Energy Efficient Prosperity

Brian Dean, Energy Efficiency, International Energy Agency

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Graph title, centered

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Energy Efficient Prosperity

doing the same with less

to

doing more with the same

to

doing even more with more

to

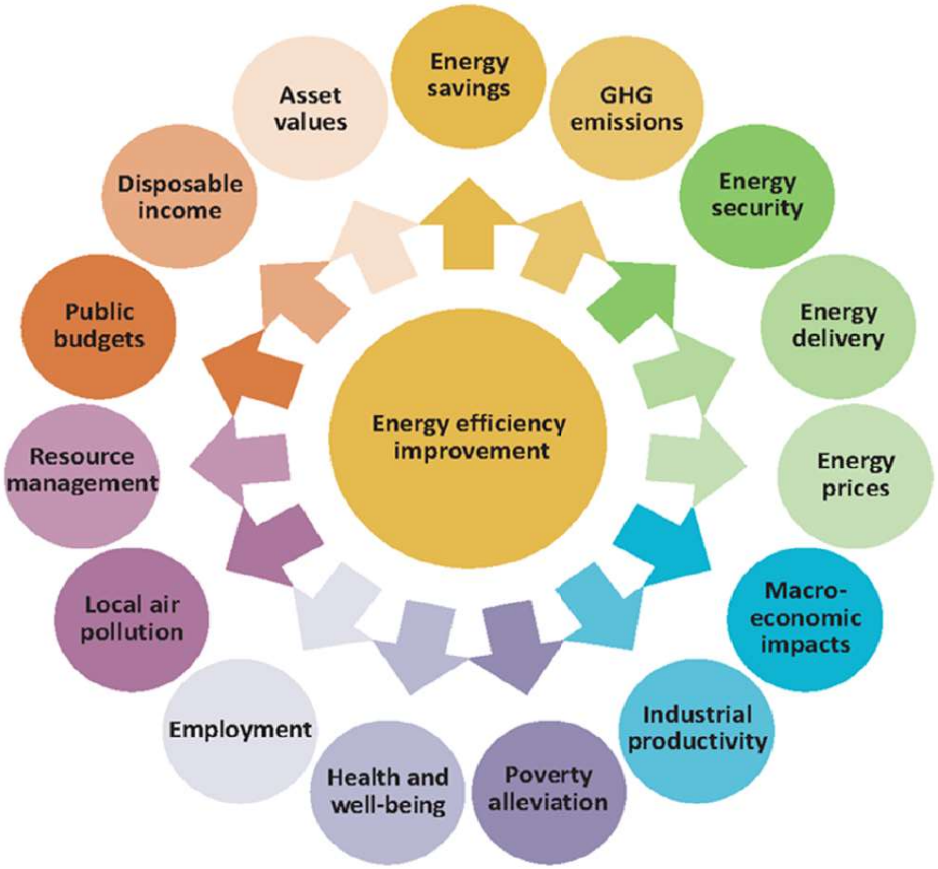
raise standards of living and promote energy efficient prosperity

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Transition title

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Multiple Benefits of Energy Efficiency



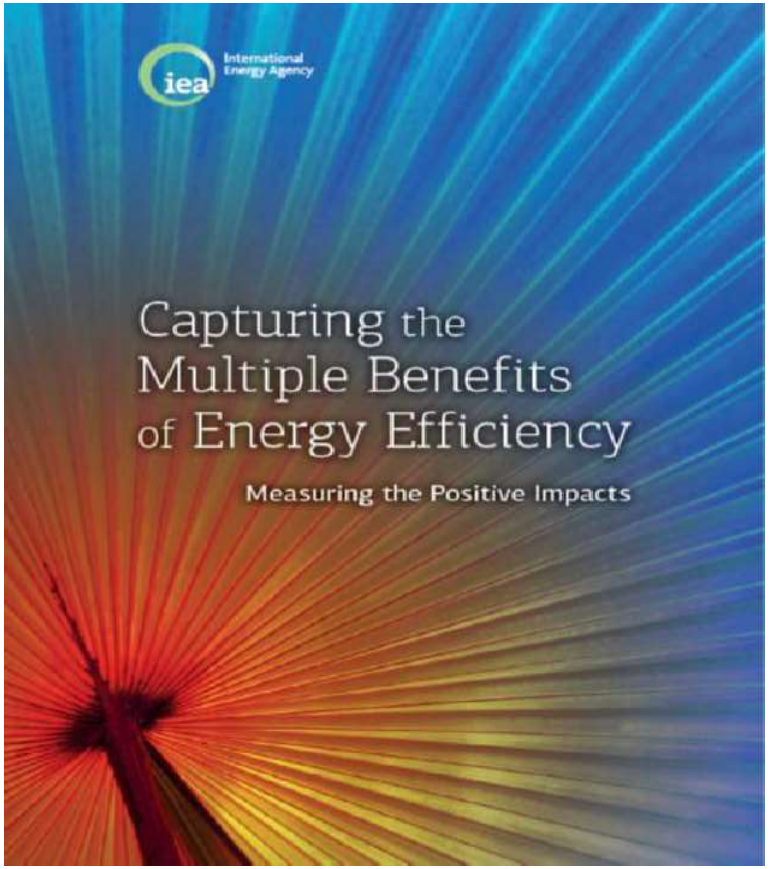
Energy Efficient Prosperity

Energy efficiency as a means to support economic and social development.

