



Energy Efficiency in the context of Subsidy Reform

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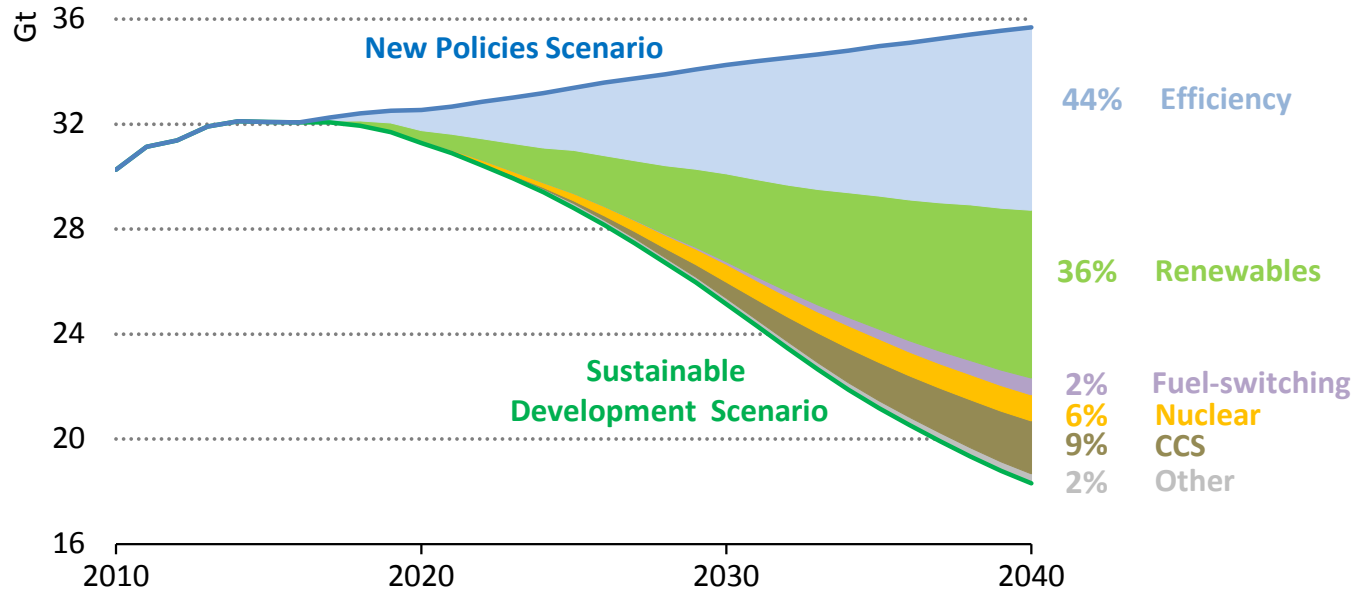
Issyk-Kul, Kyrgyzstan, 26 June 2018

The Bigger Picture

Energy efficiency as cornerstone of energy strategy

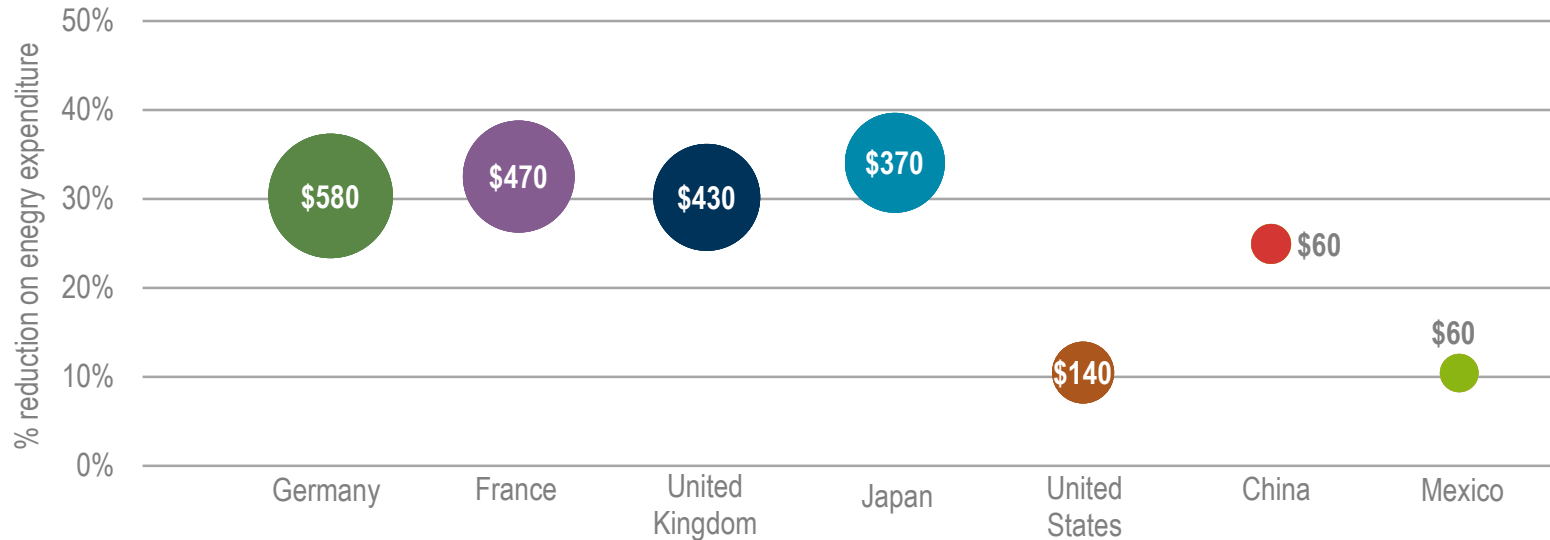
Energy efficiency is key to the global energy transition

