

Executive Roundtable on Energy Markets and Integration

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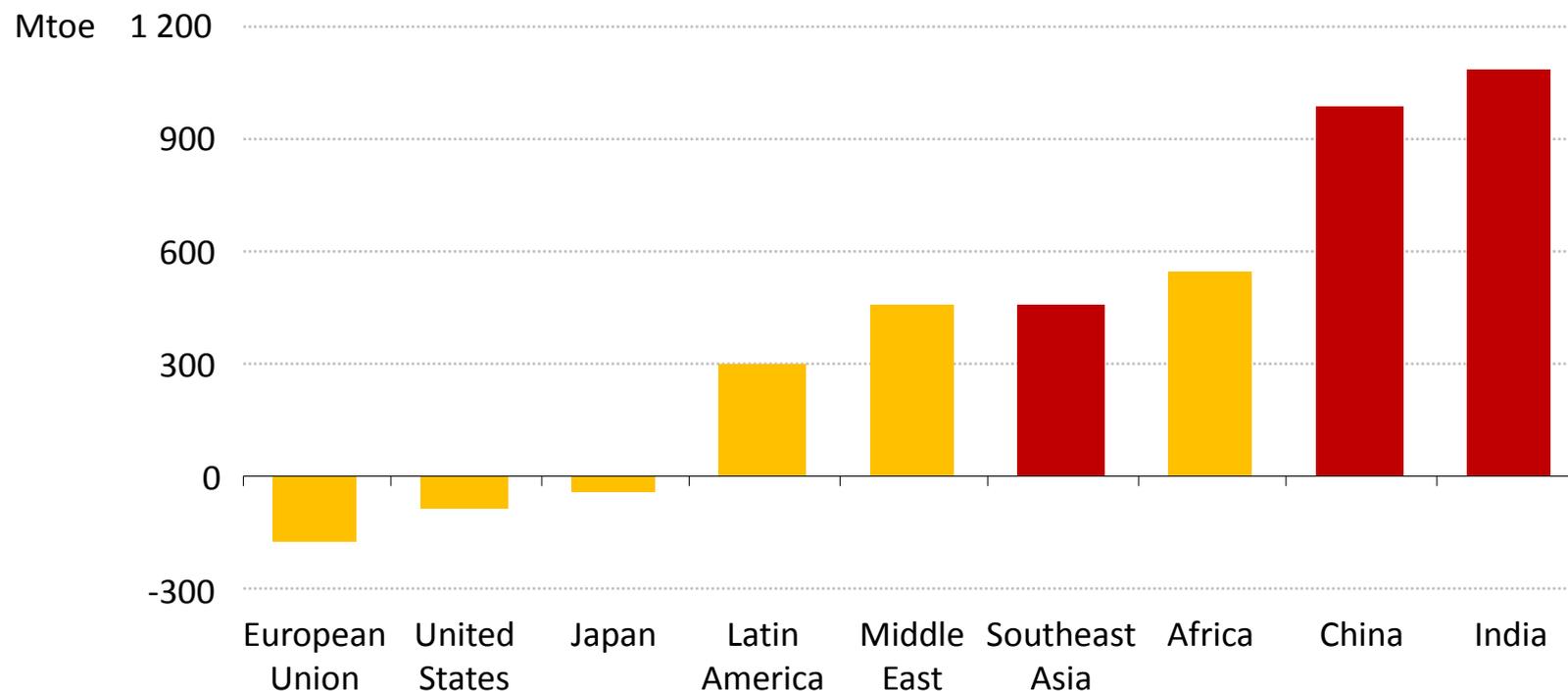
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Jakarta, 18 July

