

World Energy Outlook 2014

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Pertamina Energy Outlook 2015

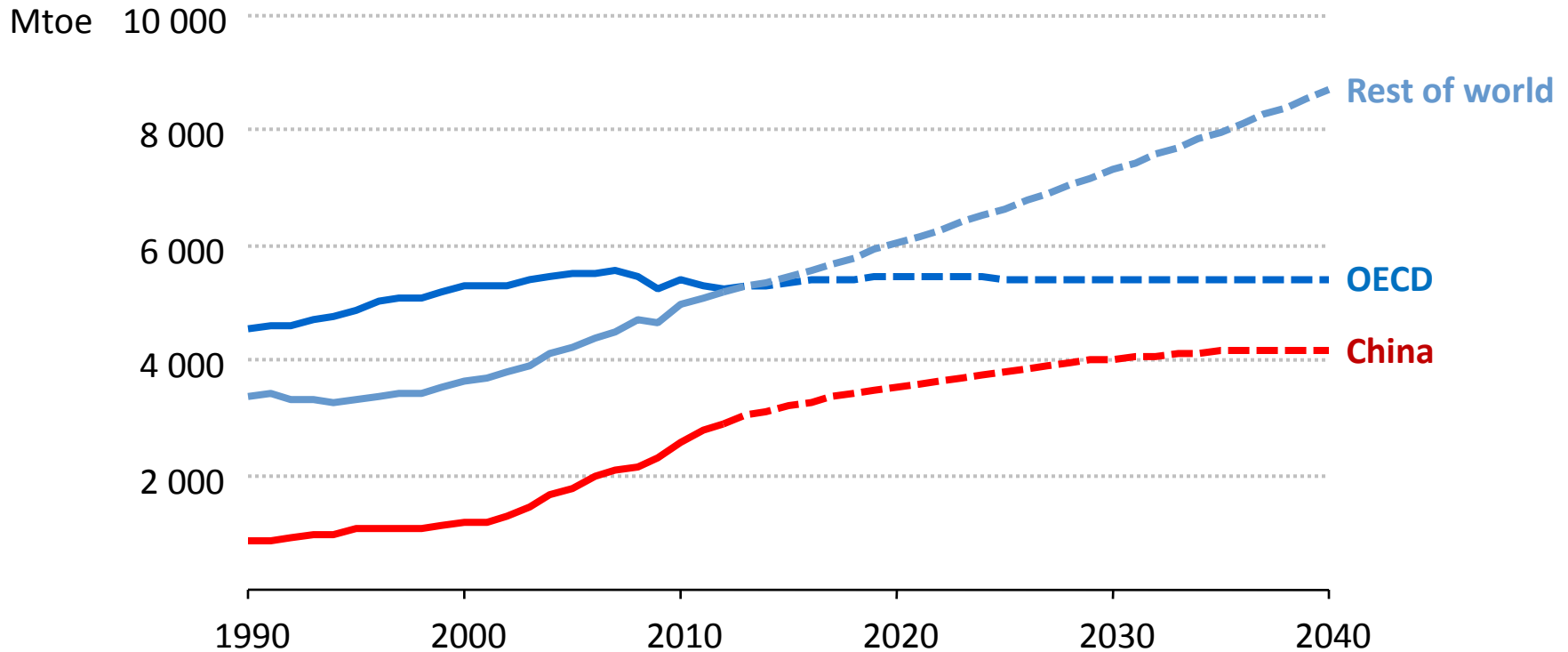
Jakarta, 3 December 2014

Signs of stress in the global energy system

- **Current calm in markets should not disguise difficult road ahead**
 - *Turmoil in the Middle East raises doubts over future oil balance*
 - *Resurgent debate over the security of gas supply to Europe*
- **Mixed signals in run-up to crucial climate summit in Paris in 2015**
 - *Global CO₂ emissions still rising, with most emitters on an upward path*
 - *At \$550 billion, fossil fuel subsidies over four-times those to renewables*
 - *Increasing emphasis on energy efficiency starting to bring results*
- **Will change in global energy be led by policies, or driven by events?**