Global CO₂ emissions reductions in the New Policies and Sustainable Development Scenarios



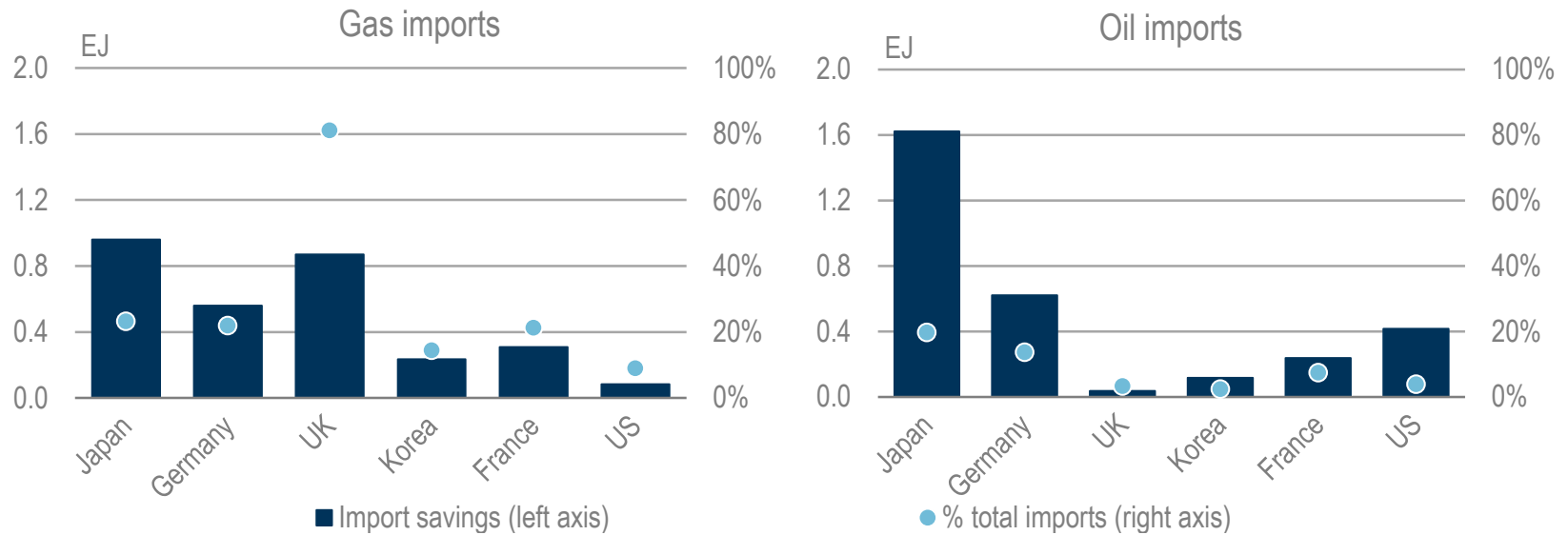
Energy efficiency and renewables account for nearly 80% of the cumulative CO₂ emissions savings in the Sustainable Development Scenario

Per capita household energy expenditure savings due to efficiency (2000-16)



Efficiency improvements have reduced household energy spending from 2000-2016. German consumers saved nearly USD 50 billion on their annual home and travel energy costs.

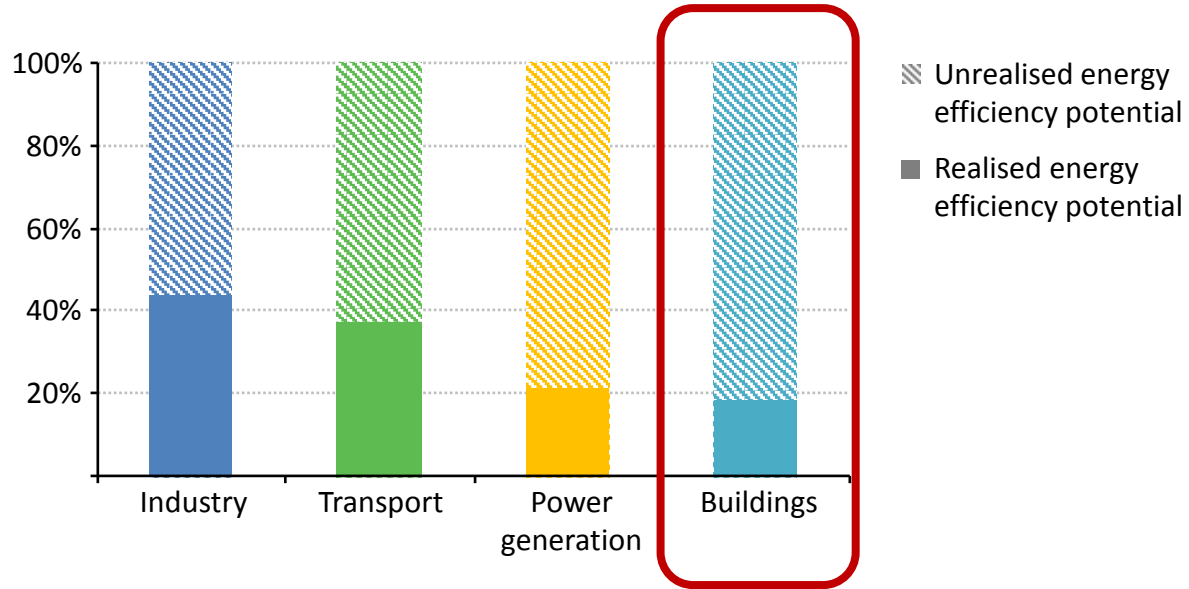
Reductions in energy imports from efficiency improvements (2000-16)