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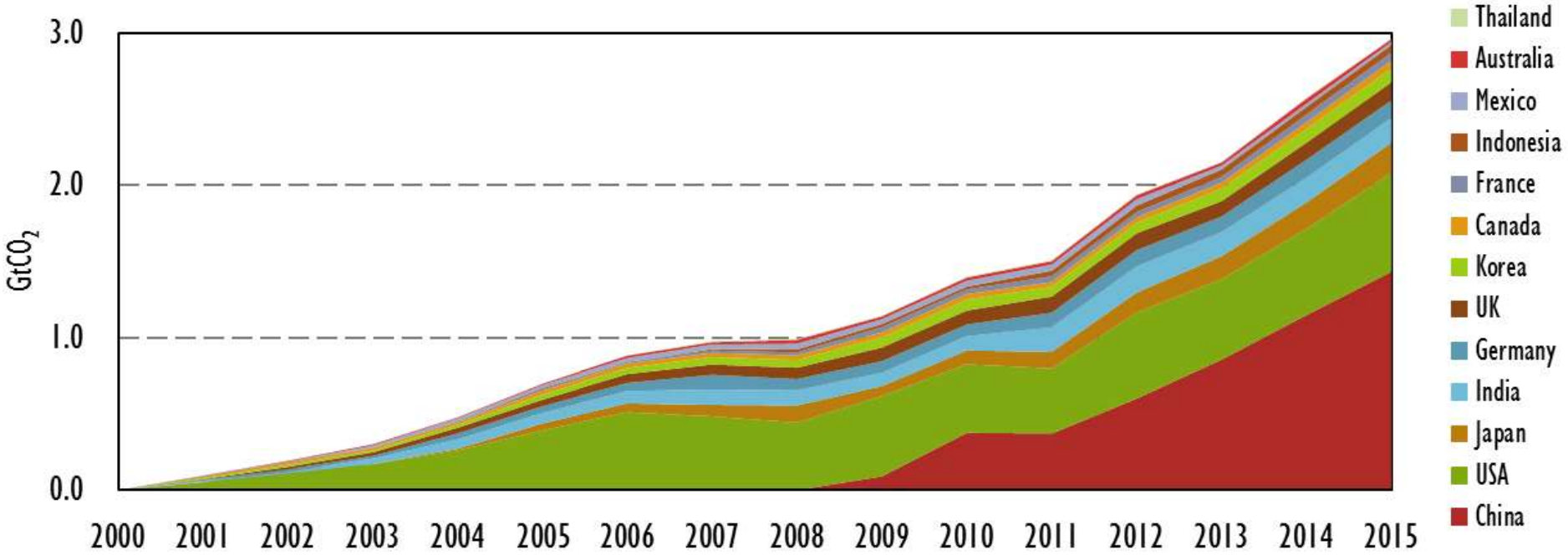
Multiple Benefits of Energy Efficiency

International	Energy price reduction Greenhouse gas emissions reduction
National	Reduced energy demand and local price reduction Reduced public health spending Energy security Potential net increase in employment
Sectoral	Increase in re-sale value of home Improved bill payments for energy providers Jobs in installation and production of insulation materials
Individual	Lower energy bills (discretionary) Increased disposable income Warmer, drier, more comfortable home Improved health and well-being potential



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Energy Efficient Prosperity: Reduced emissions



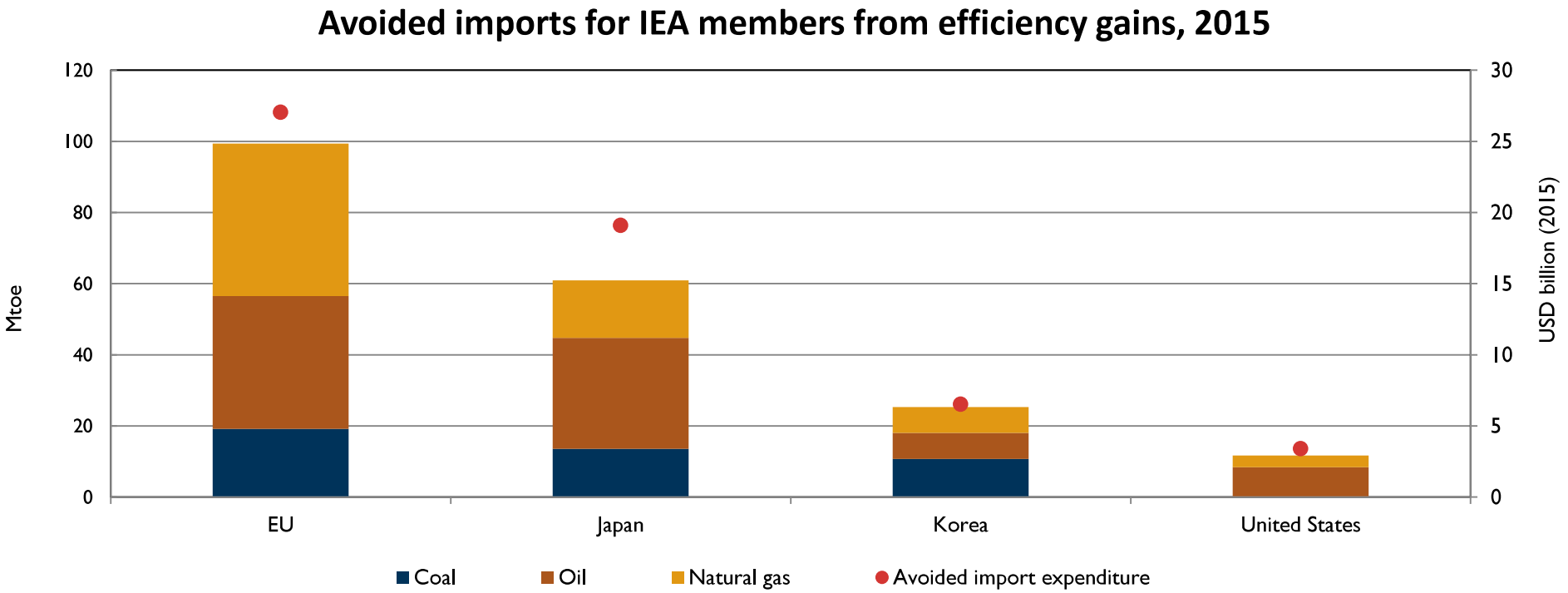
Without the energy efficiency gains in the world's largest energy consuming countries since 2000, over 3.0 billion additional tonnes of CO_2 would be emitted each year.