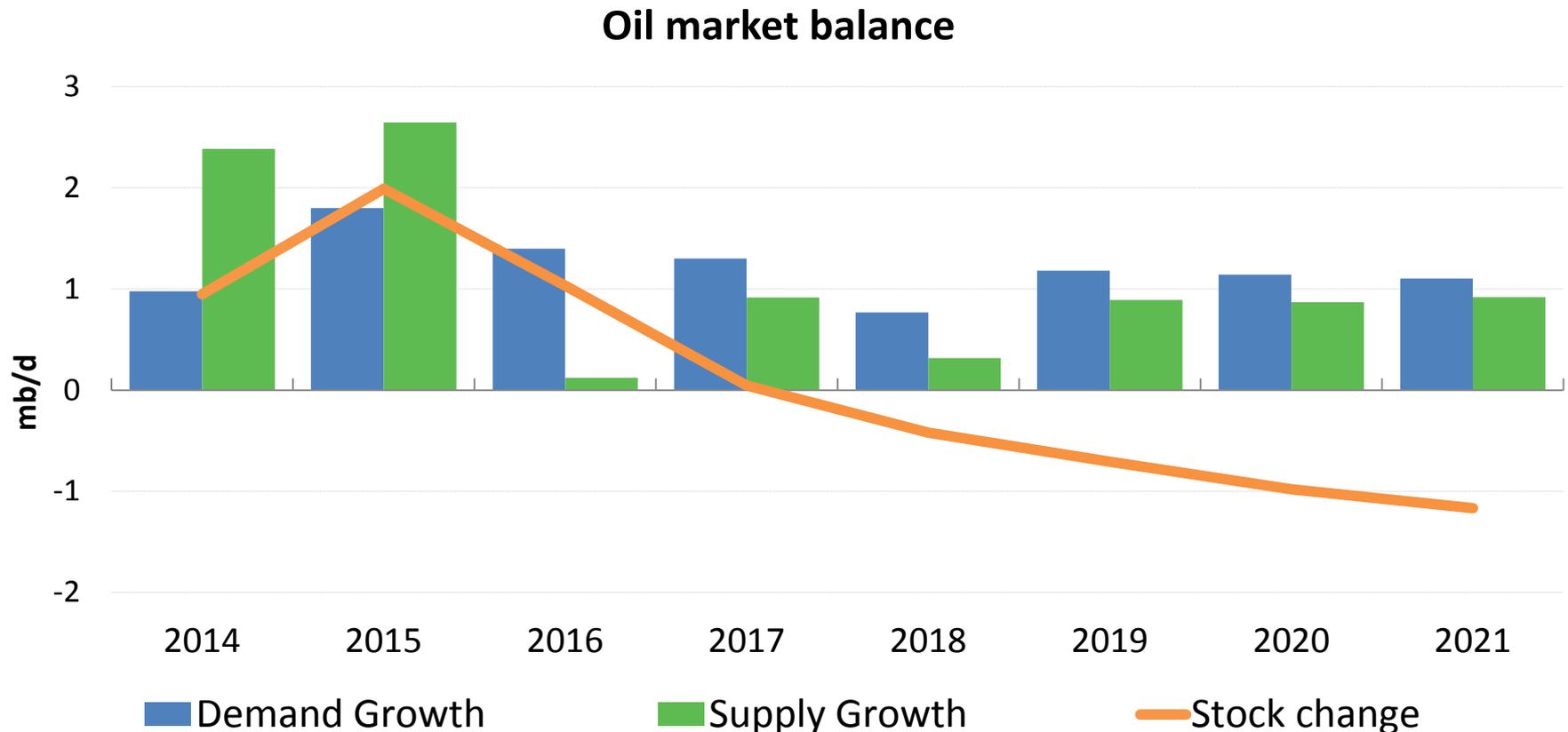
Demand growth in Asia

Change in energy demand in selected regions, 2014-2040



Energy use worldwide grows by one third to 2040, driven by Asia

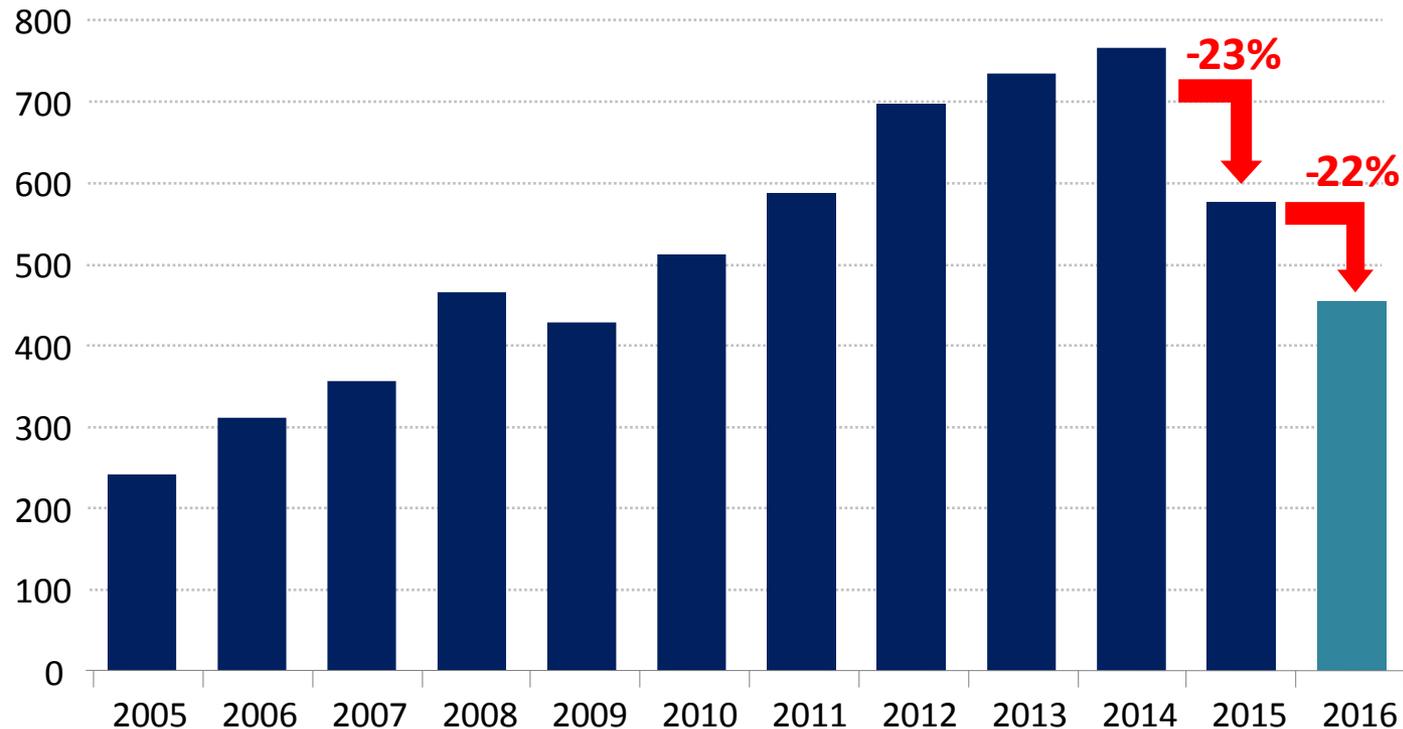
Oil markets are gradually returning to balance as low prices take their toll



In 2016 non-OPEC supply set to drop by over 900k barrels per day, the largest fall since 1992, helping to push the oil market towards balance