Overall, energy efficiency improvements have reduced energy imports by nearly USD 50 billion

Buildings offer largest energy efficiency potential globally

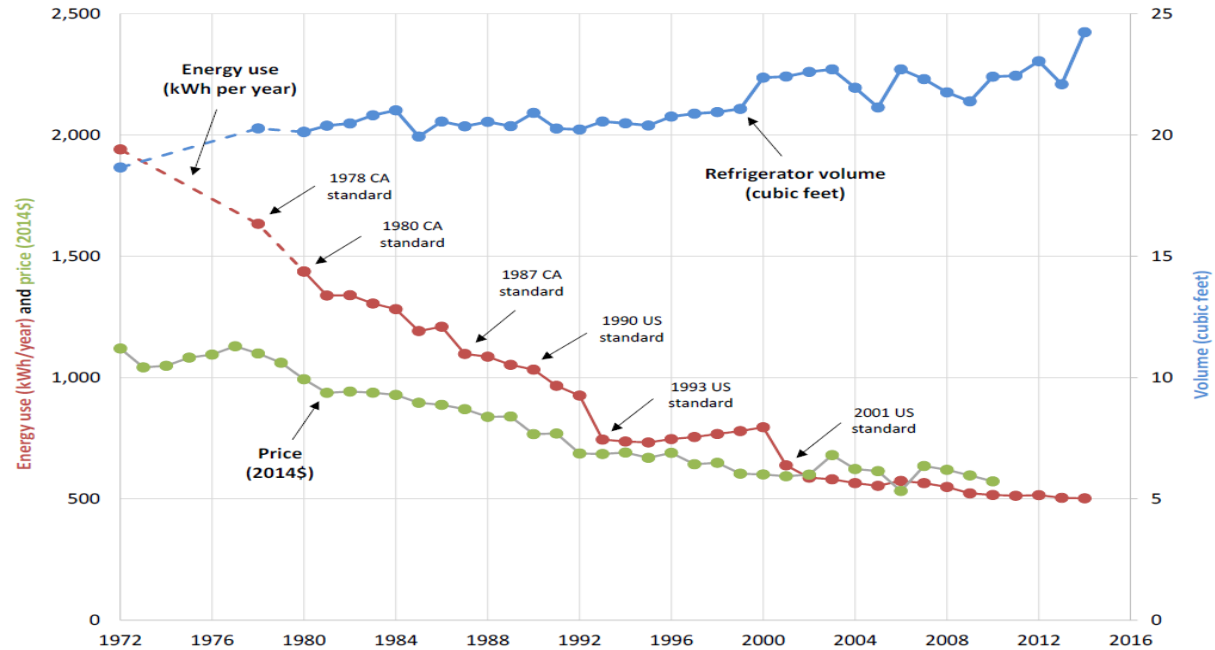
Energy efficiency potential by sector



80% of the economic potential to improve energy efficiency in buildings remains untapped

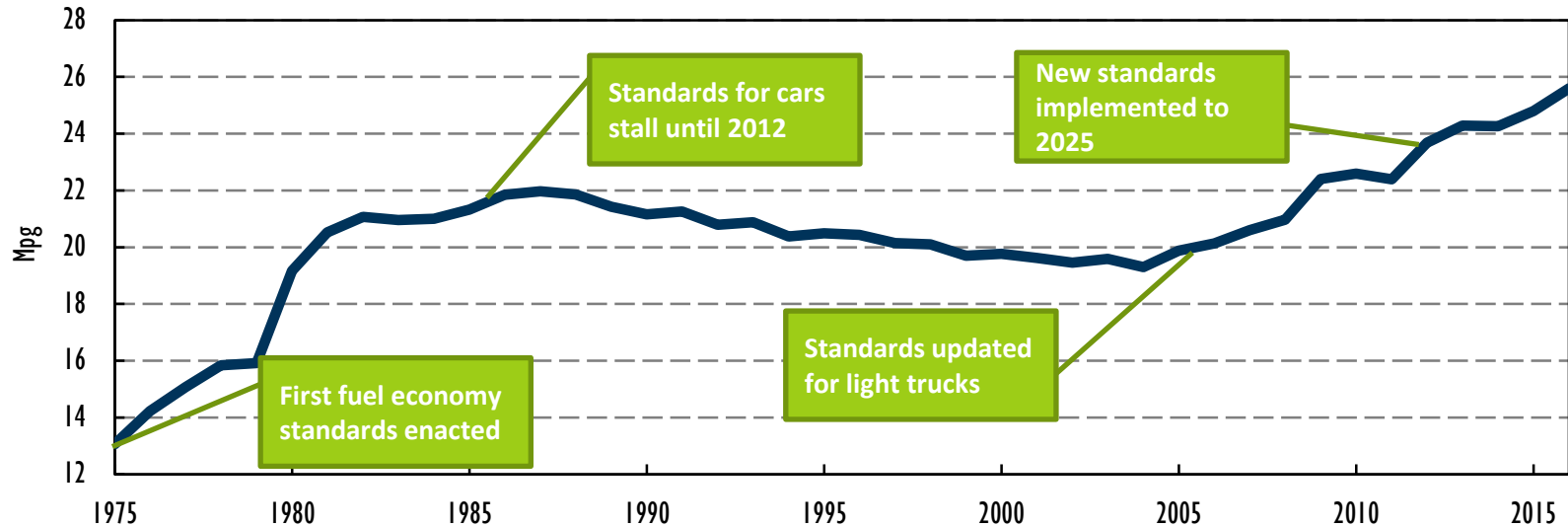
Standards force down appliance energy use

