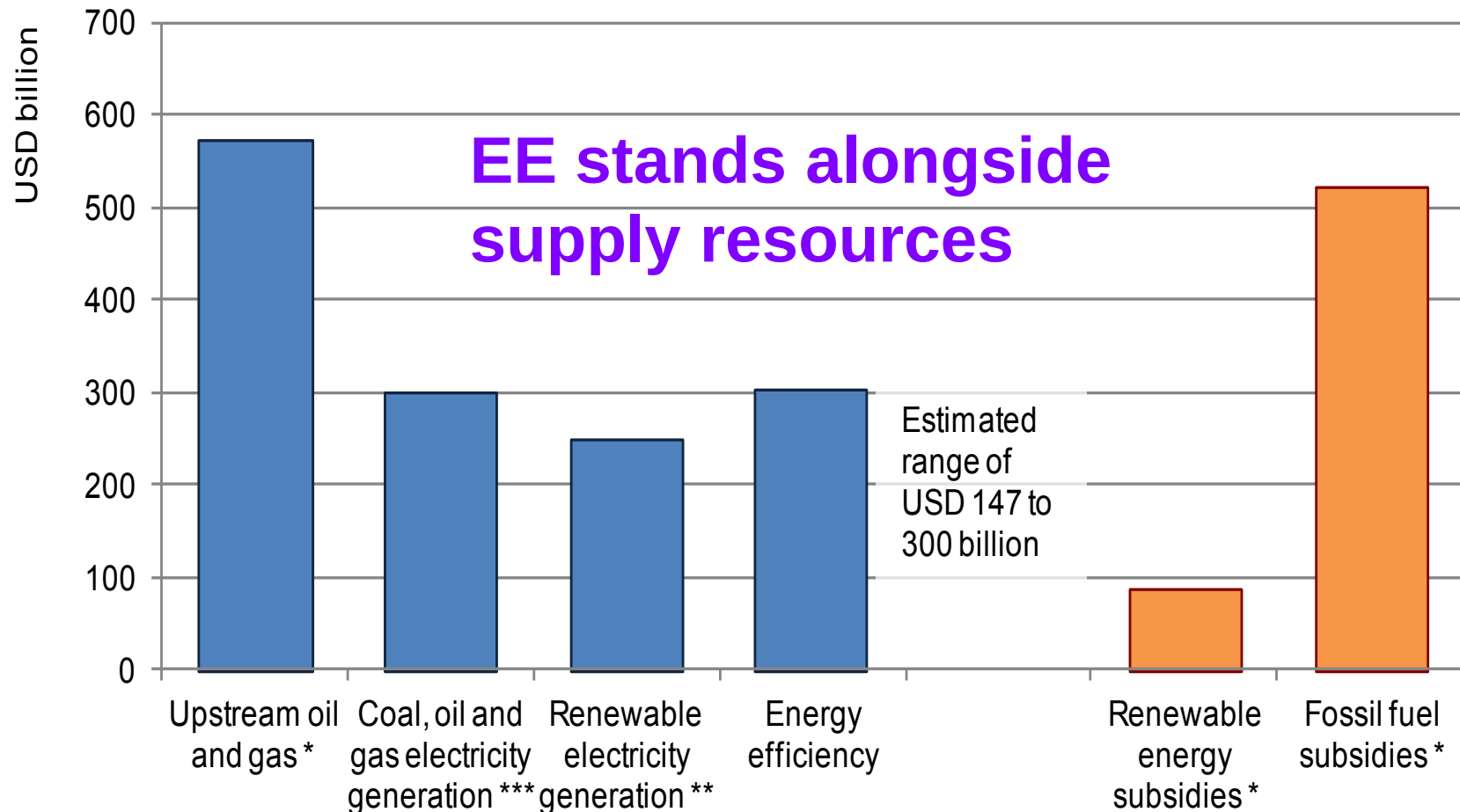
A big market with bigger potential

- **USD300 billion market**
- **Already delivers substantial reduction**
- **Recent growth driven by policy and high energy prices**
- **Bright national policy prospects**
- **Potential \$458 billion / year of savings by 2020**