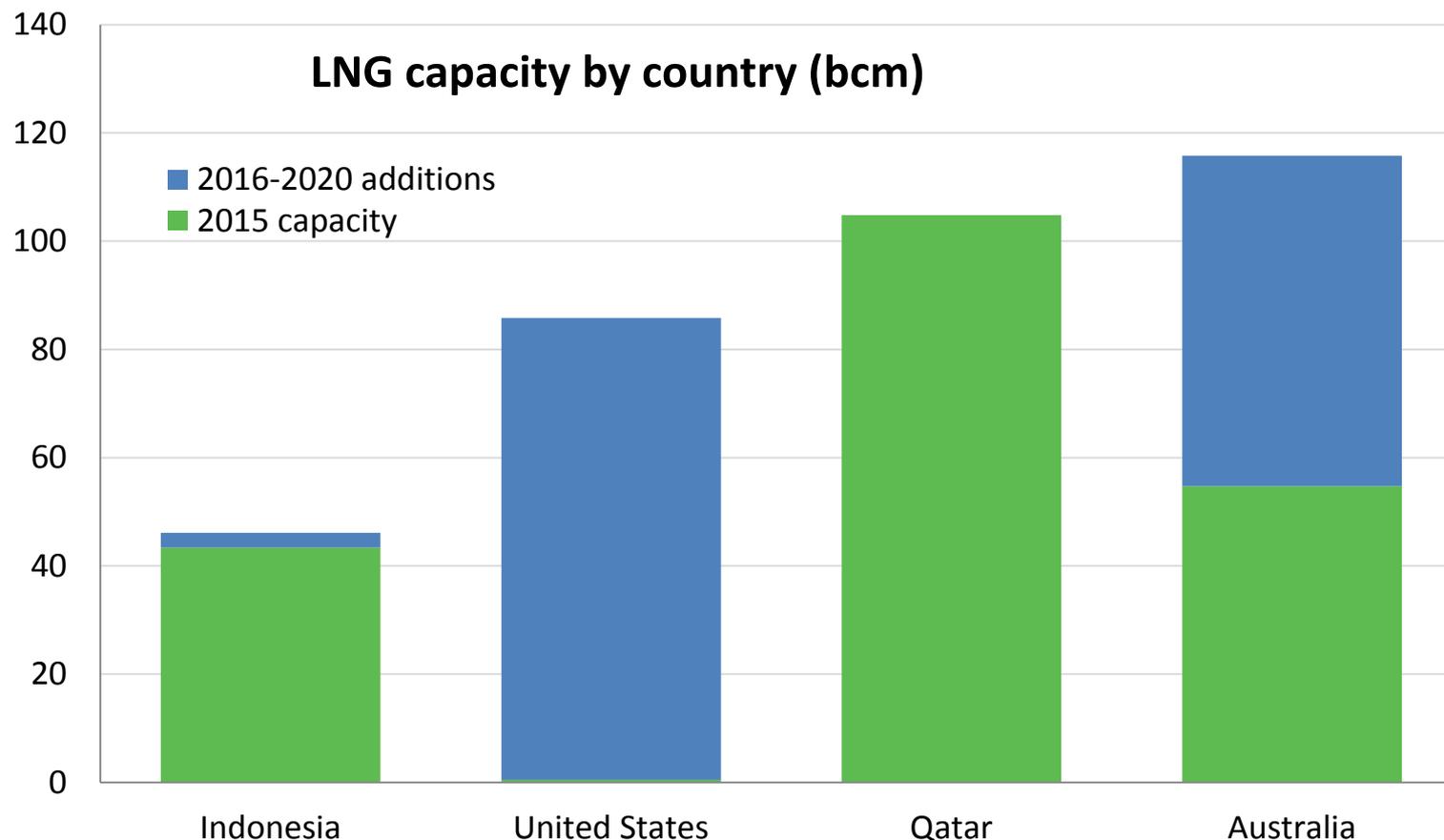
Upstream oil and gas investment continues to fall

Upstream oil and gas investment



Upstream oil & gas investment continues to fall, particularly in high-cost regions; this raises the prospect of price volatility & greater reliance on the Middle East in future