Changing dynamics of global demand

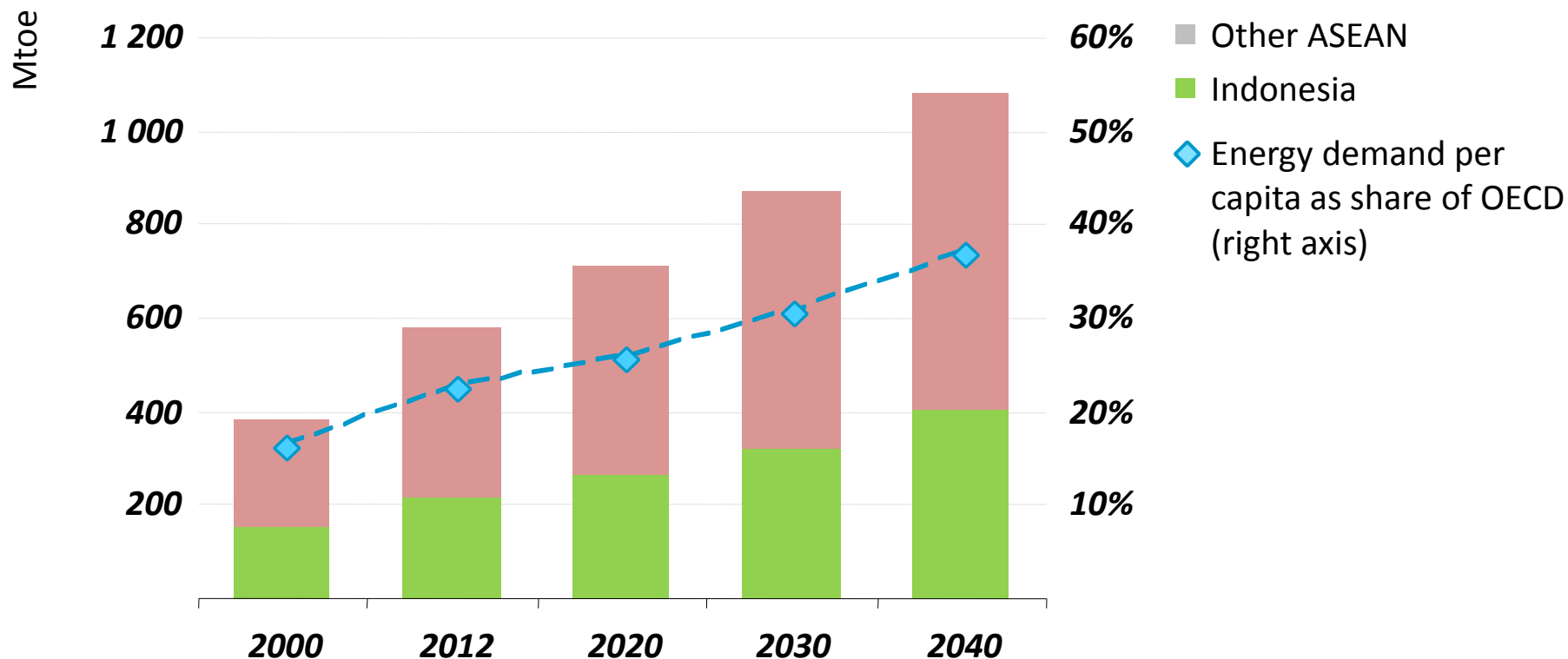
Energy demand by region



As energy demand in China slows in the mid-2020s, other countries in Asia take over as the main engines of global energy demand growth