USD300Bn global EE market in 2011

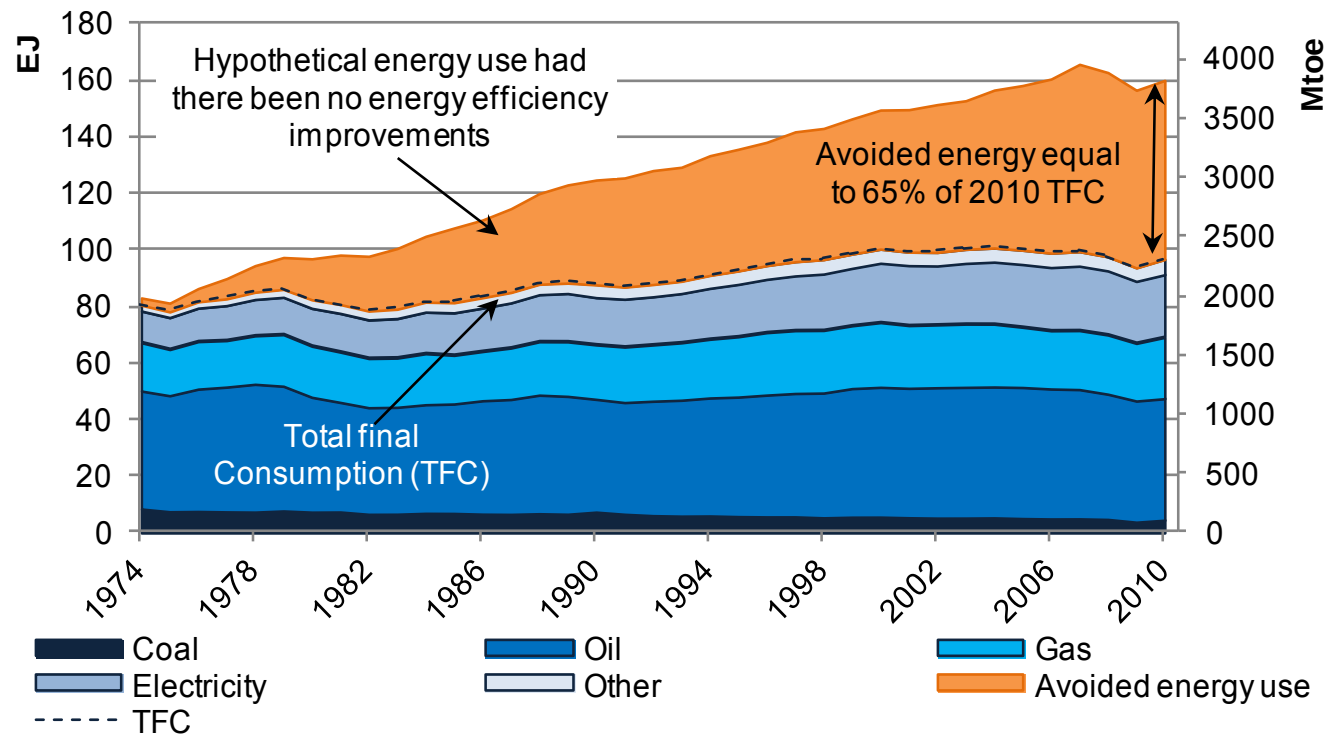
- Comparable to RE and fossil power generation investments
- BUT, investments in energy efficiency are still less than two-thirds of the level of fossil fuel subsidies





IEA's first fuel?