US refrigerator capacity and standards impact 1972 - 2016



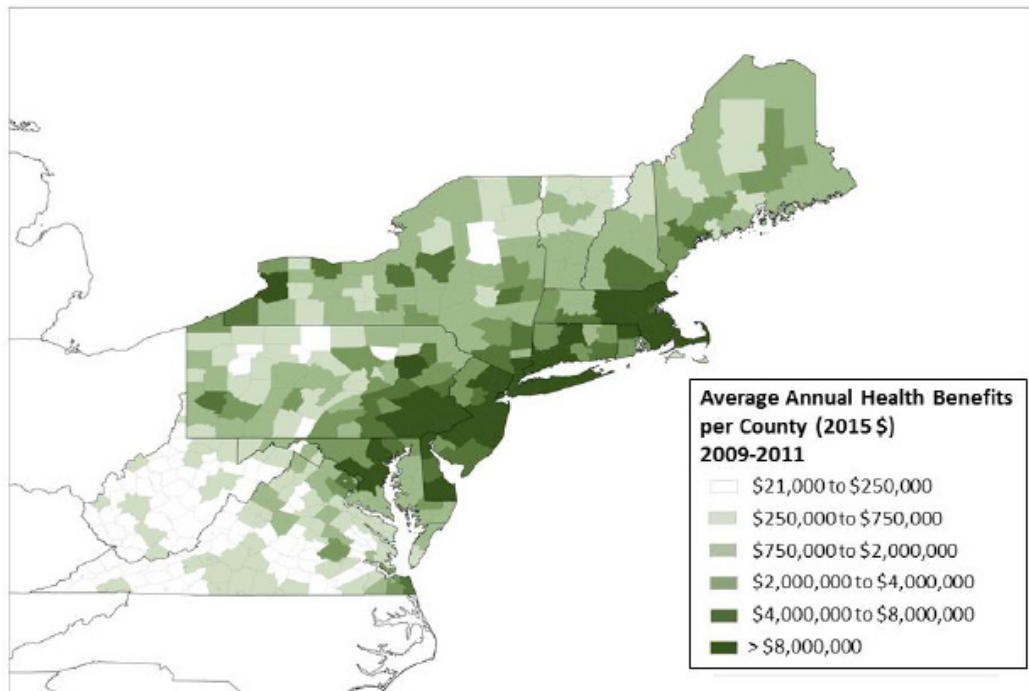
New refrigerators in the US use 75% less electricity than ones sold in 1972, but offer more capacity
Modern refrigerators also cost 50% less (on average) than older, more inefficient ones

Average fuel economy of passenger vehicles sold in the United States



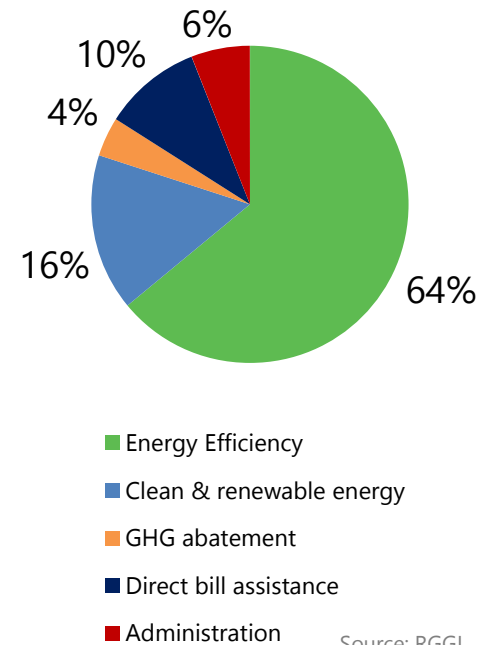
Average vehicle fuel economy in the US fell by 10% from 1985 to 2005 when standards stalled

Reduced health care costs



Source: Abt Associates analysis (2017).