Southeast Asia's energy needs will continue to grow

Growth in ASEAN primary energy demand

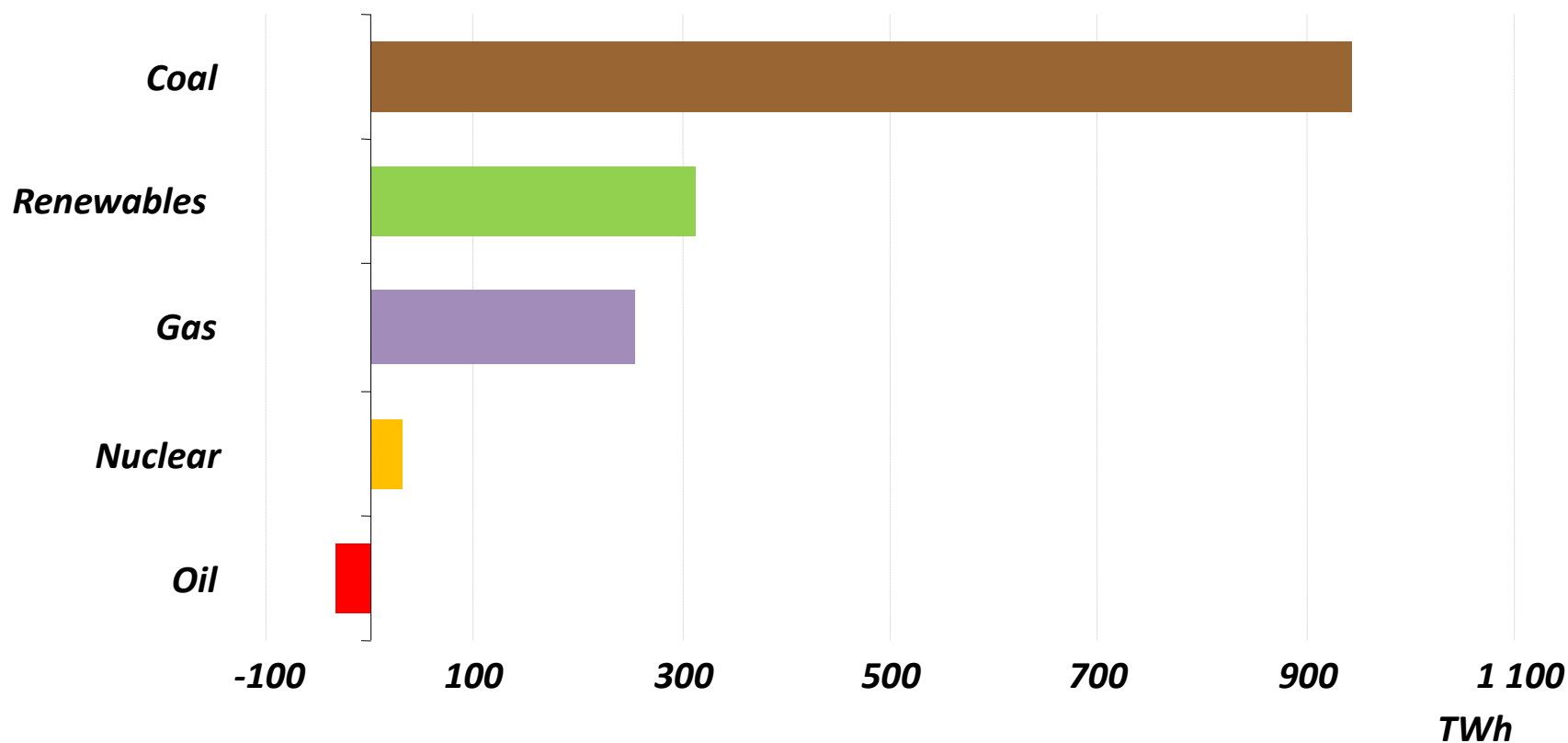


Southeast Asia's energy demand increases by almost 90% in the period to 2040, or by more than the current consumption of Japan