- Between 1974 and 2010, energy efficiency was the largest energy resource
- Cumulative avoided energy consumption due to energy efficiency in these IEA countries amounted to over 1 350 EJ (32 billion toe)



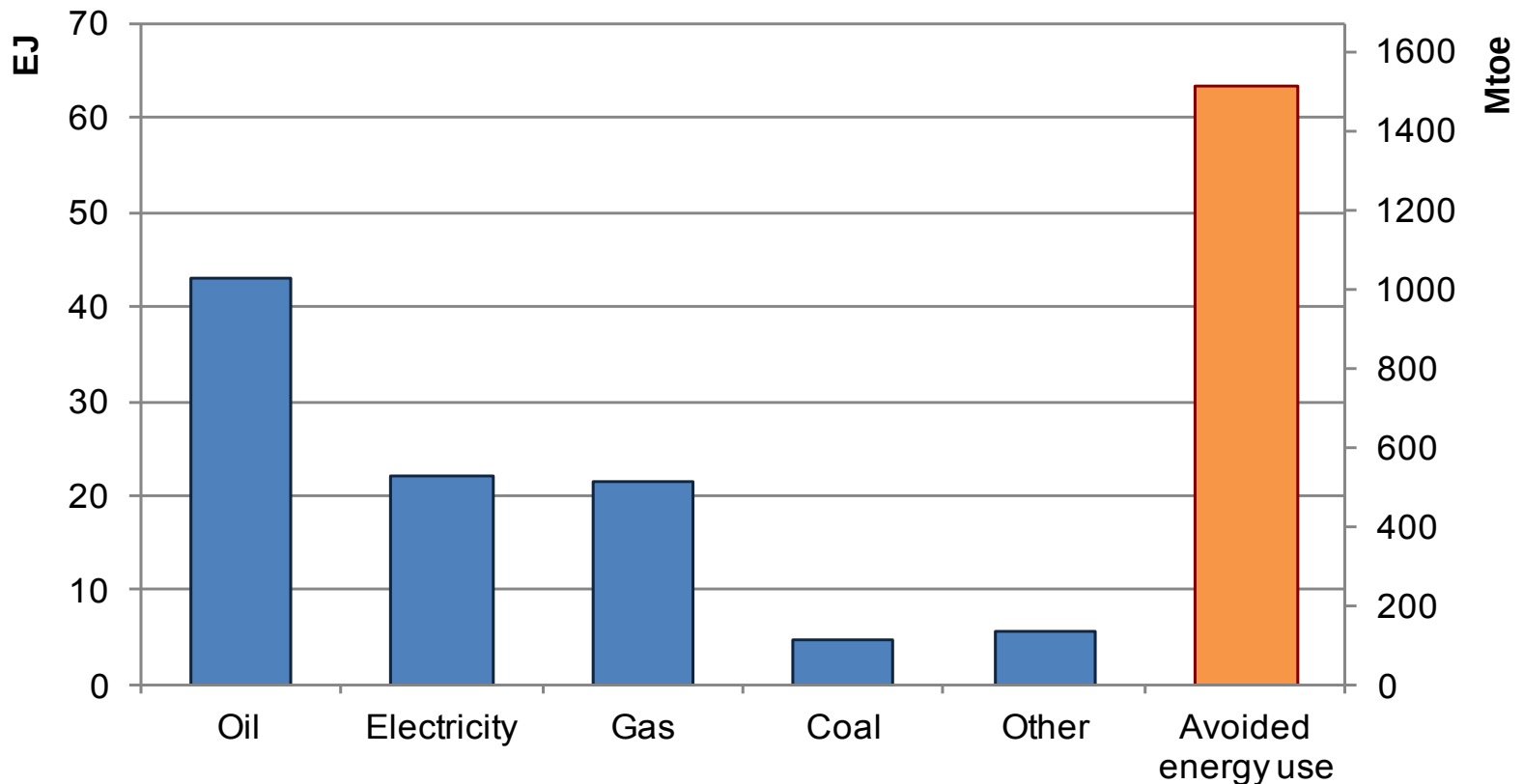
Long-term improvements in energy efficiency in 11 IEA countries



In 2010 energy efficiency was the largest resource

- Energy efficiency contributed 63 exajoules (EJ) (1400mtoe) of avoided energy use in 2010

- larger than the supply of oil (43 EJ), electricity or natural gas (22 EJ each)