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Energy Efficient Prosperity: Reduced air pollution



Energy Efficient Prosperity: Energy security



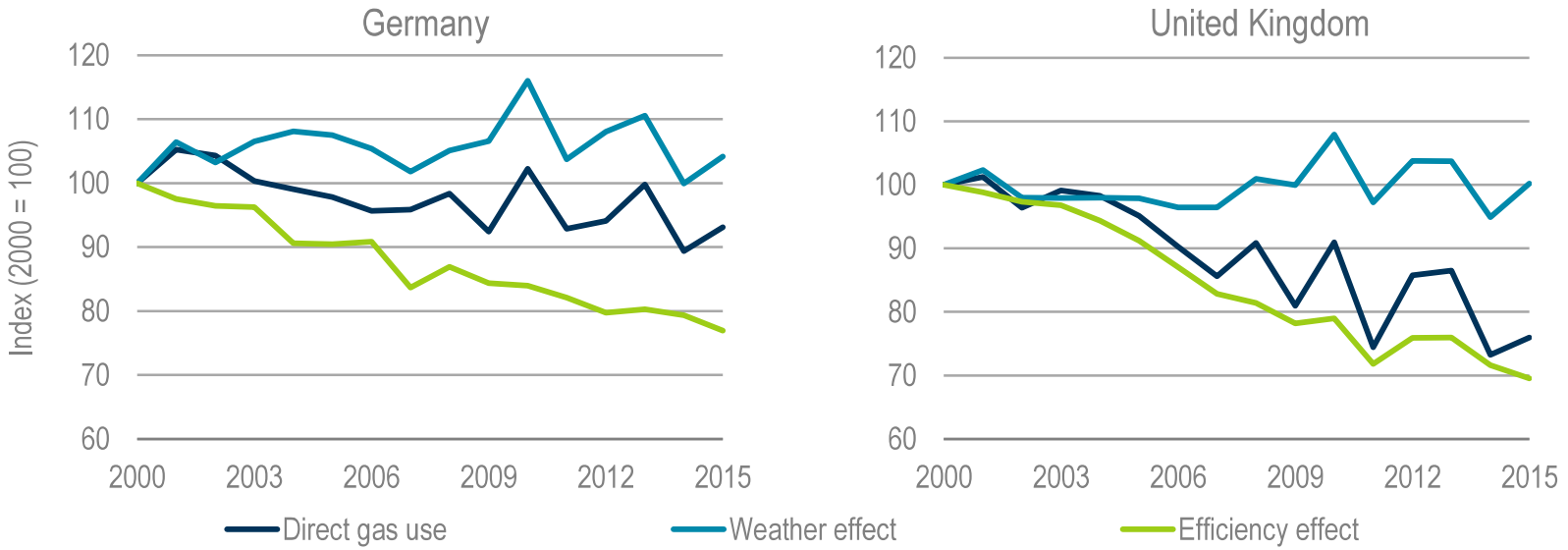
The EU made up half of all IEA import savings and reduced imports bills by $27 billion (10% of its total energy import bill)

:**Source** IEA Energy Efficiency Market Report 2017

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Energy Efficient Prosperity: Energy security

Weather and efficiency effects on natural gas in Germany and the United Kingdom, 2000–15