The power sector is fundamental to the energy outlook of Southeast Asia

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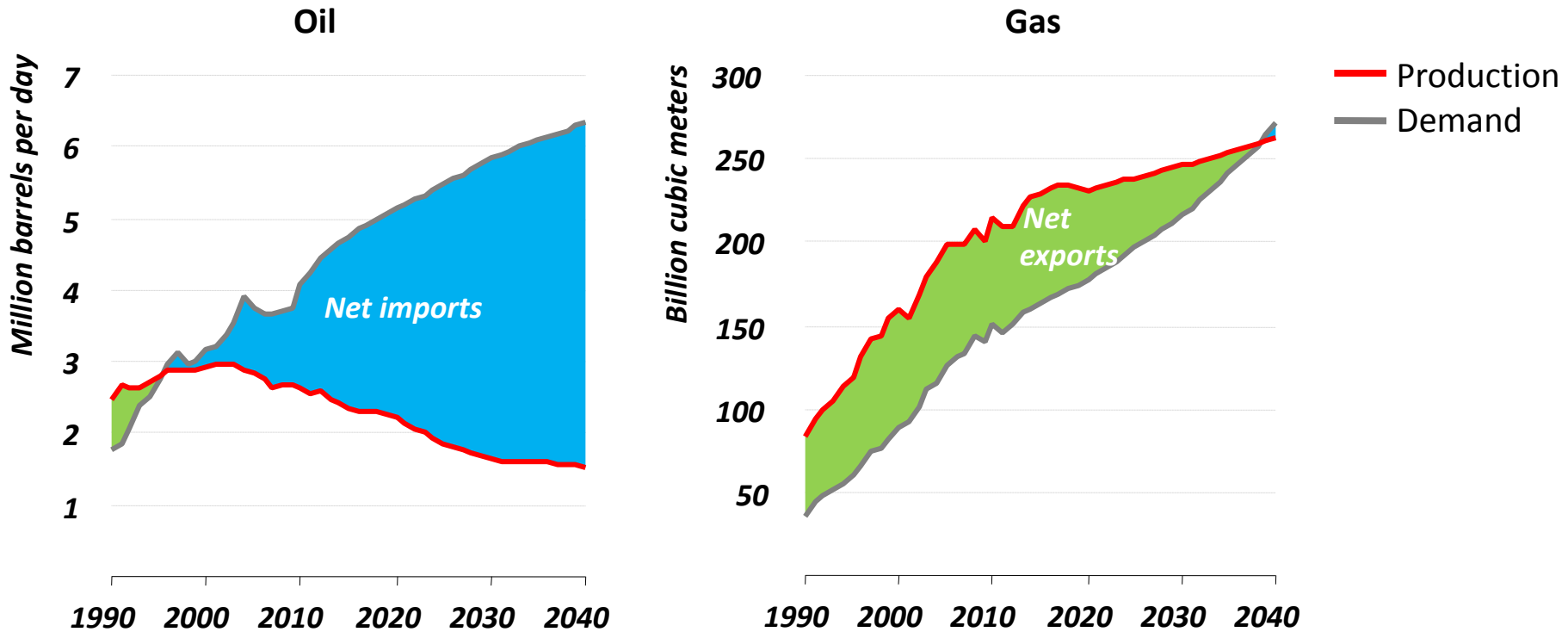
ASEAN incremental electricity generation by fuel, 2012-2040



Southeast Asia's electricity demand triples in the period to 2040; coal emerges as the fuel of choice, accounting for 63% of the growth in generation