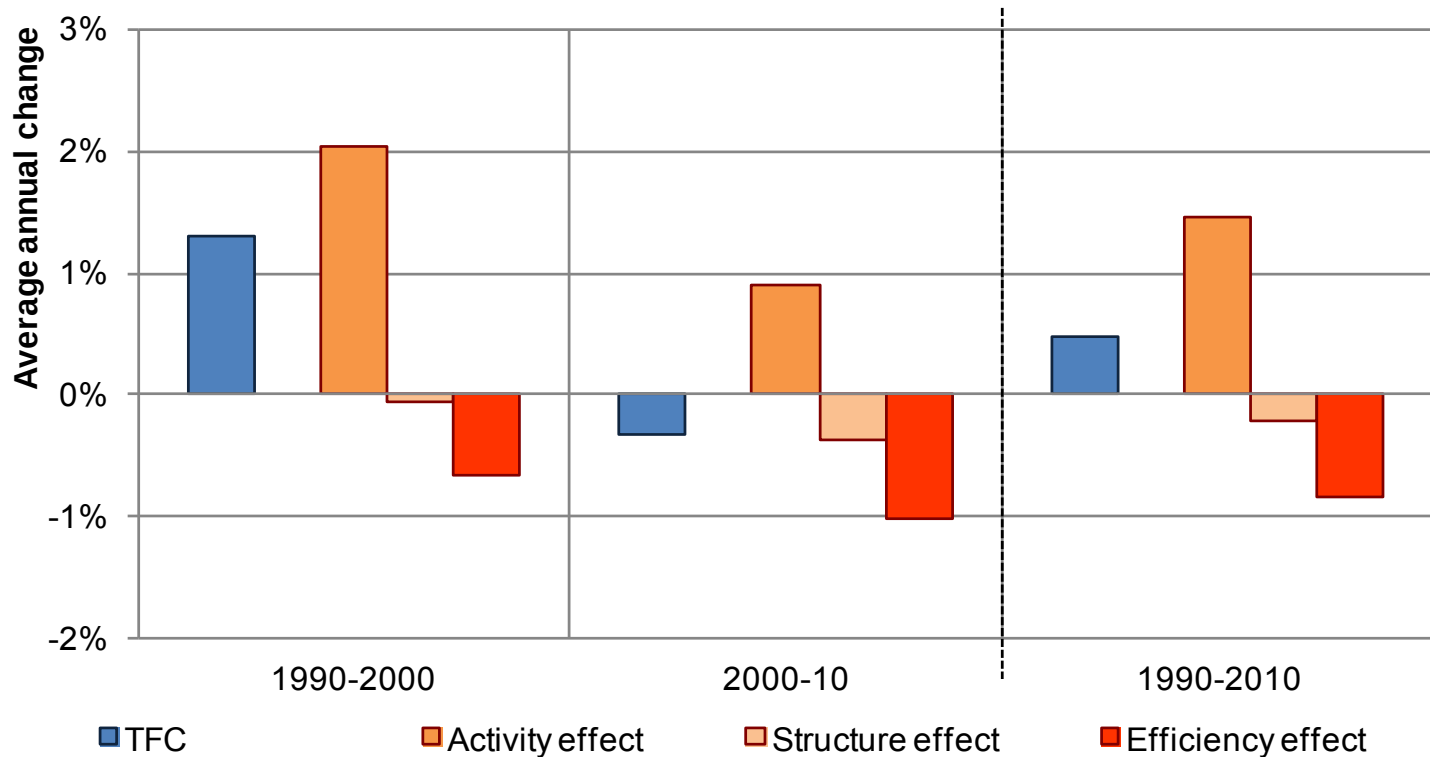


Contribution of energy efficiency compared to other energy resources consumed in 2010 in 11 IEA countries



Energy efficiency has been the key factor restraining energy growth

- Final energy use increased by 0.5%/year between 1990 and 2010
- Efficiency effect is larger than the effect of structural changes in restraining energy growth