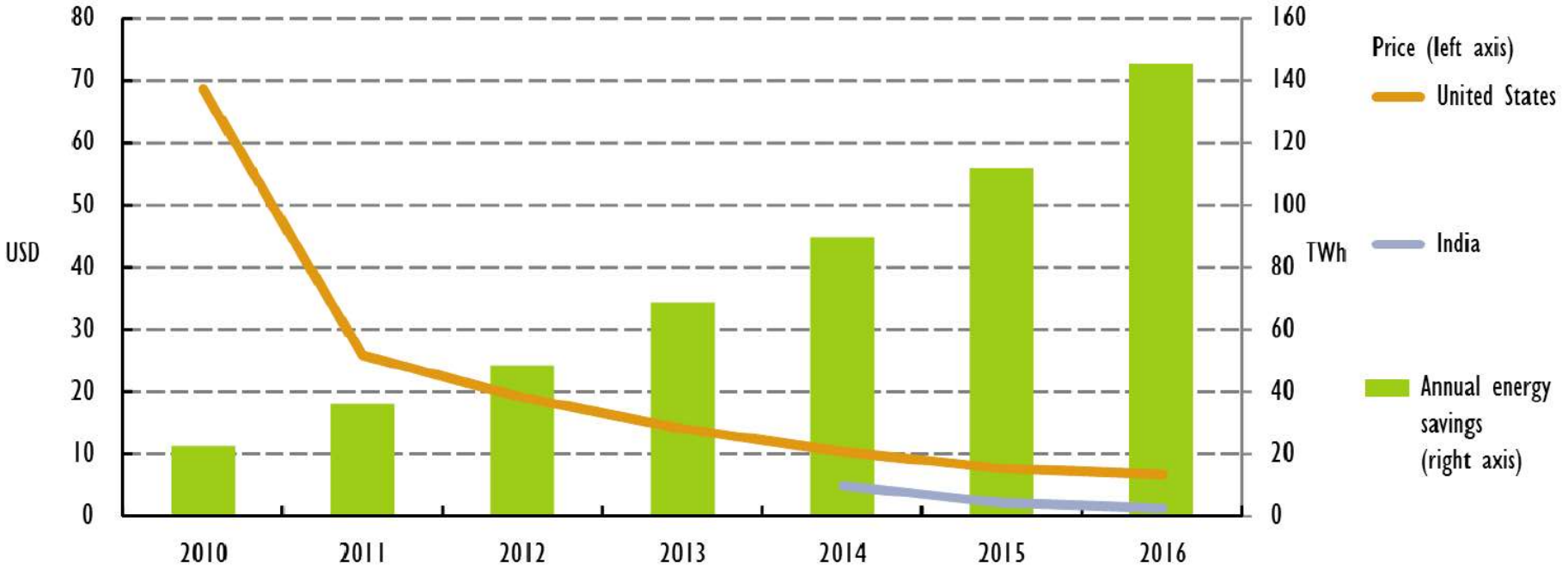
By reducing the weather sensitivity of gas imports.

:**Source** IEA Energy Efficiency Market Report 2017

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Energy Efficient Prosperity: innovation & new markets

Global annual energy savings from efficient lighting and LED bulb prices

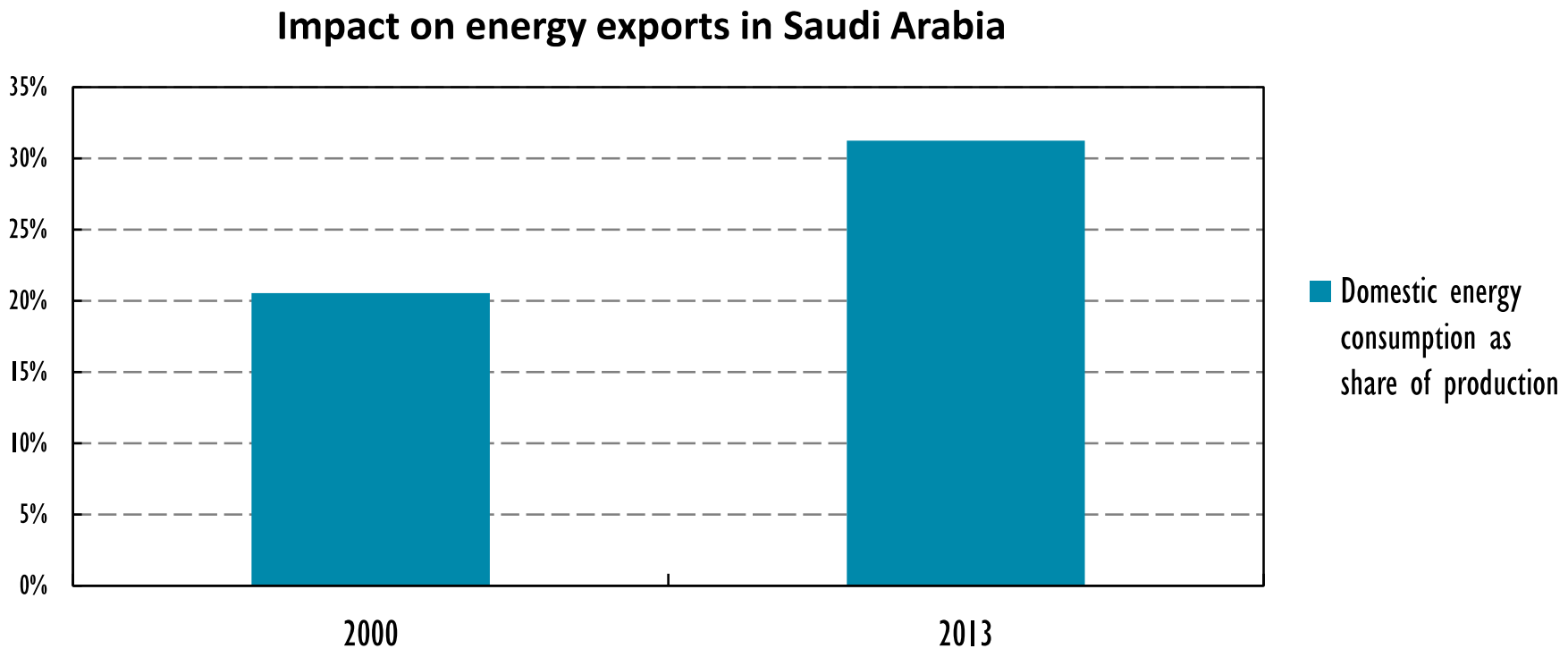


Falling LED prices boosted global investment to $6 billion and generated incremental annual savings of 140 TWh

:**Source** IEA Energy Efficiency Market Report 2016

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Energy Efficient Prosperity: Energy export revenues