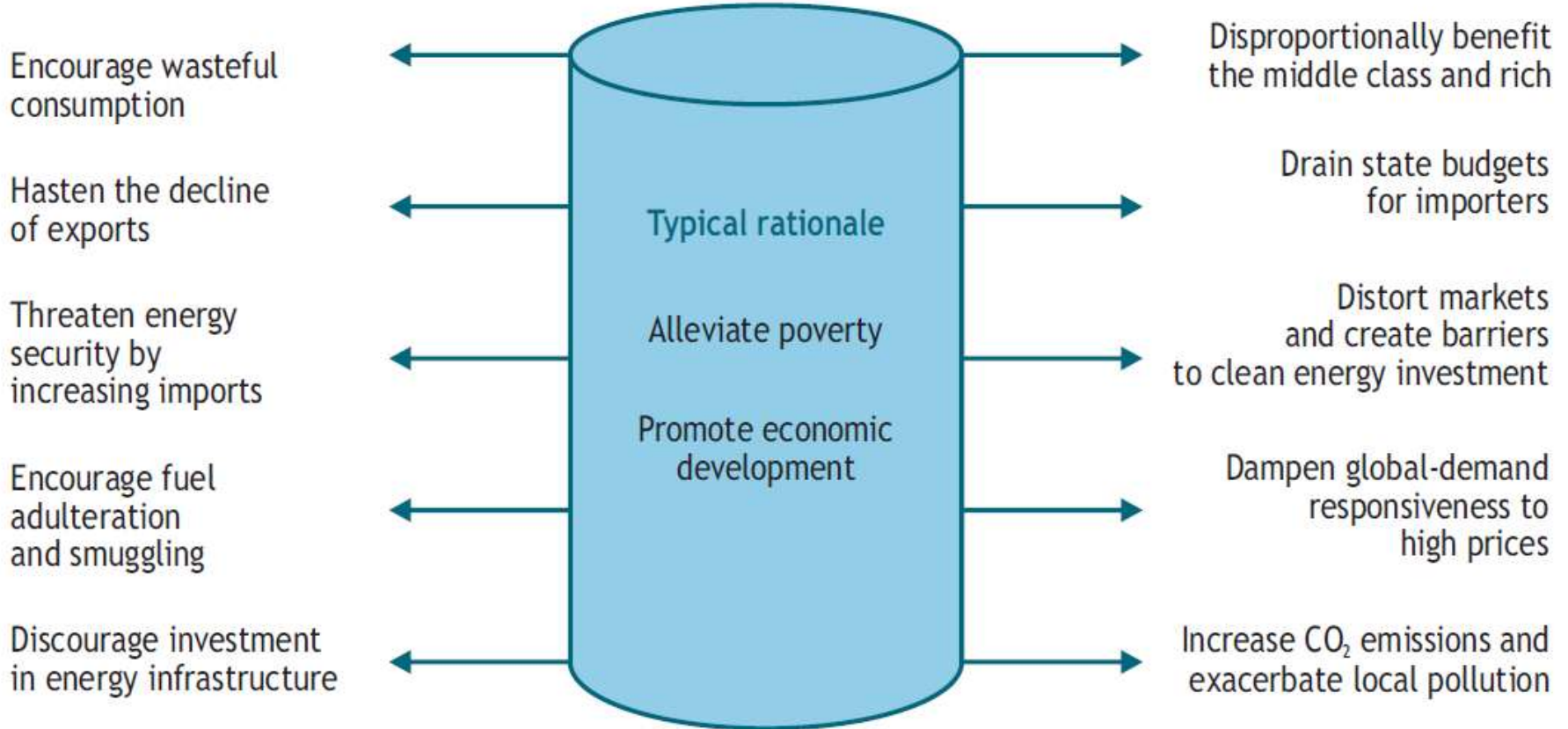
Production: oil in decline & gas struggling to keep up with demand

ASEAN oil and gas balances 1990-2040



Southeast Asia becomes the world's fourth-largest oil importer (behind China, India & the EU) & and a net gas importer towards the end of the period