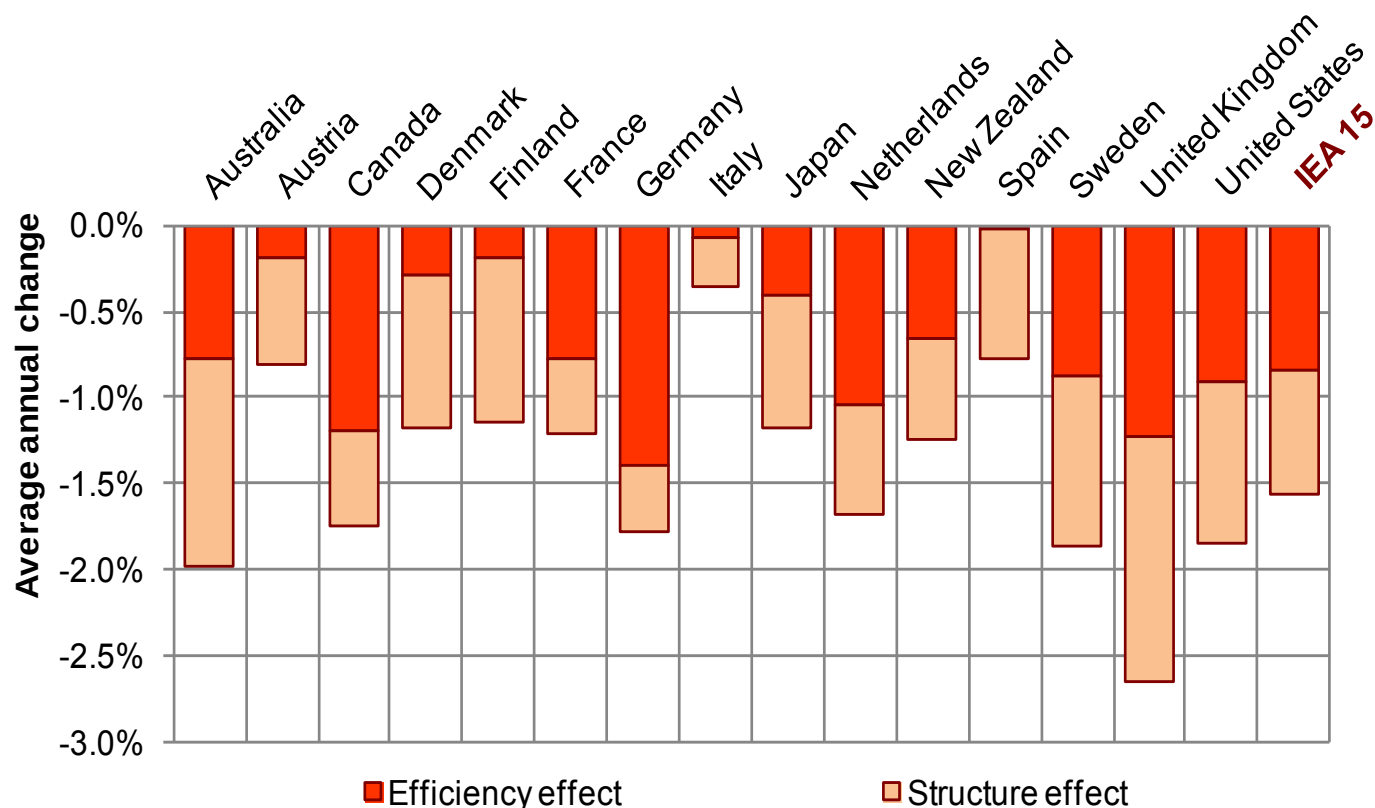


Changes in TFC, decomposed into structure, activity and efficiency effects for 15 IEA countries



For 4 out of 15 countries energy efficiency was the dominant factor reducing energy intensity

- Overall, just over half (54%) of the average annual reduction in intensity was due to improved efficiency.
- 46% of the reduction was due to changes in economic structure.



