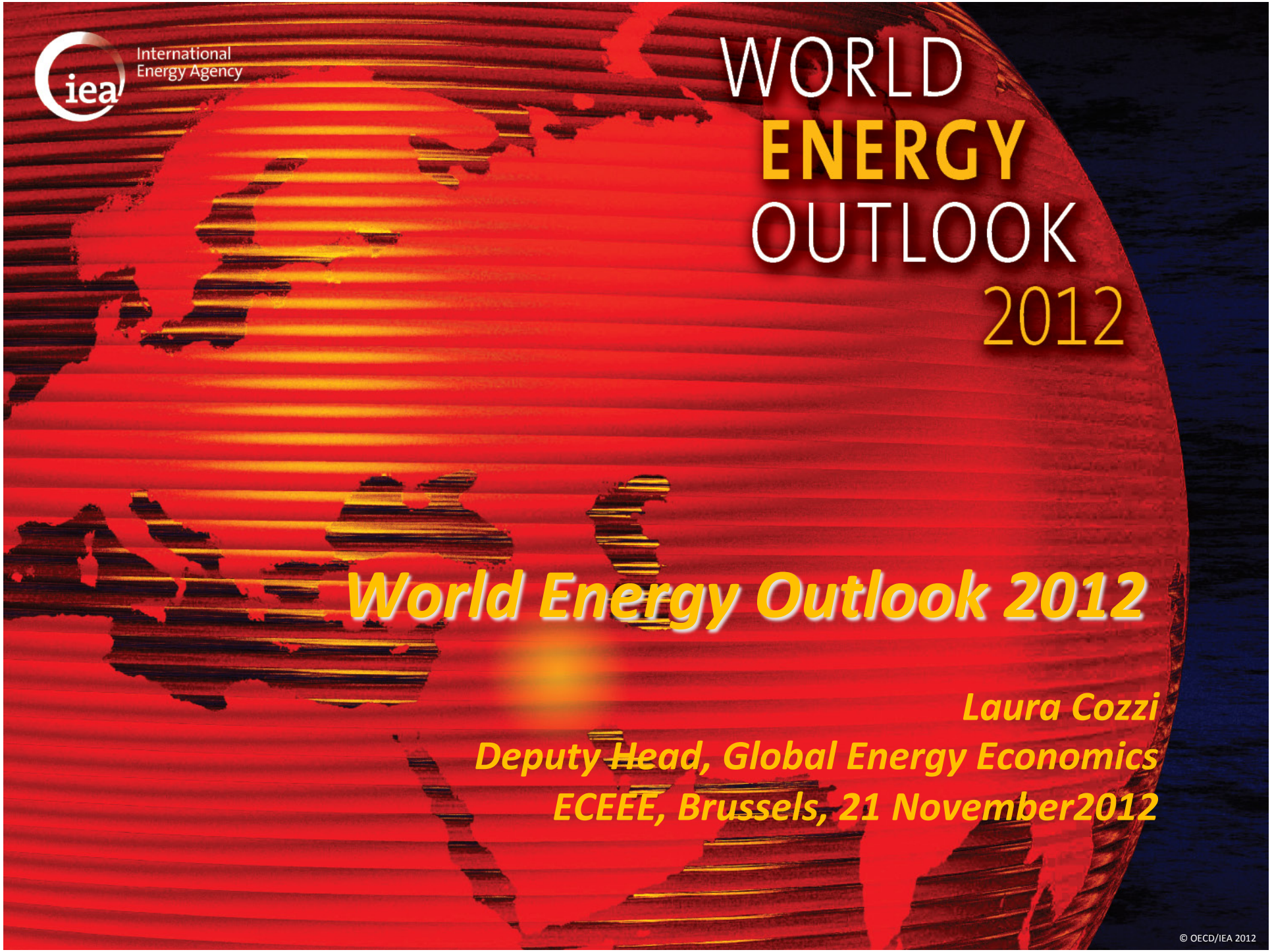
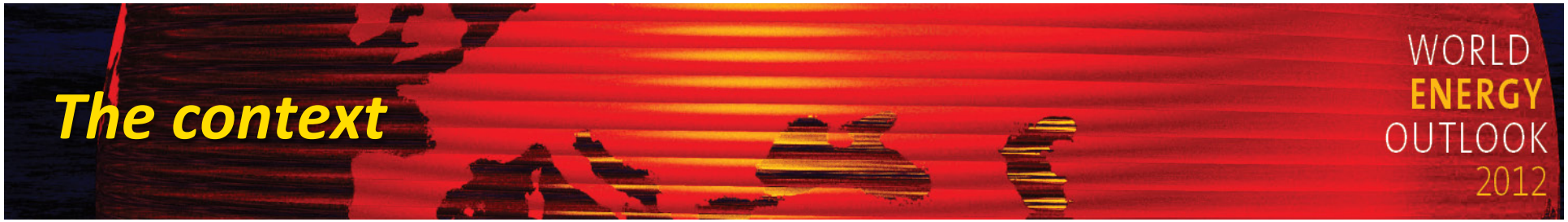