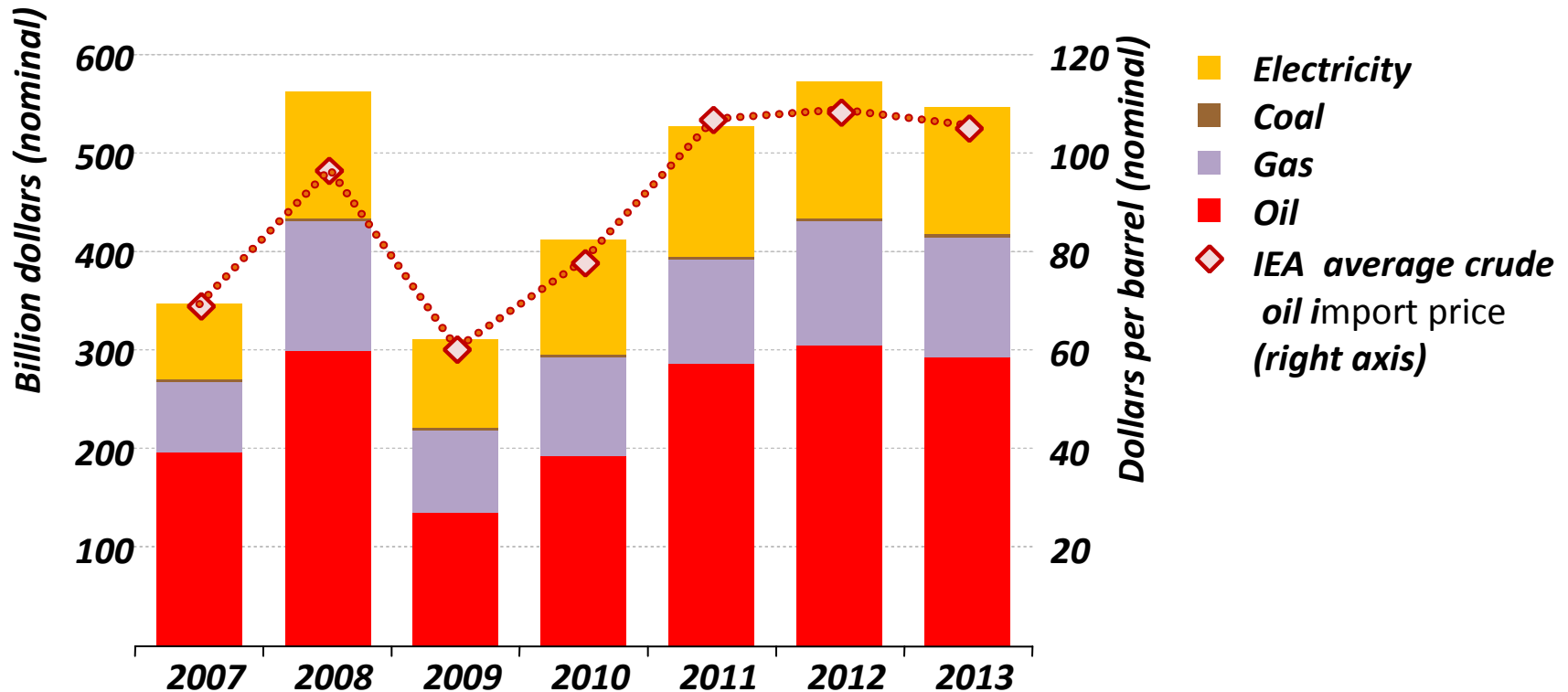
Fossil-fuel subsidies can have unintended effects



Fossil-fuel subsidies result in an economically inefficient allocation of resources and market distortions, while often failing to meet their intended objectives

Fossil-fuel subsidies continue to distort energy markets

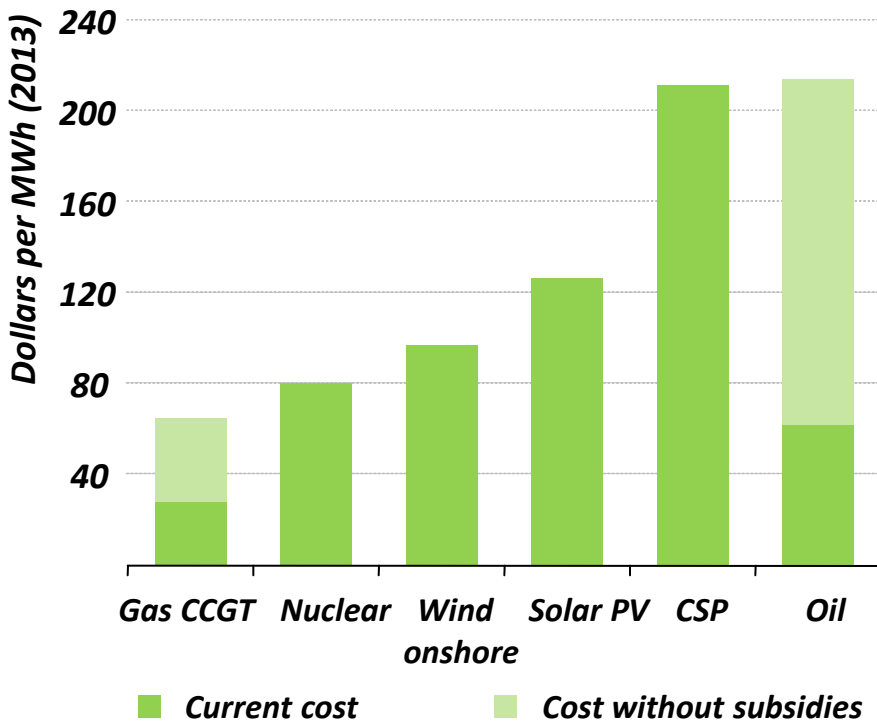
Value of global fossil-fuel subsidies, 2007-2013