Changes in aggregate intensities of 15 IEA countries, decomposed into structure and efficiency effects, 1990-2010



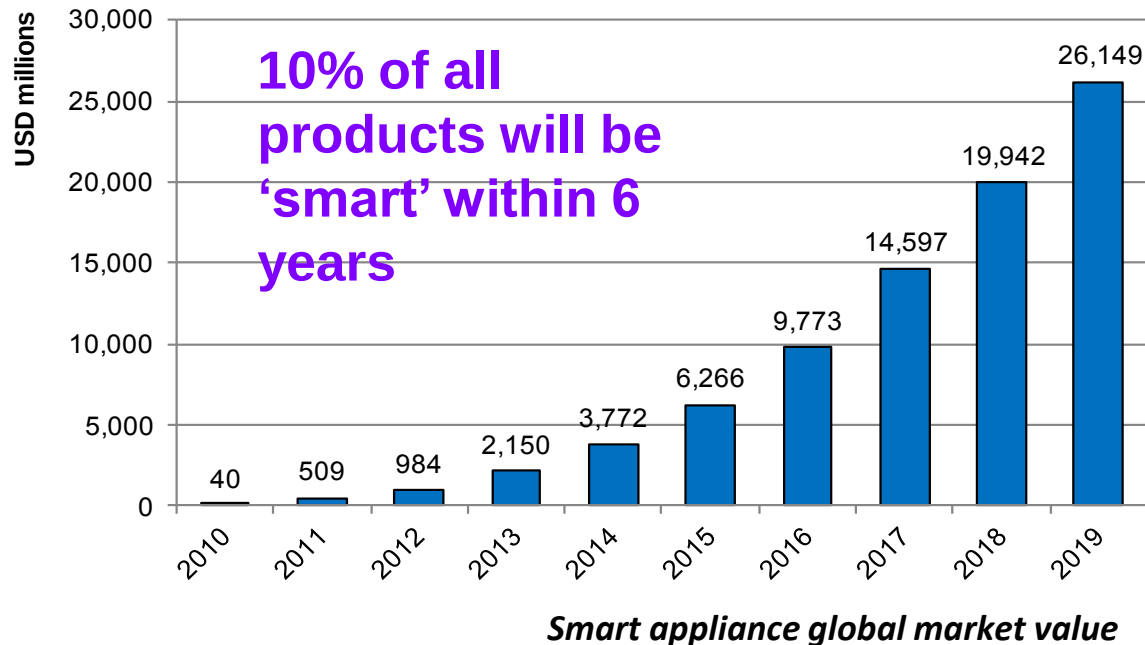
Country case studies

- **Markets have distinctive characteristics related to country-specific socio-economic conditions and resource endowments.**
- **Information provision and regulation have played a leading role in stimulating the energy efficiency market**
 - standards and labelling
 - providing access to energy assessments and financing
 - energy efficiency obligations placed on energy suppliers
- **Utility and energy service company (ESCO) schemes have also driven growth, especially among large energy users.**



Technology focus: the digital era is defining future appliance EE markets

- Appliances are increasingly becoming network-connected



- Network-connectivity and information communication technology can enable energy efficiency BUT they are also rapidly driving up energy demand
 - Network standby could be 550TWh/yr if we don't act
- Standards (Energy Star, Top Runner) are key