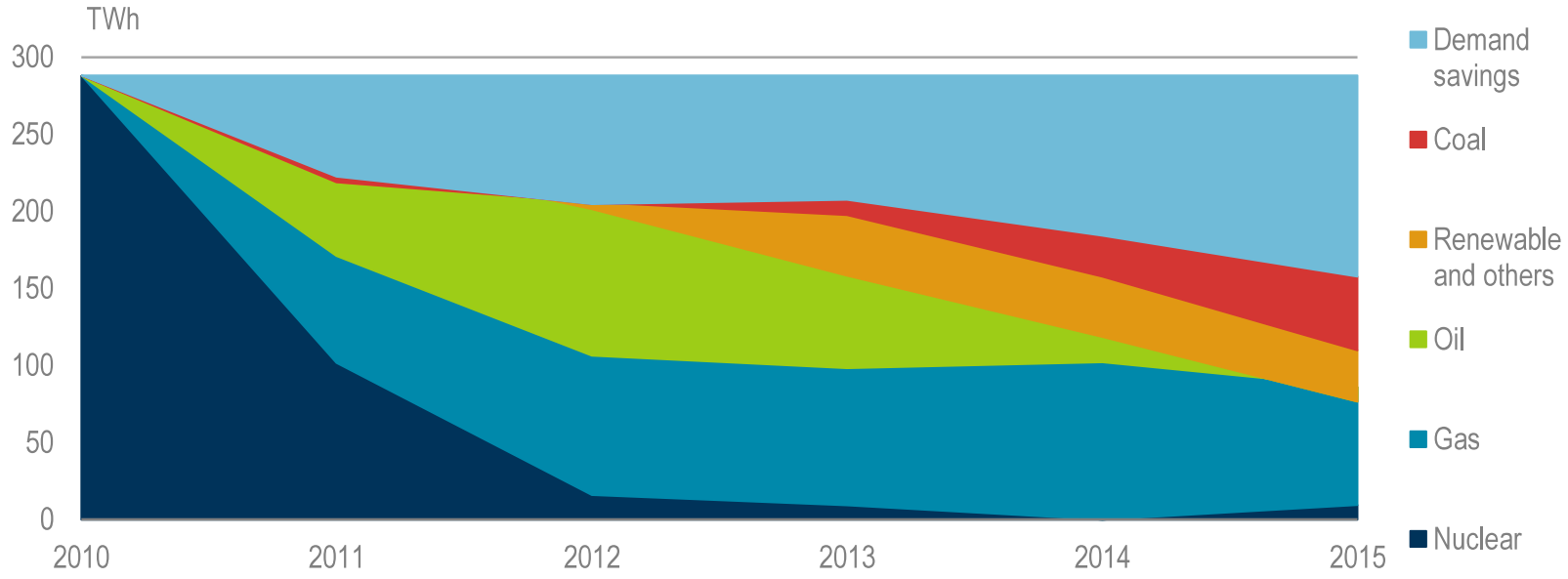


Air conditioner standards alone are targeted to improve efficiency by 35% saving 47 million barrels of oil and increasing export revenues by USD 2.4 billion

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Energy Efficient Prosperity: Emergency response

Impact on the need for nuclear energy generation in Japan, 2010-15

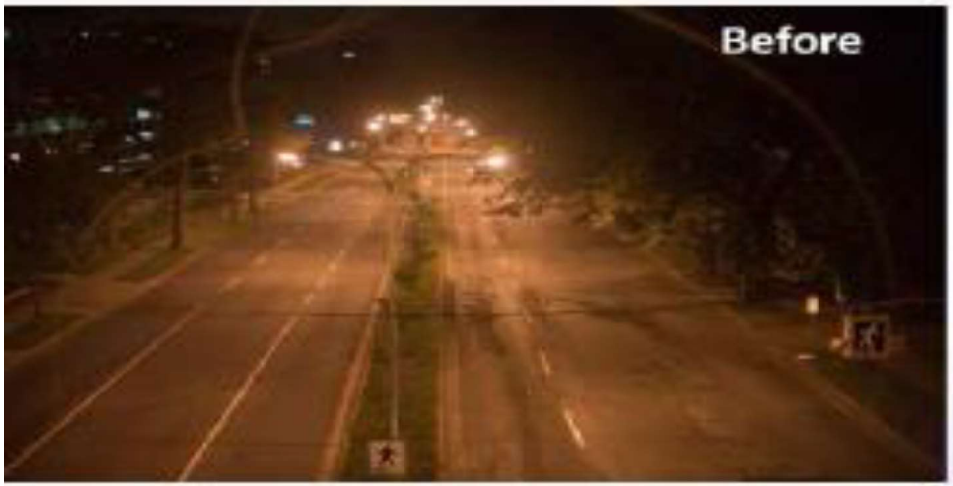


Following the Fukushima disaster in Japan, energy demand reductions have been responsible for replacing 44% of previous nuclear power generation.