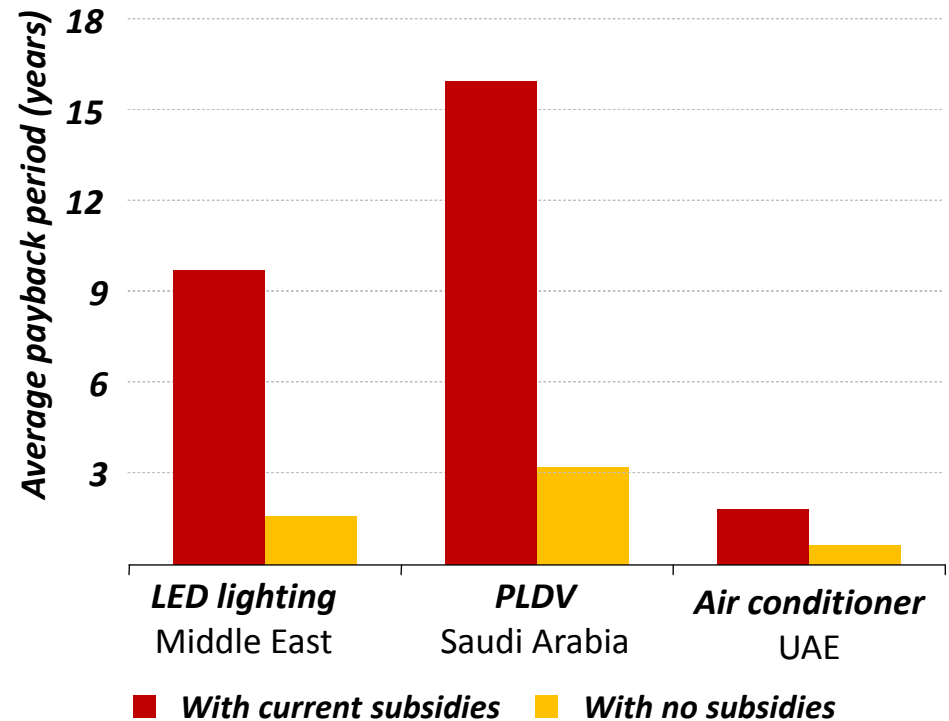
Globally, fossil-fuel subsidies amounted to \$548 billion in 2013 – a slight reduction on 2012 linked to policy reforms; In Southeast Asia, they totaled \$40 billion