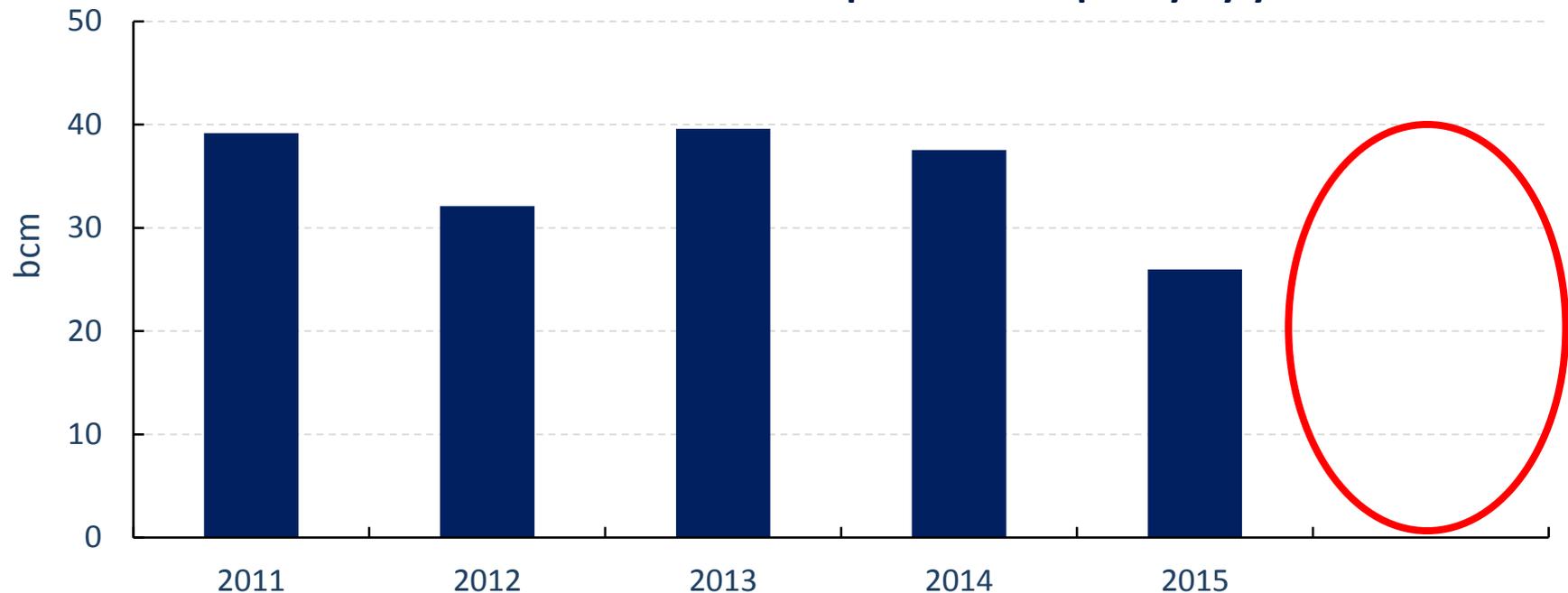
Large LNG capacity additions on the way



Australia and the US accounts for 90% of new capacity additions by 2020

Investment in new LNG export capacity has ground to a halt

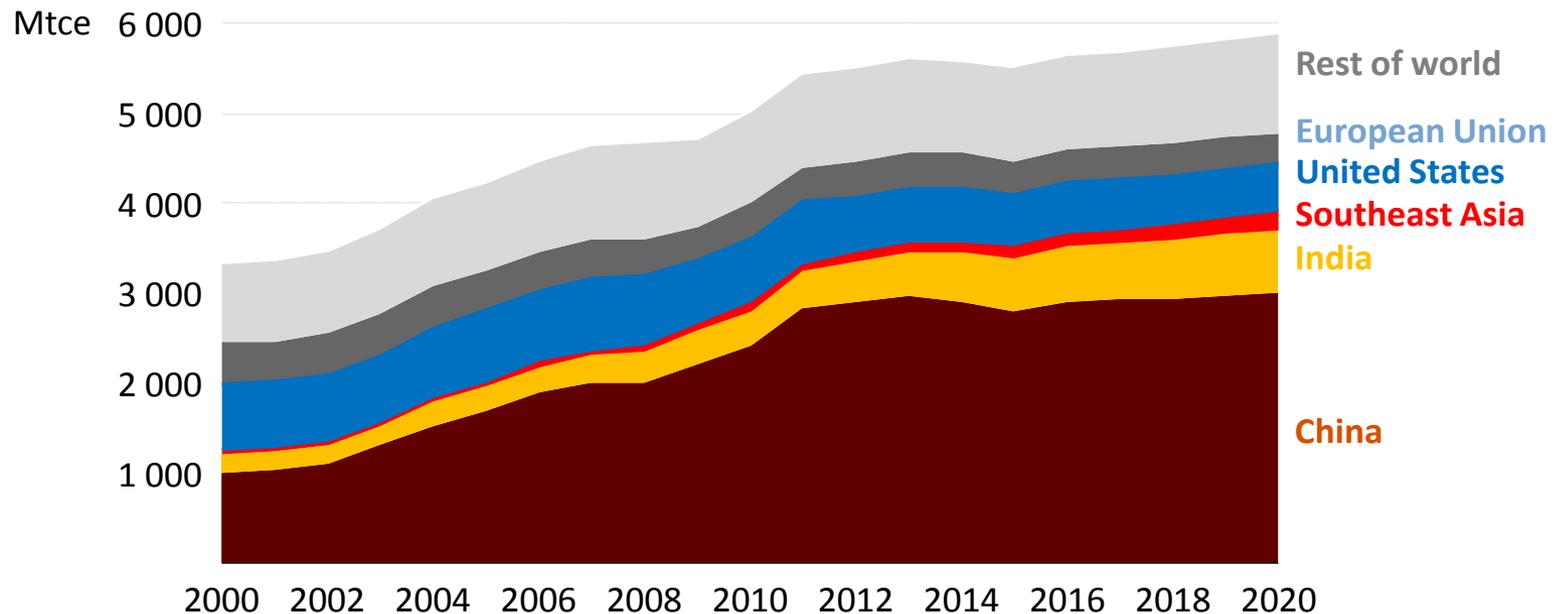
Final investment decisions in liquefaction capacity by year



The collapse in investment increases the risk of tighter markets in the next decade; concerns about gas supply security could quickly re-emerge