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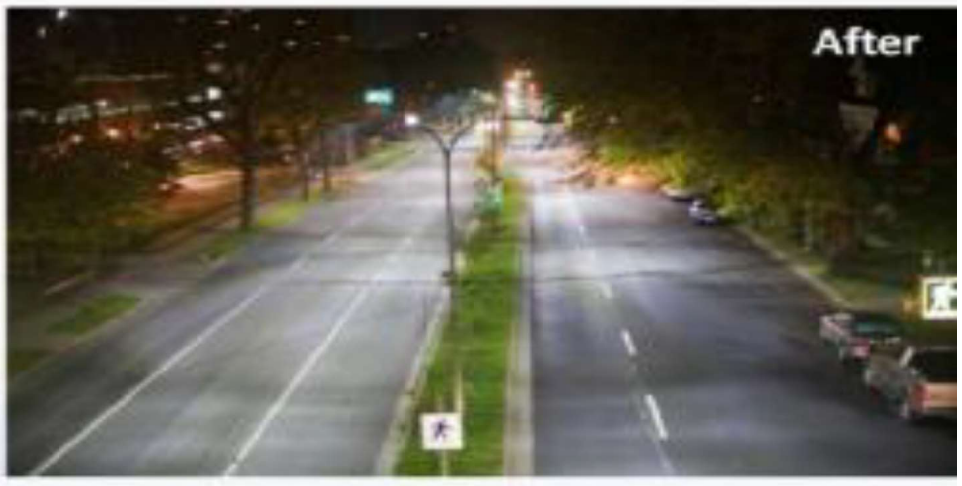
Energy Efficient Prosperity: Safety

Poor visibility



More energy use

Better light quality



Less energy use

Improved lighting has improved safety

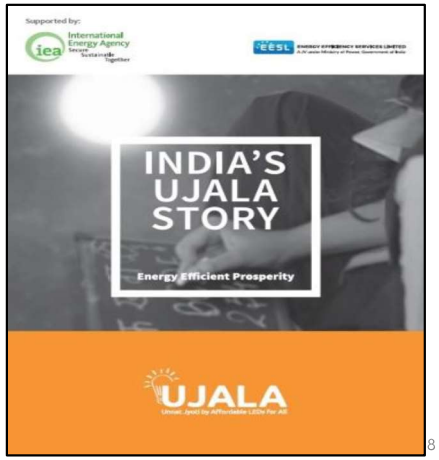
Source: APEC, 2011 - Survey Report and Best Practice Guide for LED Street and Outdoor Lighting

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Energy Efficient Prosperity: In India

- Energy Efficiency Services Limited (EESL) is a publicly owned energy services company with the mission of delivering energy efficiency across India
- The EESL's UJALA (meaning Light in Hindi) is the world's largest lighting replacement programme
- **To date:** More than **299 million** LEDs distributed
- **Aim:** Replace 770 million inefficient lamps with modern, efficient and longer lasting LED lamps by 2019, without the need for any government subsidies
- **Telling the story:** India's UJALA Story

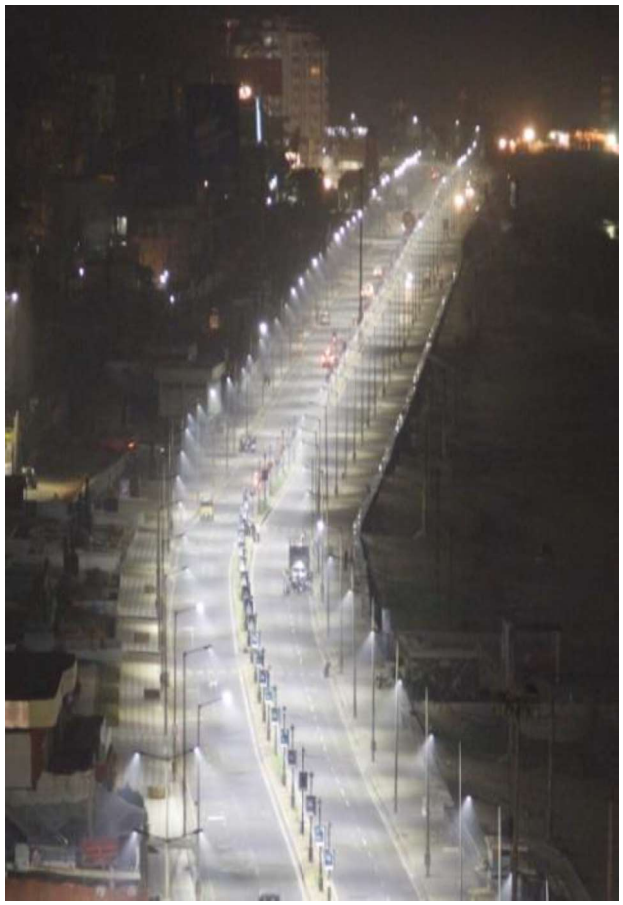




Energy Efficient Prosperity: In India

India EESL lighting programme (UJALA) benefits:

1. Efficiency is made affordable to everyone
2. Temporary employment is provided to over 35,000 people
3. Improved safety on newly lit streets
4. Household electricity bills reduced by 15% a year
5. Investment in efficiency is less than half the cost of electricity generation
6. Cost of subsidies to public budgets are reduced
7. CO_2 emissions are reduced by 3 million tonnes per year
8. Electricity savings are equal to generation from a 500 MW coal fired power station



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Energy Efficient Prosperity: Improved comfort