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Laura Cozzi
Deputy Head, Global Energy Economics
ECEEE, Brussels, 21 November2012
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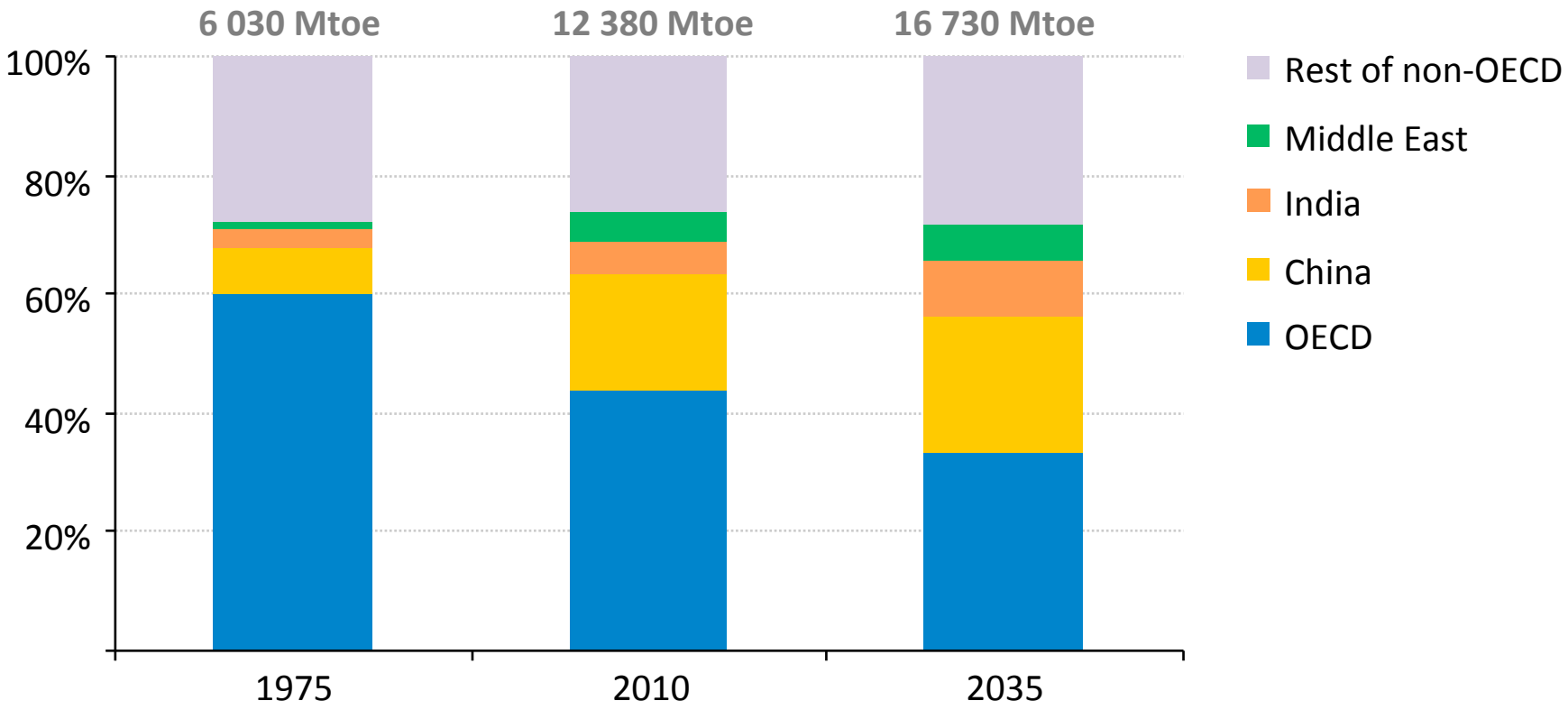
- **Foundations of global energy system shifting**
  - *Resurgence in oil & gas production in some countries*
  - *Retreat from nuclear in some others*
  - *Signs of increasing policy focus on energy efficiency*
- **All-time high oil prices acting as brake on global economy**
  - *Divergence in natural gas prices affecting Europe (with prices 5-times US levels) and Asia (8-times)*
- **Symptoms of an unsustainable energy system persist**
  - *Fossil fuel subsidies up almost 30% to $523 billion in 2011, led by MENA*
  - *CO_2 emissions at record high, while renewables industry under strain*
  - *Despite new international efforts, 1.3 billion people still lack electricity*
  - *Water increasingly crucial for assessing the viability of energy projects*