Fossil fuel subsidies undermine clean energy investment

Electricity generating cost In the Middle East



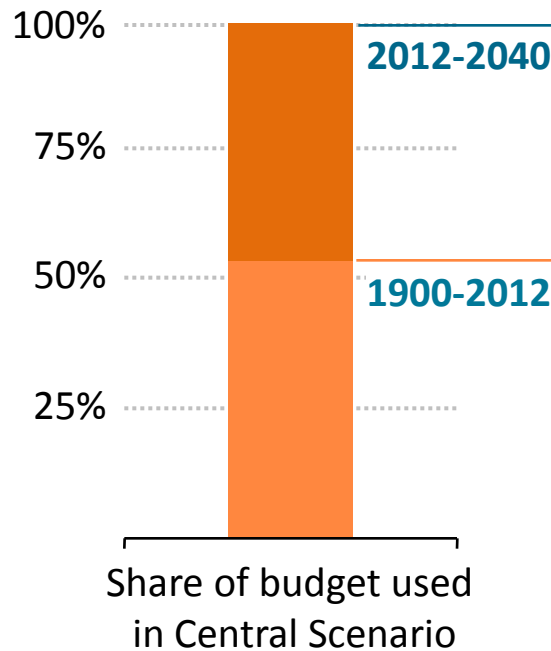
Payback period to invest in more energy efficient technologies



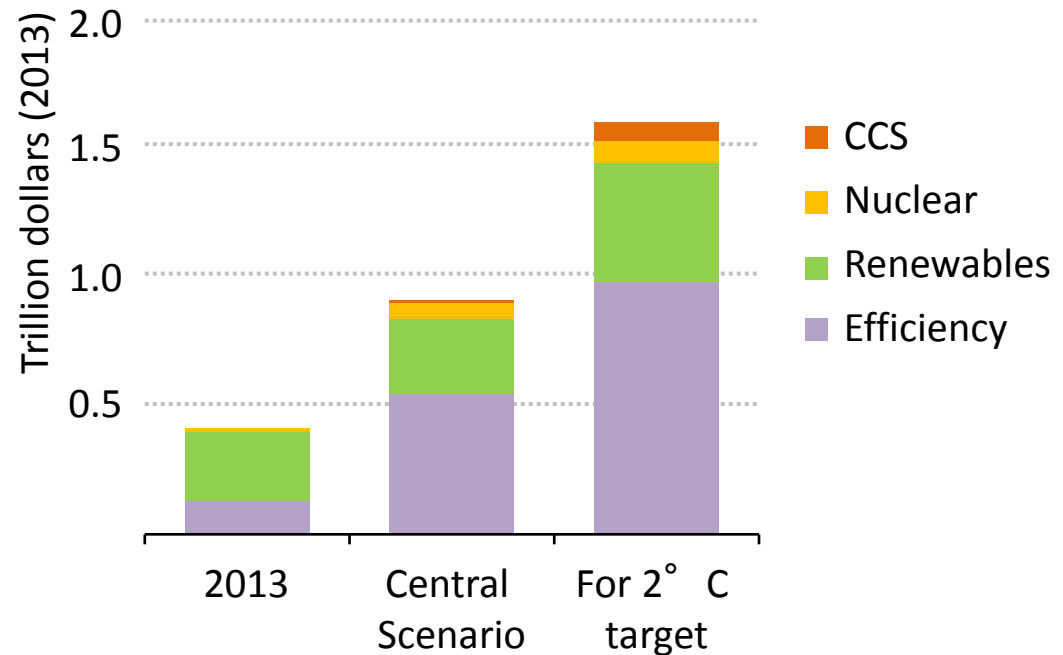
In the Middle East, low carbon energy technologies fail to compete with oil and gas power plants due to subsidies & the case for energy efficiency investments is reduced

The 2 °C goal – last chance in Paris?

World CO₂ budget for 2 °C
~2300 Gt



Average annual low-carbon investment, 2014-2040



The entire global CO₂ budget to 2100 is used up by 2040 – Paris must send a strong signal for increasing low-carbon investment four times beyond current levels

Southeast Asia: an emerging giant of the global energy market

- **Southeast Asia – along with China & India – is shifting the centre of gravity of the global energy system to Asia**
- **Southeast Asia's outlook for energy production & demand has implications that will be felt well beyond the region**
- **Developing policies to improve efficiency & attract investment will be vital for enhancing energy security, affordability & sustainability**
- **The region faces global challenges, underscoring the need to enhance cooperation intra-regionally & with international partners**