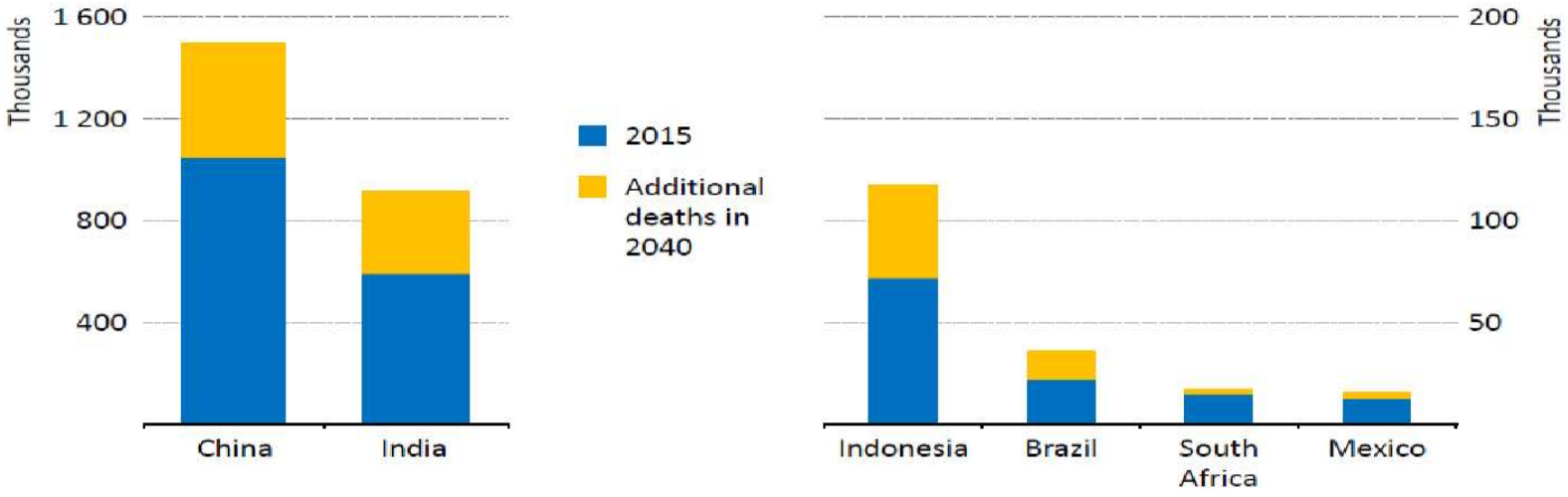
Overall 50% reduction in electricity consumption and a more comfortable place to live

Source: Green Building Council – South Africa

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Energy Efficient Prosperity: Improved health

- Air pollution is the fourth largest risk to human health
- 3.5 million premature deaths are linked to energy poverty due to the use of biomass for cooking and kerosene for lighting
- 3 million premature deaths are linked to outdoor air pollution, mostly in cities



Source: World Energy Outlook Special Report on Energy and Air Pollution, IEA 2016

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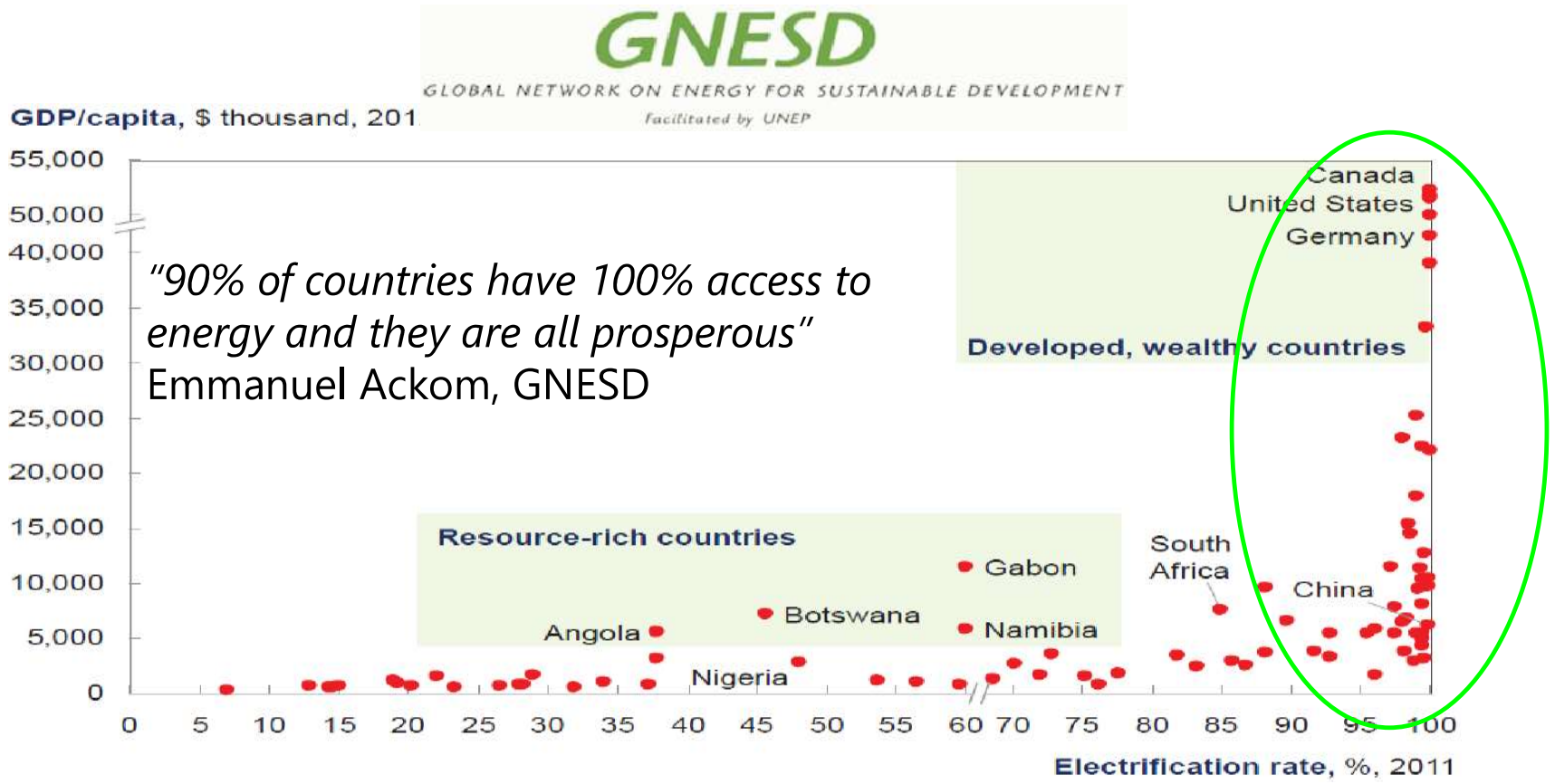
Energy Efficient Prosperity: Access to energy services