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Emerging economies steer energy markets

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Share of global energy demand



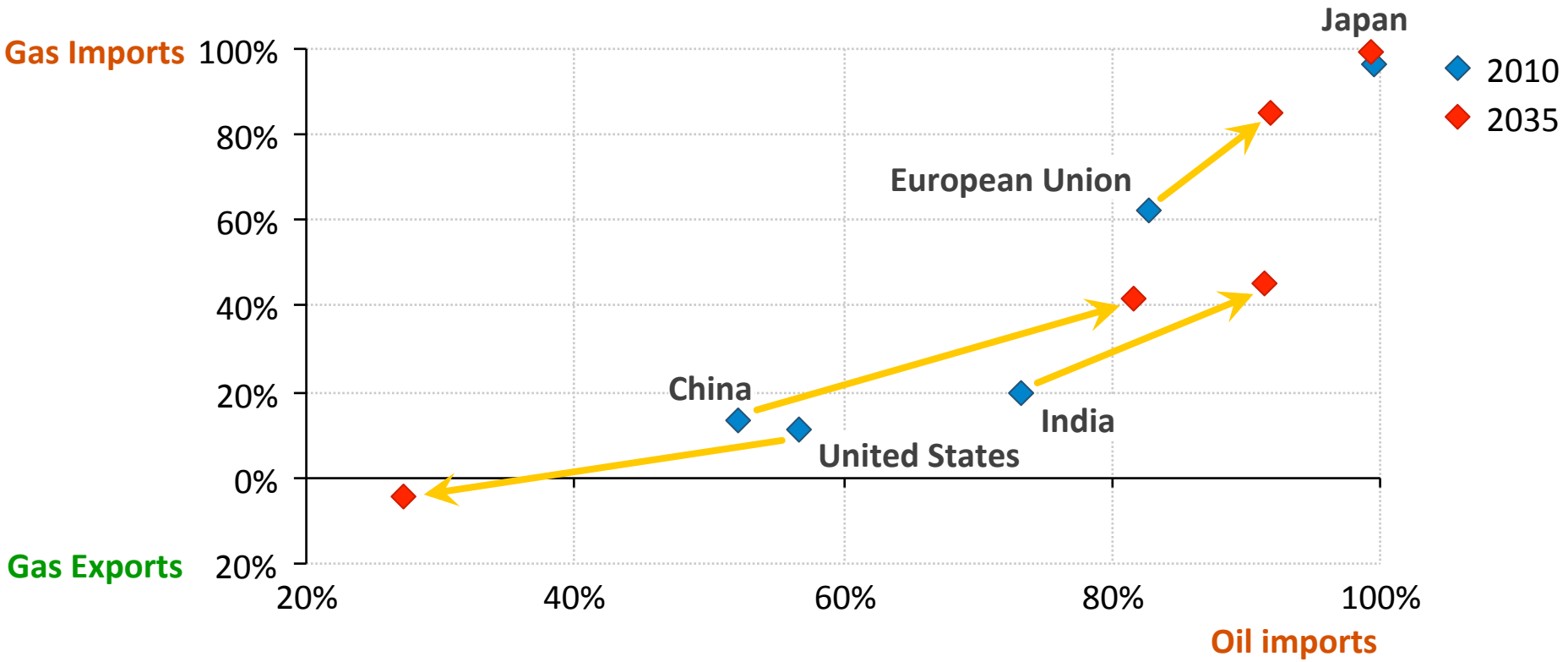
Global energy demand rises by over one-third in the period to 2035, underpinned by rising living standards in China, India & the Middle East

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Different trends in oil & gas import dependency

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Net oil & gas import dependency in selected countries