There is no “second” China waiting to drive global coal use

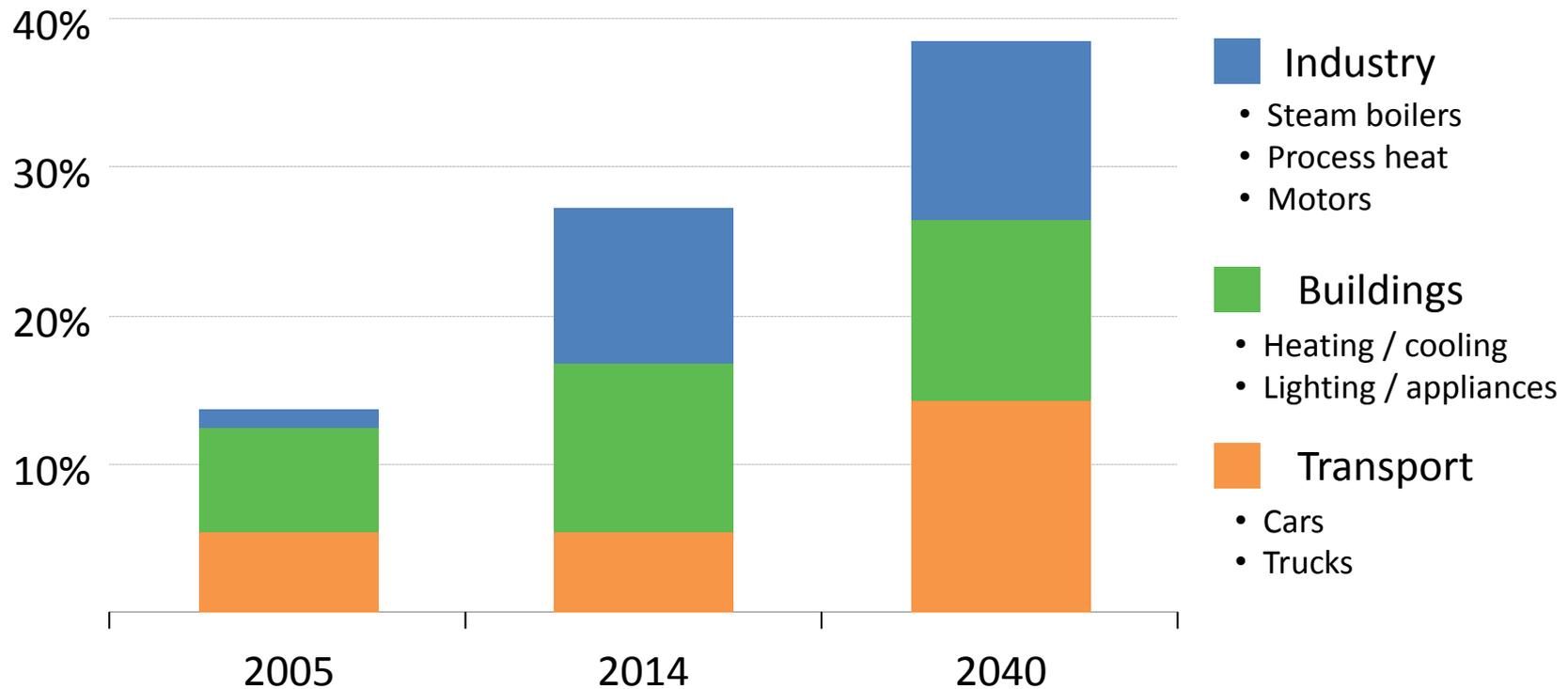
Global coal demand by region (historical and forecast)



Strong growth in coal use in India & Southeast Asia offset declines in the EU & the US, but does not match the rise seen over last decade in China