- Energy efficient appliances together with the BBOX home solar system enable customers to use the following appliances for up to 6 hours:
  - 4 lights
  - 15.6" TV
  - Radio
  - Portable light
  - Charge 2 mobile phones
- Solar system supplies 100Wh and the appliances consume approx. 88Whs;
- Service is managed and paid for through mobile phone.



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Energy Efficient Prosperity: Access improves prosperity

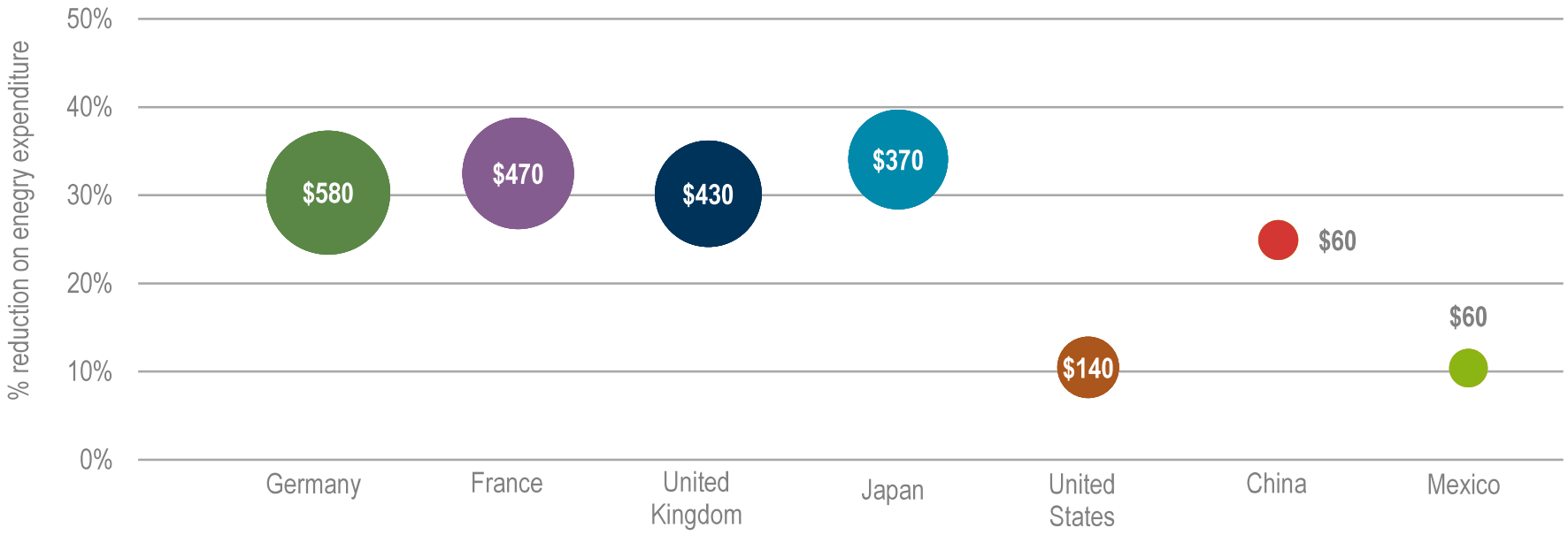


Source: Electricity Access Database, IEA WEO, 2013; McKinsey, 2015

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Energy Efficient Prosperity: Household cost savings

Per capita household energy expenditure savings in 2016 due to efficiency

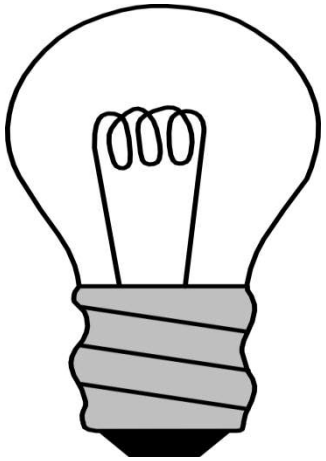


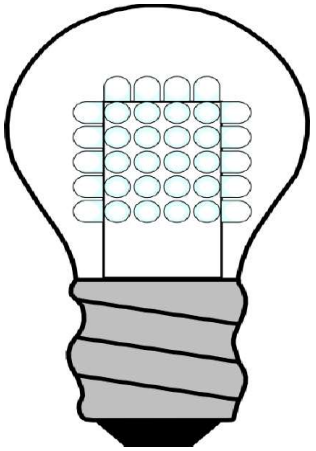
Efficiency improvements made since 2000 reduced energy spending in 2016. German consumers saved nearly USD 50 billion on annual home and travel energy costs.

:**Source** IEA Energy Efficiency Market Report 2017

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Energy Efficient Prosperity





How do we, as the energy efficiency community, get better at making these messages heard when and where it really matters?

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