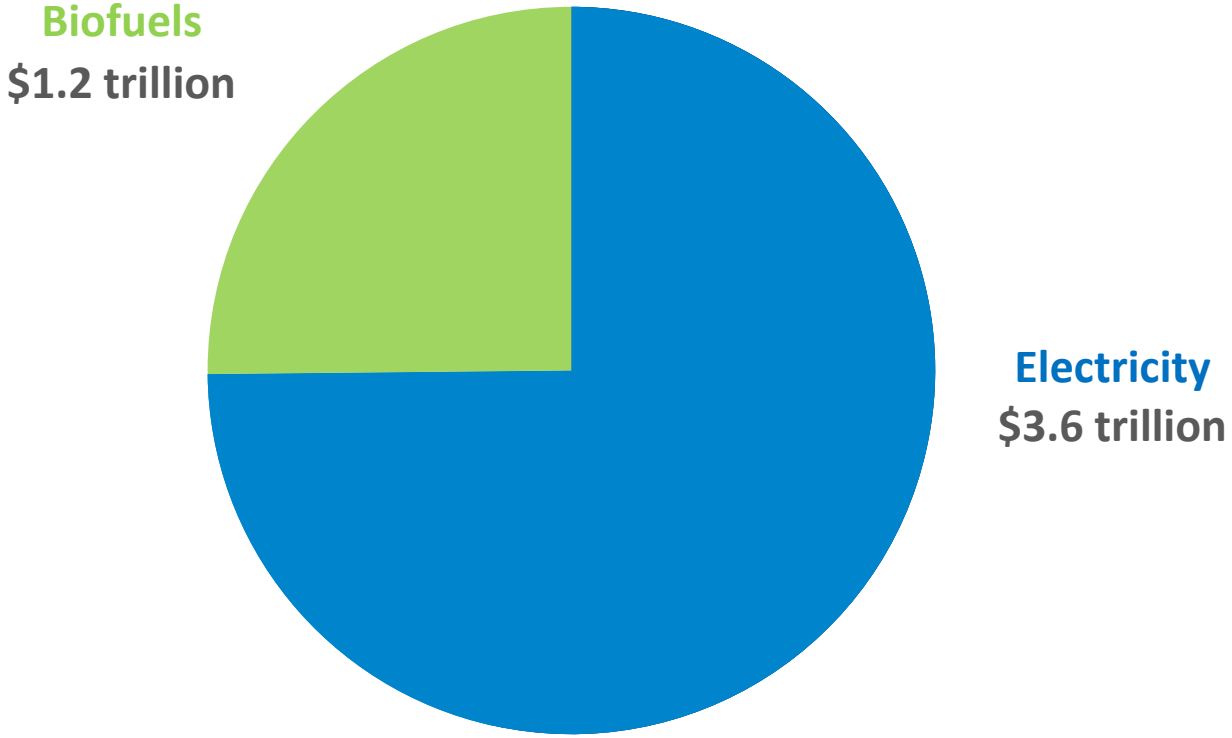
While dependence on imported oil & gas rises in many countries, the United States swims against the tide

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The multiple benefits of renewables come at a cost

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Global renewable energy subsidies of $4.8 trillion, 2011-2035



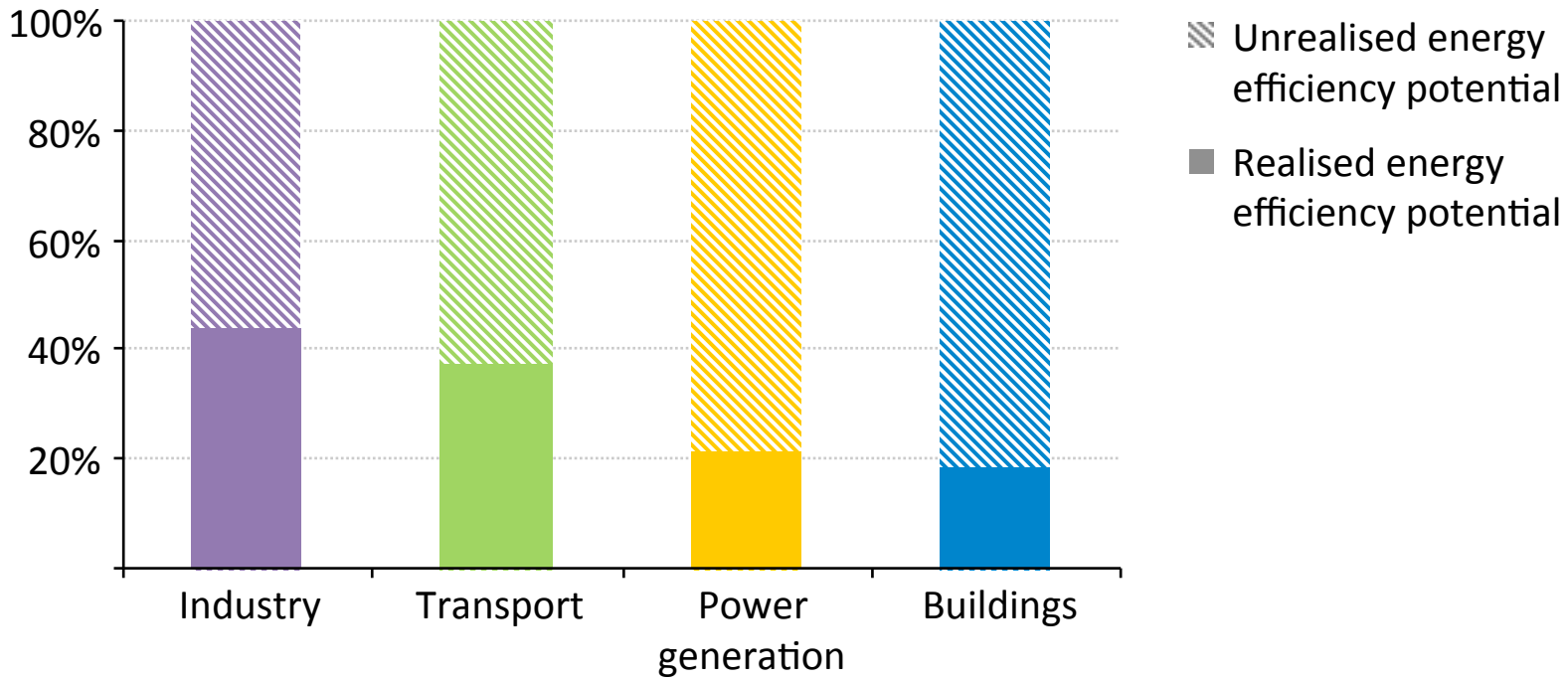
Renewable subsidies were $88 billion in 2011; over half the subsidies required to 2035 has been committed to existing projects or is needed to meet 2020 targets