Action on energy efficiency must begin to match its potential

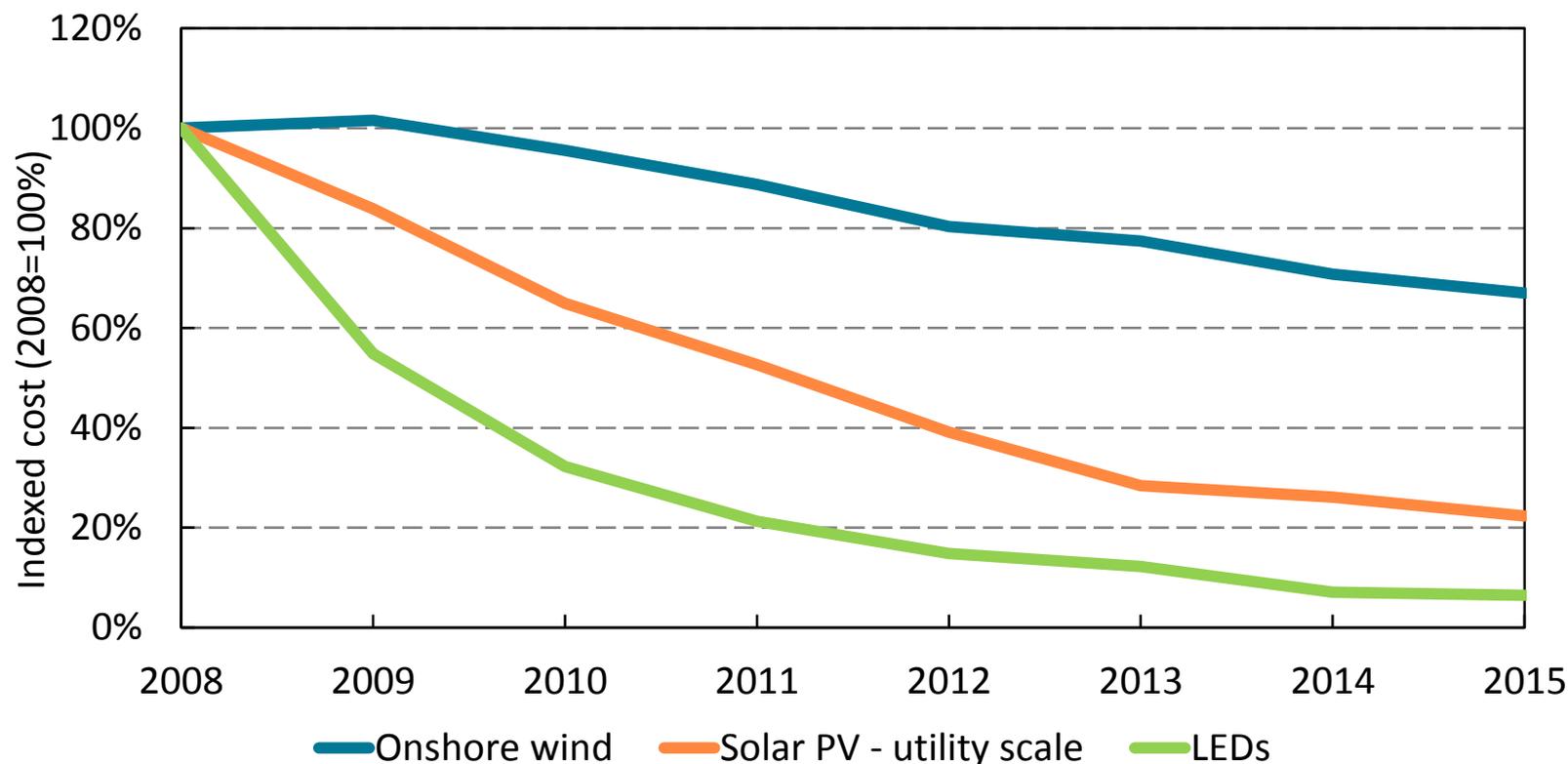
Share of energy consumption covered by mandatory efficiency regulations



Energy efficiency policies are being introduced in more countries and sectors; they continue to slow demand growth, but more can be done

The cost of clean energy continues to fall

Indexed cost of onshore wind, utility scale PV and LED lighting



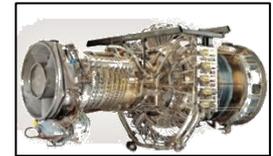
The falling cost of clean energies opens new opportunities but appropriate market design and regulatory frameworks remain critically important