Japan: a Top Runner in Energy Efficiency

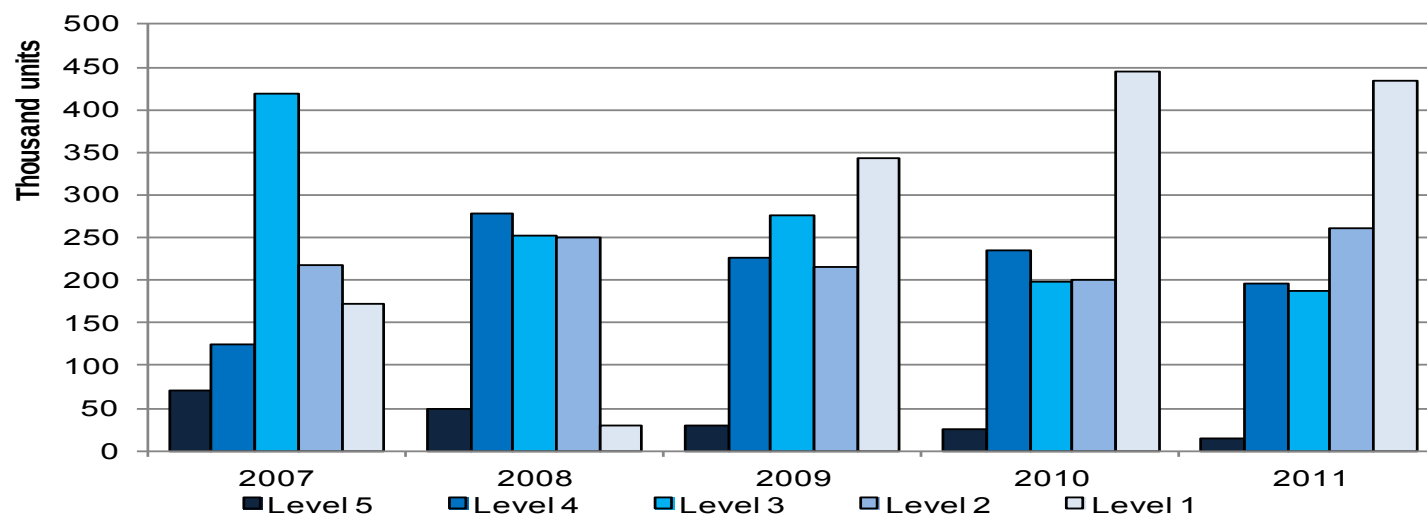
Products	Target year	Additional cost * (JPY billion)	Direct benefit ** (JPY billion)	Avoided energy demand
Lighting	2005	3.4	38.1	14 040 GWh (1.2 Mtoe)
Refrigerator	2004	19.0	80.7	29 749 GWh (2.6 Mtoe)
Gasoline vehicle (1 st regulation)	2010	41.5	107.6	7 654 ML (6.6 Mtoe)
Video tape recorder	2003	3.5	8.8	3 241 GWh (0.28 Mtoe)
Air conditioner	2004	29.1	63.7	23 483 GWh (2 Mtoe)
Electric rice-cooker	2008	2.1	2.4	888 GWh (0.08 Mtoe)
Gasoline vehicle (2 nd regulation)	2015	60.7	65.4	4 436 ML (3.9 Mtoe)
Warming toilet seat	2006	5.5	6.0	2 210 GWh (0.19 Mtoe)
Television	2003	28.1	23.9	8 819 GWh (0.76 Mtoe)
Personal computer	2005	48.0	17.9	6 611 GWh (0.57 Mtoe)
Microwave	2008	5.1	1.5	588 GWh (0.05 Mtoe)
Totals	-	246.0	416.0	-

- Expected to deliver USD 3 bn in consumer benefits for lighting, vehicles and appliances
- Broaden scope to cover three-phase induction motors, LEDs, heat pumps and printers in 2015.
- What is the energy efficiency spillover to international markets from Top Runner's stimulation of efficient technologies?



Korea: accelerating high efficiency appliances

- Korean ESCOs reached USD 330 million in 2011, an increase of 63% from 2010. ESCO's avoided 1.3 Mtoe in 2011.
- The total number of high-efficiency products is increasing very fast in Korea.
- Fuel-efficient vehicles are accelerating rapidly in Korea from 30% to 100% compliance with 17 km/l by 2015.





Prospects –looking forward

- **Energy efficiency markets are expected to grow in the medium term :**
 - Significant growth expected in private investment **enabled by government** policy rather than direct public investment.
 - **End-use energy price is also a key driver,**
 - but **analysis is limited by data availability** and relatively greater uncertainties in projecting future pricing trends.



EEMR2013: Table of Contents

- Executive Summary

- Introduction

■ Part I: Framework

- Measuring the market for EE

- Understanding the market for EE

- What the numbers say: EE and changing energy use

- Technology Focus: appliances, lighting and ICT

■ Part II: Country Review

- Australia; Canada; China; European Union; France; Germany; India; Japan; Korea; Mexico; New Zealand; South Africa; South East Asian countries; United Kingdom; United States

■ Part III: Selected Data



EEMR₂₀₁₄

EEWP support an EEMR in 2014 with:

- **A focus on Electricity Efficiency**
- **Succinct country case studies—expand country base**
- **Global Technology focus on Buildings or Transport**
- **Improved data from countries**

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Thank You

Market Trends and Medium-Terms Prospects

Contact : report@tky.iej.or.jp

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