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Energy efficiency: a huge opportunity going unrealised

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Energy efficiency potential used by sector in the New Policies Scenario



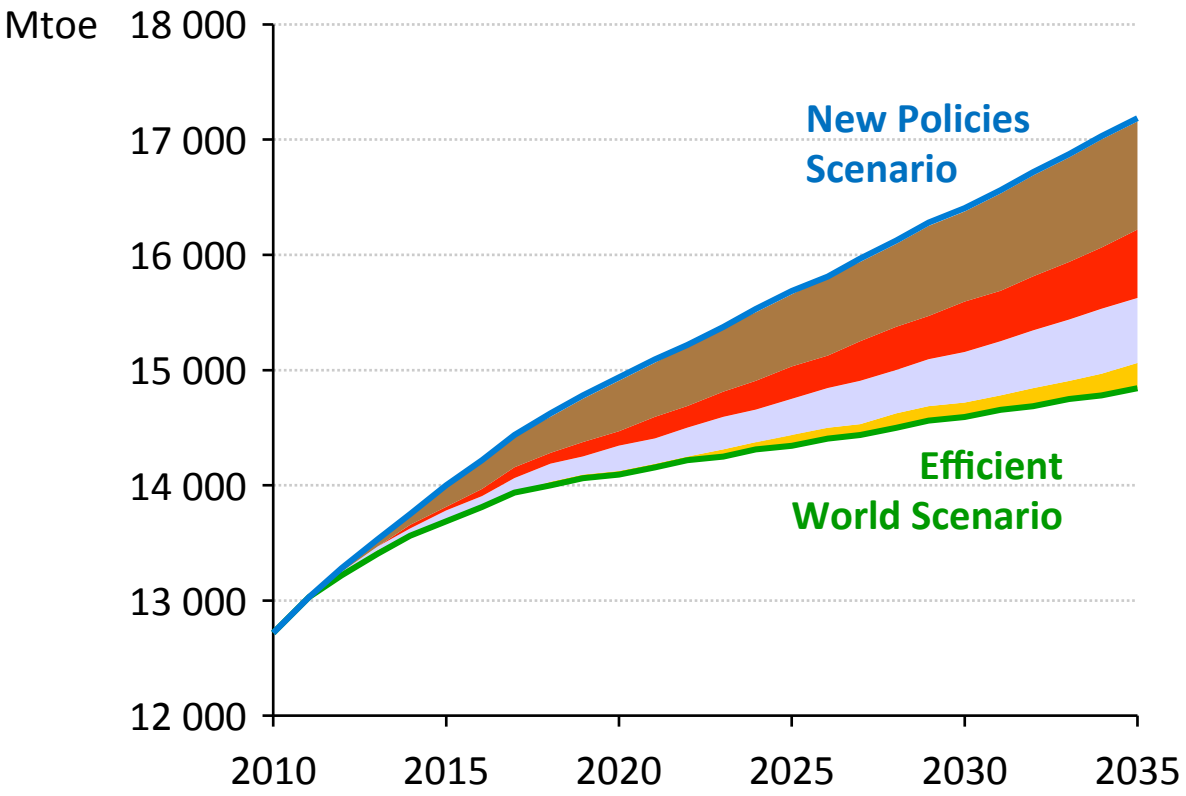
Two-thirds of the economic potential to improve energy efficiency remains untapped in the period to 2035