Integration of variable renewables into power grids is becoming a key challenge

Grids



Generation



Storage



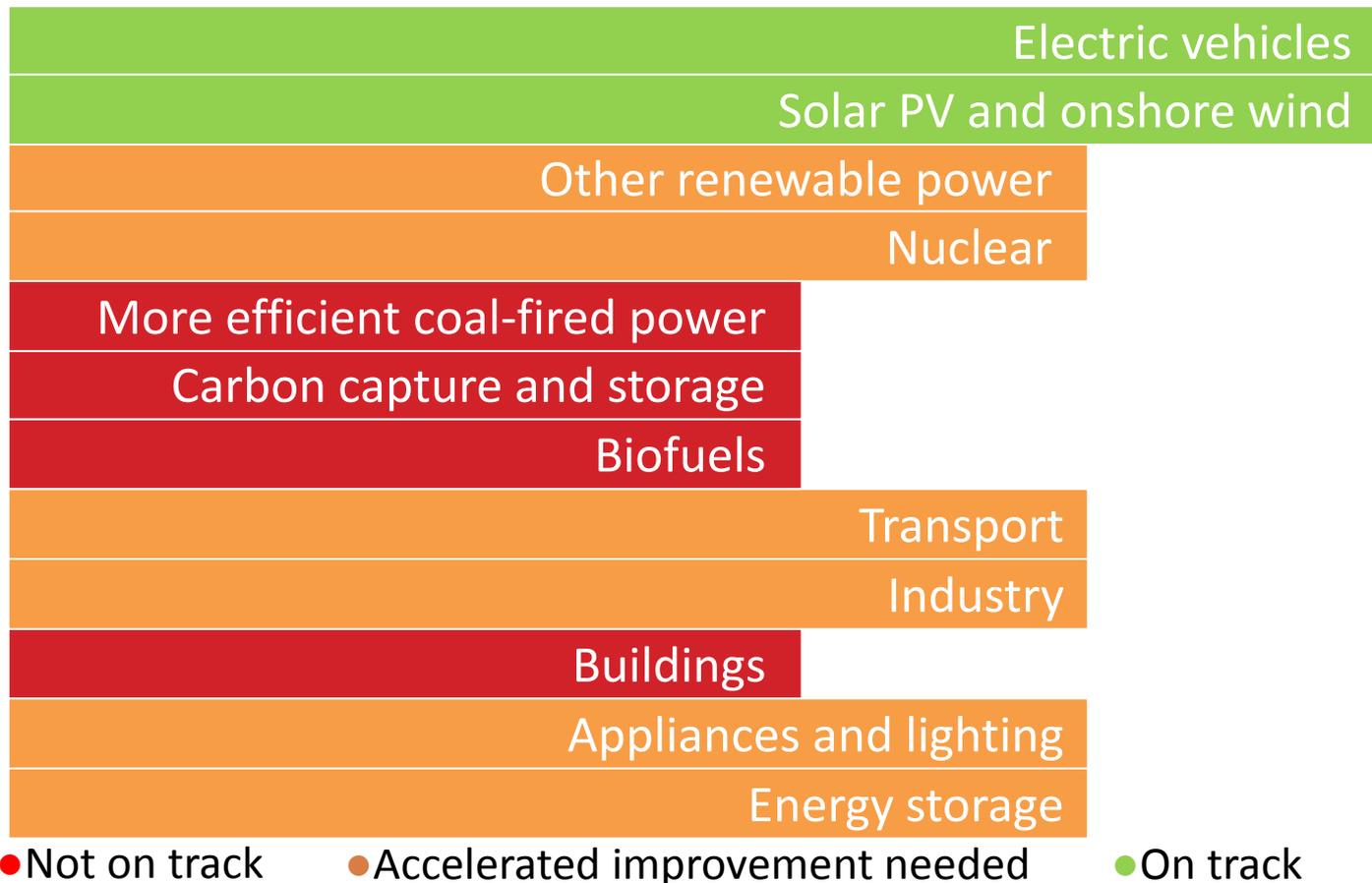
Demand Side



- Challenge depends on flexibility of overall system
- No problems at low shares of wind and solar PV
- Appropriate strategies are needed if share of wind and solar PV is to exceed 10% of total generation
- IEA work on best practices – drawing from experiences in Europe – can provide valuable lessons for Indonesia
- New IEA Unit on System Integration of Renewables

Global progress in clean energy still needs to accelerate

Technology Status today against 2DS targets



Global clean energy deployment is still overall behind what is required to meet the 2°C goal, but recent progress on electric vehicles, solar PV and wind is promising

Suggestions for Indonesia's energy sector

- Ensure fuel pricing mechanisms reflects price fluctuations in international markets
- Continue to reform electricity tariffs to reflect underlying utility costs and incentivize efficiency measures
- Ensure plans for power generation, transmission & distribution are complimentary & take full advantage of cost declines in renewables
- Enforce energy conservation measures & standards, and strengthen their implementation with incentives
- Enhance oil supply security by expanding emergency stocks and promoting investment to modernize the refining sector