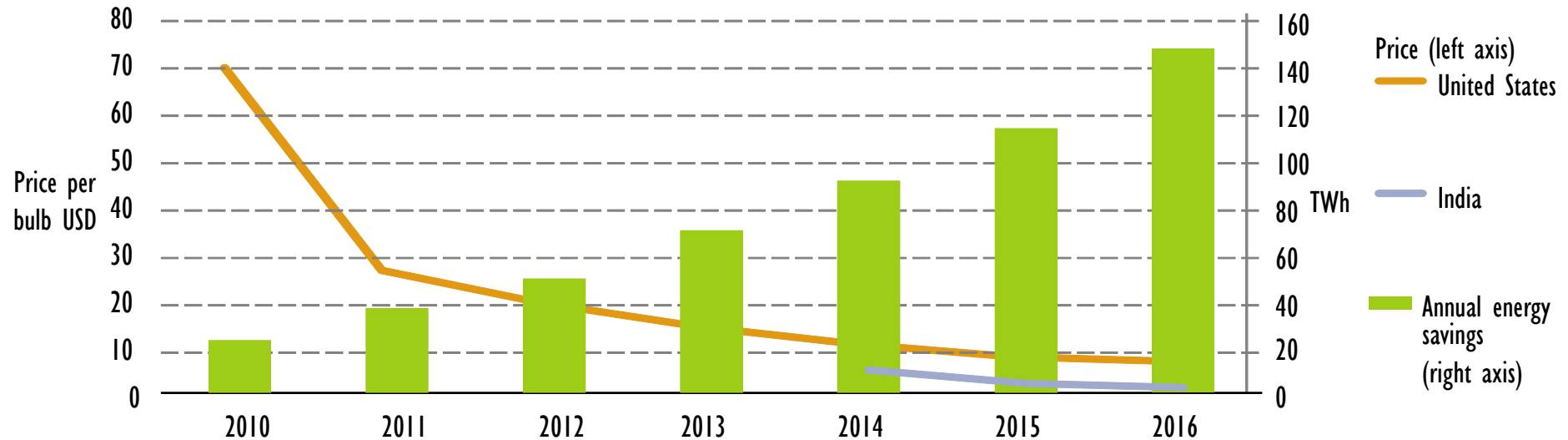
US Regional Greenhouse Gas Initiative (RGGI) funding



Source: RGGI, 2017

In some US states, energy efficiency is resulting in millions of dollars in avoided health costs.

Global annual energy savings from efficient lighting and LED bulb prices

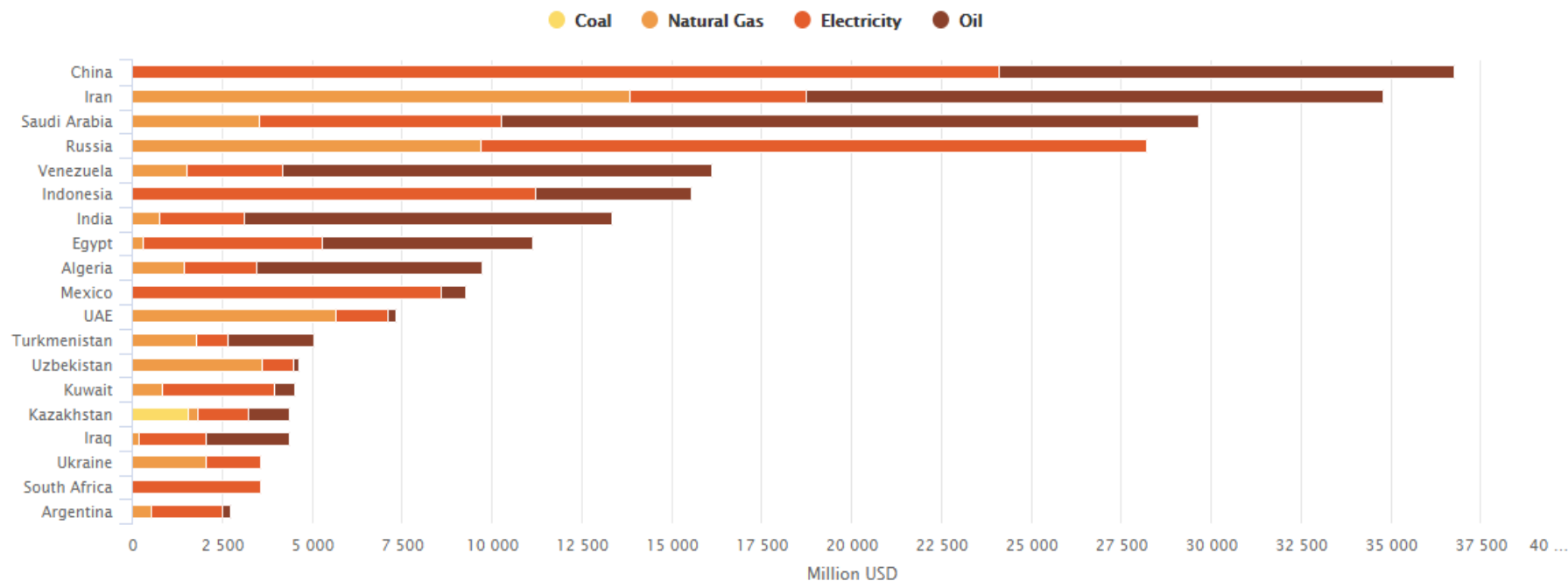


Falling LED prices boosted global investment to \$6 billion and generated incremental annual savings of 140 TWh.