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The Efficient World Scenario: a blueprint for an efficient world

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Total primary energy demand



Reduction in 2035		
Coal	1 350	Mtce
Oil	12.7	mb/d
Gas	680	bcm
Others	250	Mtoe

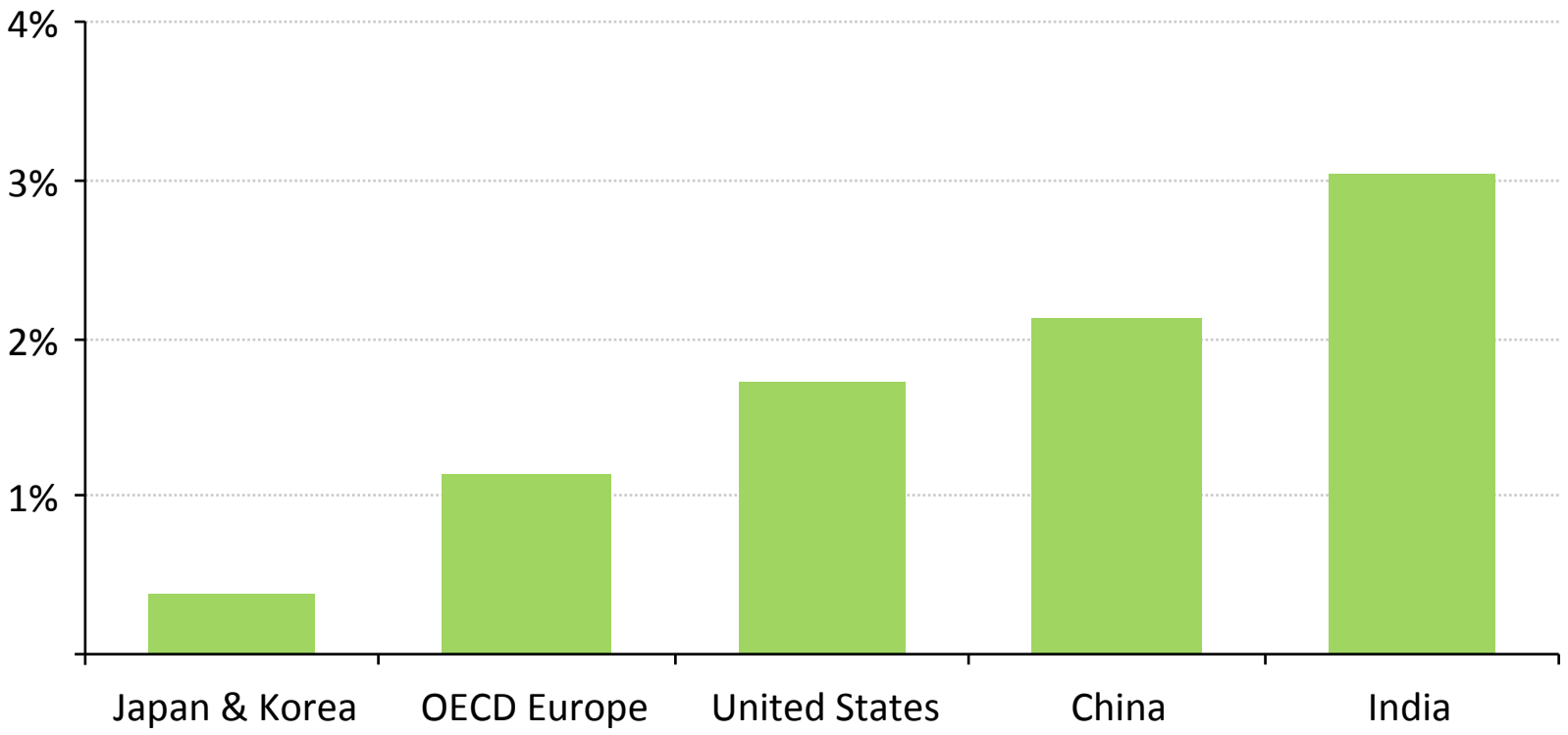
Economically viable efficiency measures can halve energy demand growth to 2035; oil prices are $15 per barrel lower by 2035 due to oil demand savings

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Energy efficiency can help drive economic prosperity

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GDP in Efficient World Scenario versus New Policies Scenario, 2035

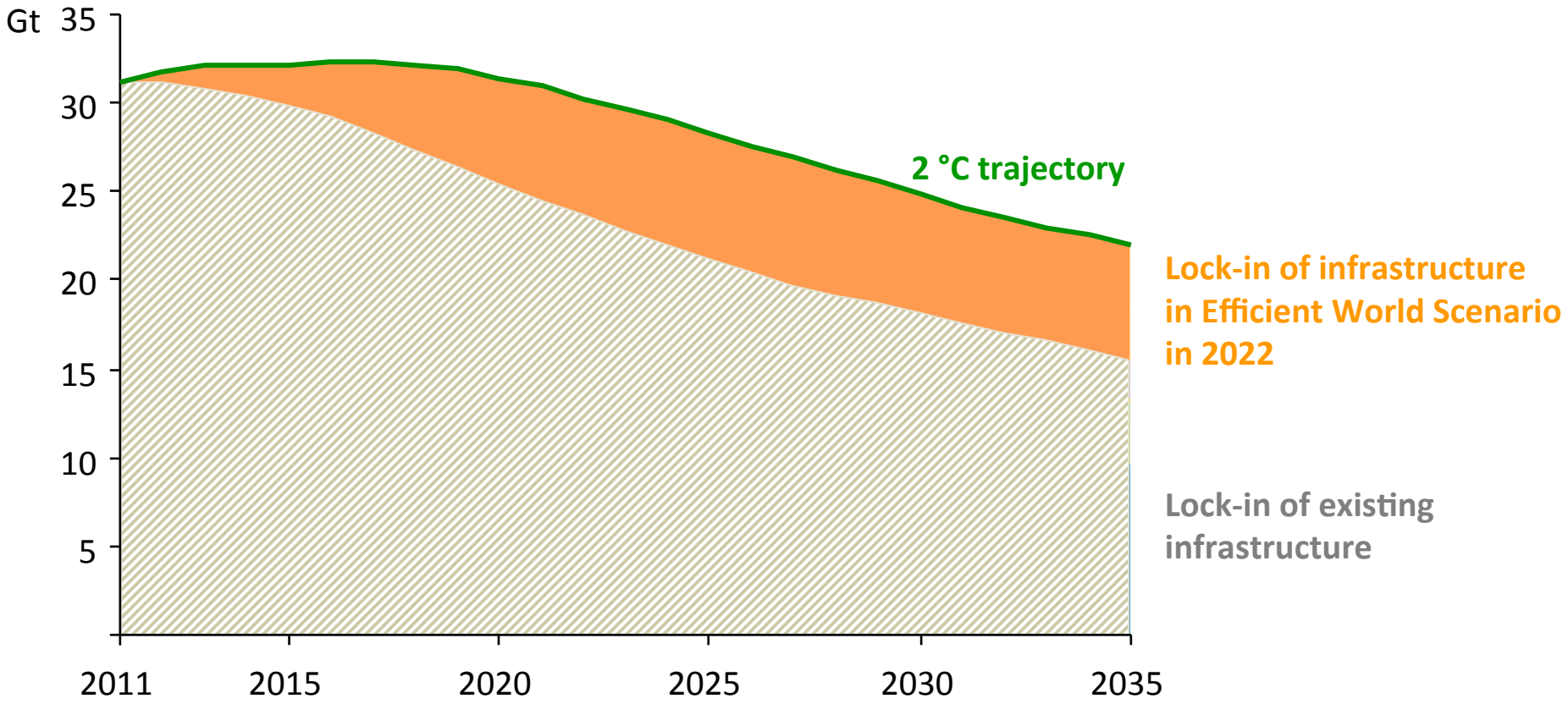


Cumulative investments in energy efficiency of $12 trillion are more than offset by fuel savings & trigger economic growth of a cumulative $18 trillion

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The Efficient World Scenario delays carbon lock-in