A Closer Look at Subsidies

Exploring the link between efficiency and subsidies

Global Fossil Fuel Subsidies in numbers

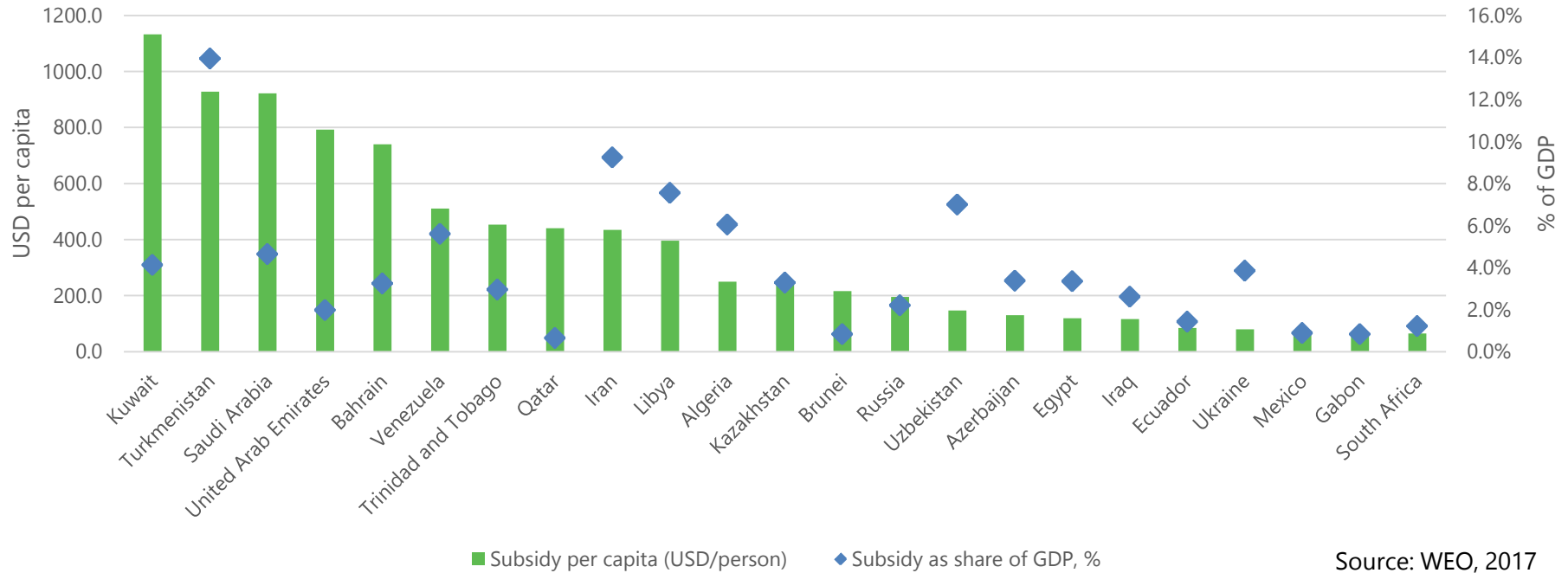


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The total subsidies of the world amounted to around 262 billion USD in 2016, of which 41% is for electricity and 40% for oil

Global Fossil Fuel Subsidies and Public Budget

Estimated value of fossil-fuel consumption subsidies per capita and share of GDP, 2016

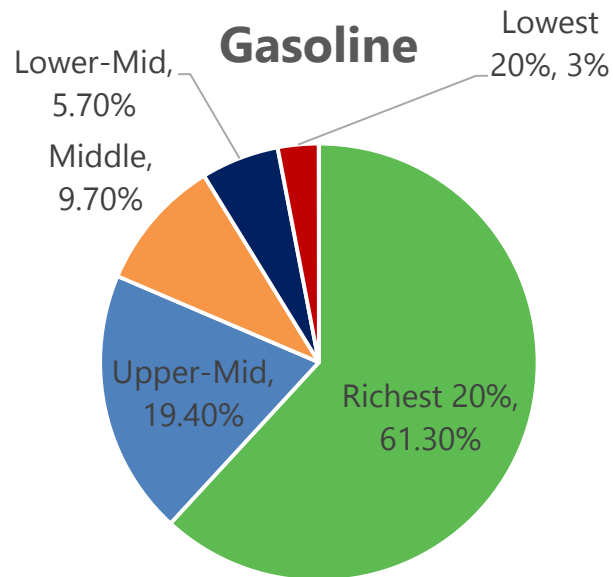
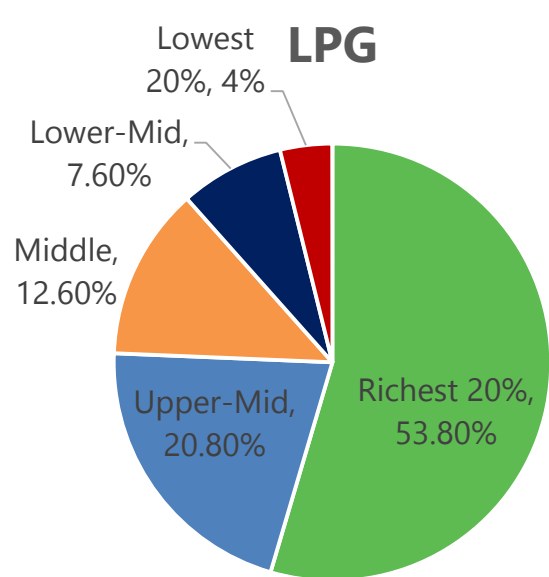


Source: WEO, 2017

Based on available data, in 2016 the highest subsidy per capita is 1132 USD in Kuwait, while the highest subsidy as share of GDP is 14% in Turkmenistan

Who are the real beneficiaries of subsidies?