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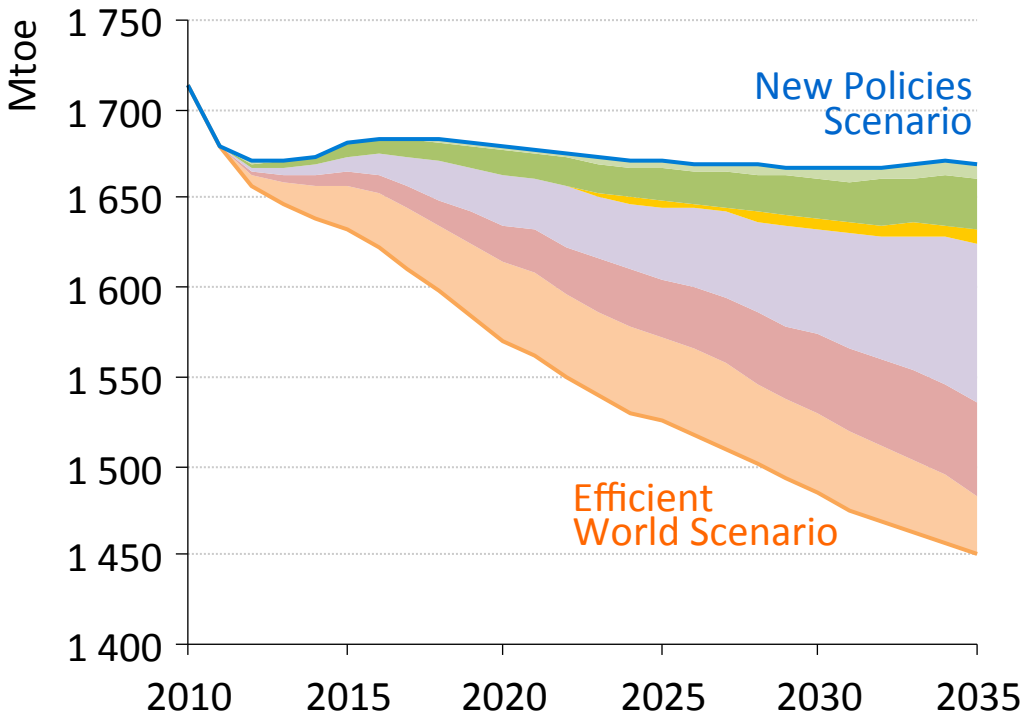


Energy efficiency can delay "lock-in" of CO_2 emissions permitted under a 2 °C trajectory – which is set to happen in 2017 – until 2022, buying five extra years

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EU energy demand pushing energy efficiency

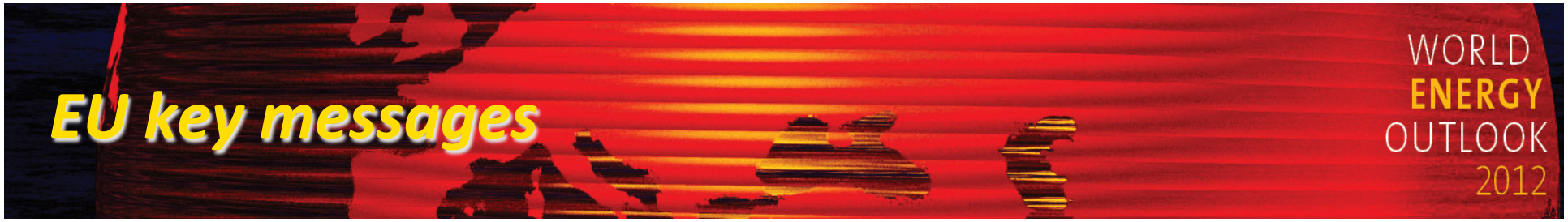
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EWS total primary energy demand	Mtoe 2010	2035
Other renewables	22	110
Bioenergy	130	203
Hydro	31	35
Nuclear	239	207
Gas	441	418
Oil	569	364
Coal	281	113

Energy efficiency can put European demand on a downward trend, with important implications for natural gas demand and imports

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- Energy efficiency can cut energy demand in 2035 by 15% compared with 2010
- The buildings sector accounts for half of those savings
- Additional investments in efficiency are $2.2 trillion over 2012-2035, this saves consumers $4.9 trillion
- Energy import bills would grow from $402 billion in 2010 to $455 billion in 2035, a cut of $171 billion vs New Policies Scenario
- CO_2 emissions would decline to 2.3 Gt in 2035 compared with 3.6 Gt in 2010

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Making energy efficiency a reality

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- **Good governance**
  - *Government leadership, effective co-ordination & administrative capacity*
- **Consumer priority**
  - *Increase visibility of efficiency and its economic gains*
- **Affordability**
  - *Availability of financing instruments & subsidies removal*
- **Make it the norm**
  - *Introduce, monitor and enforce standards that will embed efficiency*

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