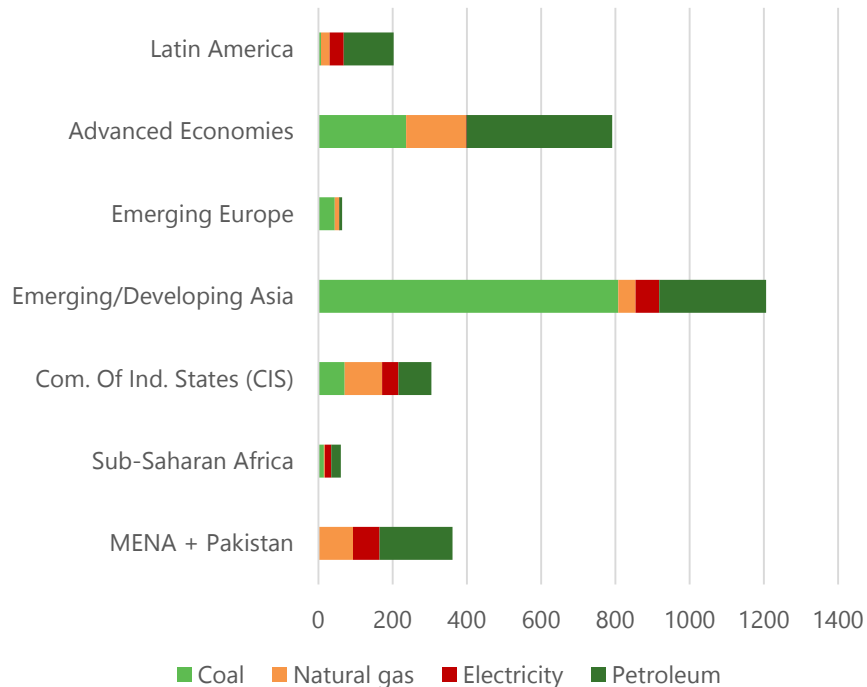
Global survey of energy subsidy beneficiaries



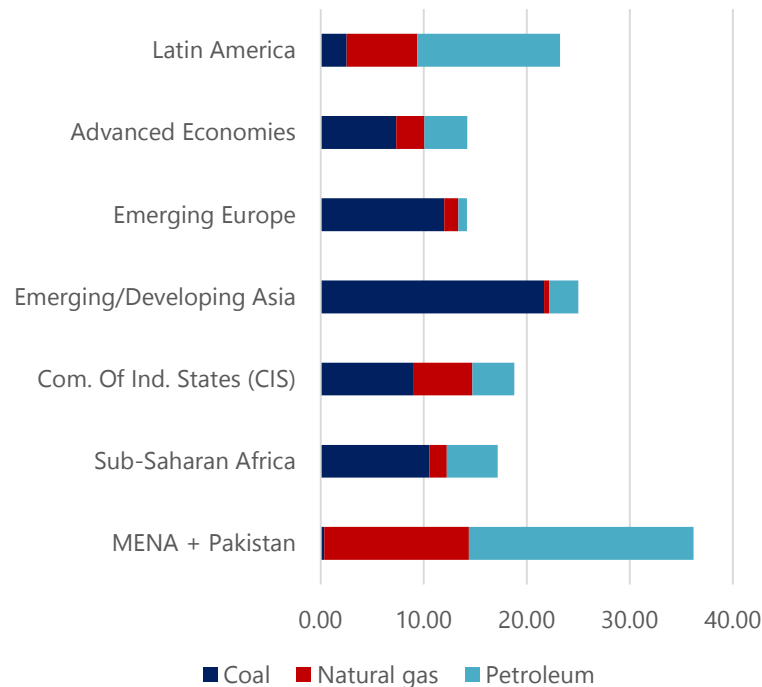
Source: IMF Working Paper 2010

Benefits of removing subsidies

Fiscal Gain from removing subsidies, in billion USD



Estimated Percent Reduction in CO₂ Emissions

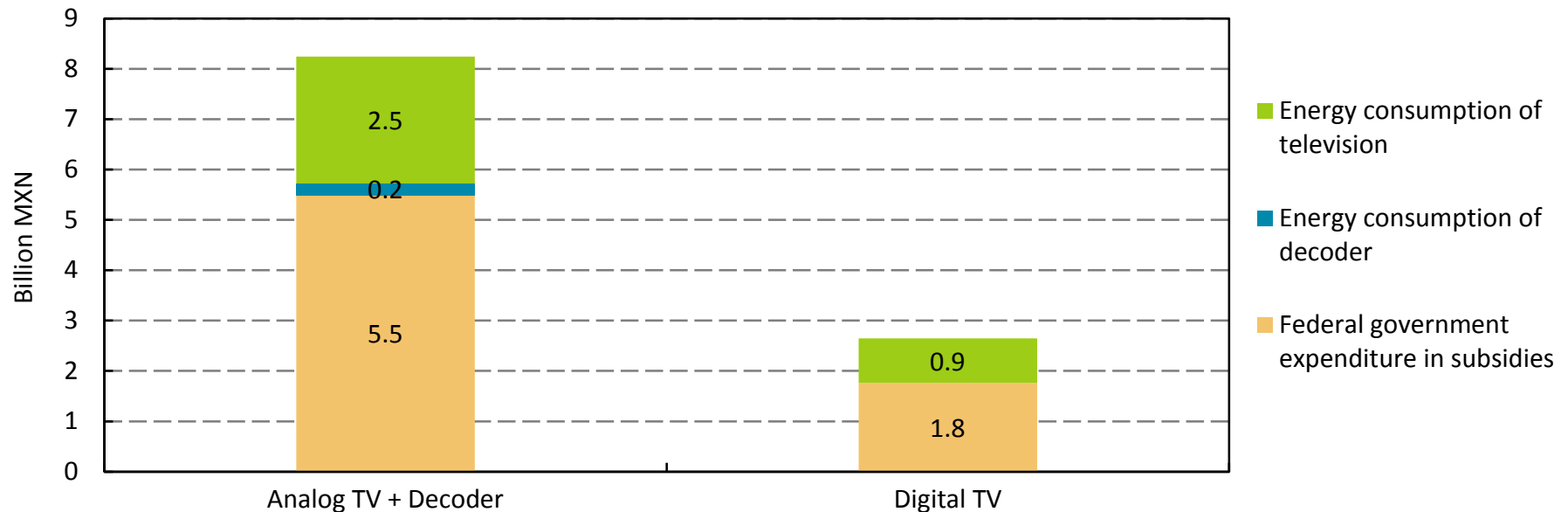


Source: IMF Working Paper, 2015

- In 2011, subsidies amounted to 1.95% of GDP.
- Finance Ministry estimated that for each peso assigned to the poorest 20% of the population, 19.5 pesos were given to the richest 20%.
- Phase-out of subsidies on gasoline, diesel and LPG at moderated rate – 1% per month for gasoline and diesel.
- Gradual increase of final consumer prices
- Residential and agriculture electricity tariffs still subsidized.
 - Mexico currently revising the complex electricity tariff structure
 - Ensuring subsidies are directed to low-income households.
- Of the 8 residential electricity tariffs – 7 receive subsidies

Efficiency reduces the impact of subsidy reform

Comparison of annual expenses by households and Mexican government with analogue television and decoder versus digital television



The Mexican government is providing 14 million LED TVs to low-income households. The USD 102.4 million cost is expected to be recovered through avoided consumption and reduced subsidies

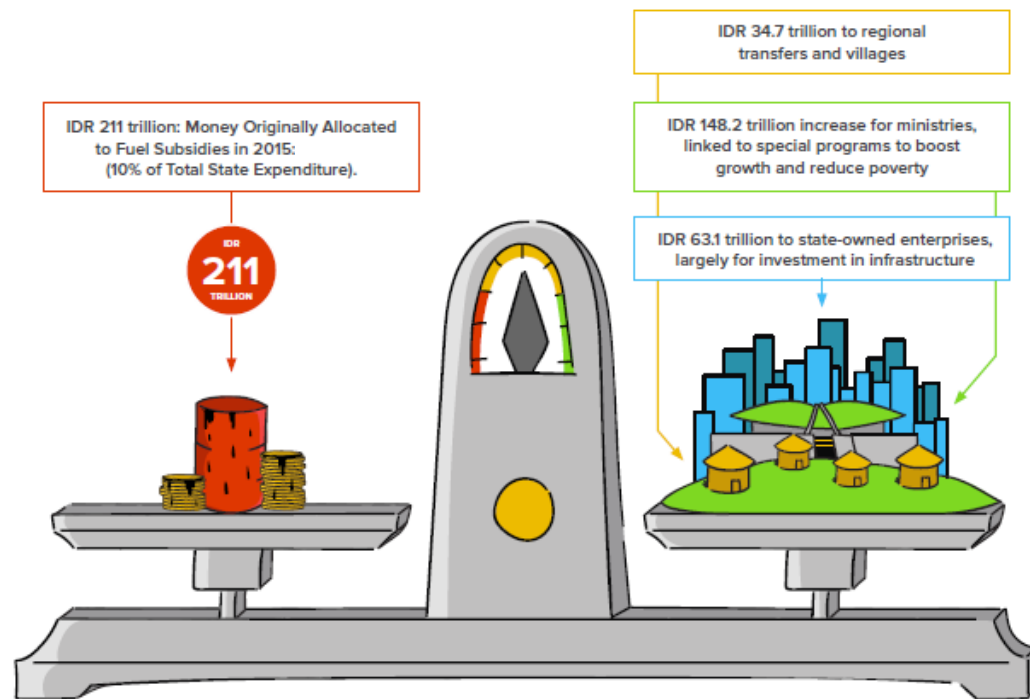
- Replacing 1.6 million inefficient refrigerators among Mexico's low-income households led to...

\$22.4 million / year in avoided energy subsidies

> 1500 permanent jobs in manufacturing
and inefficient refrigerator destruction

Reduced subsidies free up funds for other purposes

Fuel subsidy savings and major increase in revised Indonesian government budget, 2015



Subsidy savings in 2015 in Indonesia led to investments in social welfare and infrastructure through increased budgets for ministries, state-owned enterprises, regions and villages

Subsidies can be switched to other forms of support



Switching support away from fossil fuel subsidies to energy efficiency and renewable energy will improve climate outcomes

- Energy subsidies are a significant draw on public budgets
 - Around 261 billion USD around the world, with national share of GDP reaching even as high as 14%
- Subsidy reform is progressing across the world
 - Focus more on (larger) consumer subsidies rather than producer subsidies
 - Reducing public expenditure often a primary driver, not efficiency
 - Concerns centre on the poor and vulnerable, and industrial competitiveness
- Energy efficiency reduces the impact of subsidy reform
 - Only few examples of formally reallocating fiscal savings to energy efficiency

Energy Efficiency 2017 – our annual market report, stay tuned for 2018 edition

<http://www.iea.org/efficiency/>

The Future of Cooling, new special report in 2018

<https://www.iea.org/cooling/>

featuring interactive web page

<http://www.iea.org/exchange/cooling/>

Energy Efficiency Indicators

http://www.iea.org/publications/freepublications/publication/EnergyEfficiencyHighlights_2017.PDF

Our dedicated web pages on iea.org provide a wealth of information

<http://www.iea.org/topics/energyefficiency/>



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