

# Energy for Global Growth and Sustainability

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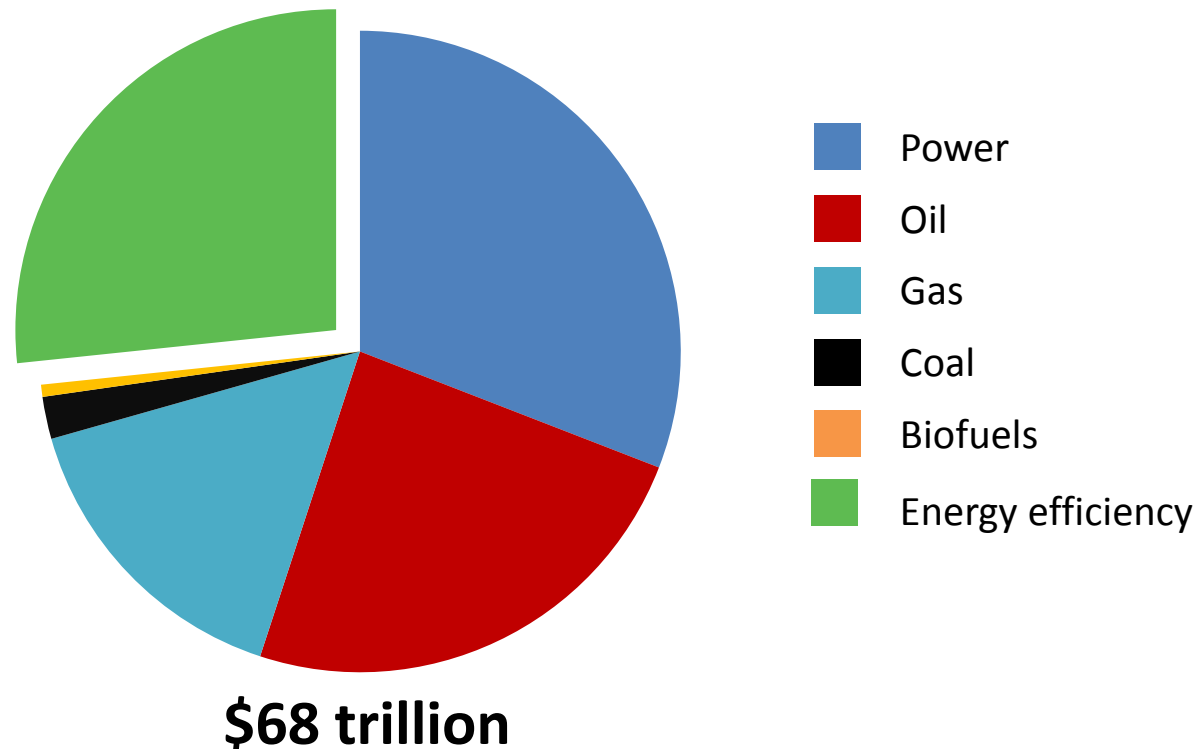
G20 Energy Ministerial

Beijing, China

30 June 2016

# G20 and global energy investment challenge

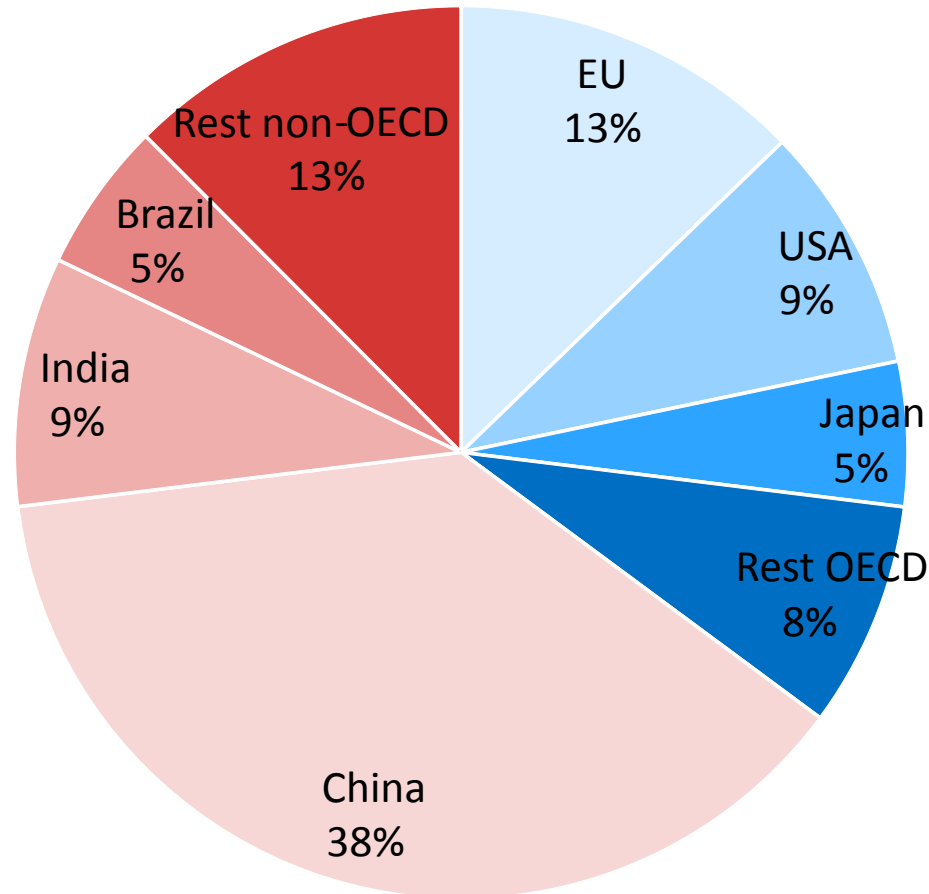
Cumulative investment in the energy sector to 2040



***G20 accounts for two thirds of the \$2.6 trillion in global energy investment needed annually; investment choices have long-term implications***

# Renewables to lead world power market growth to 2020

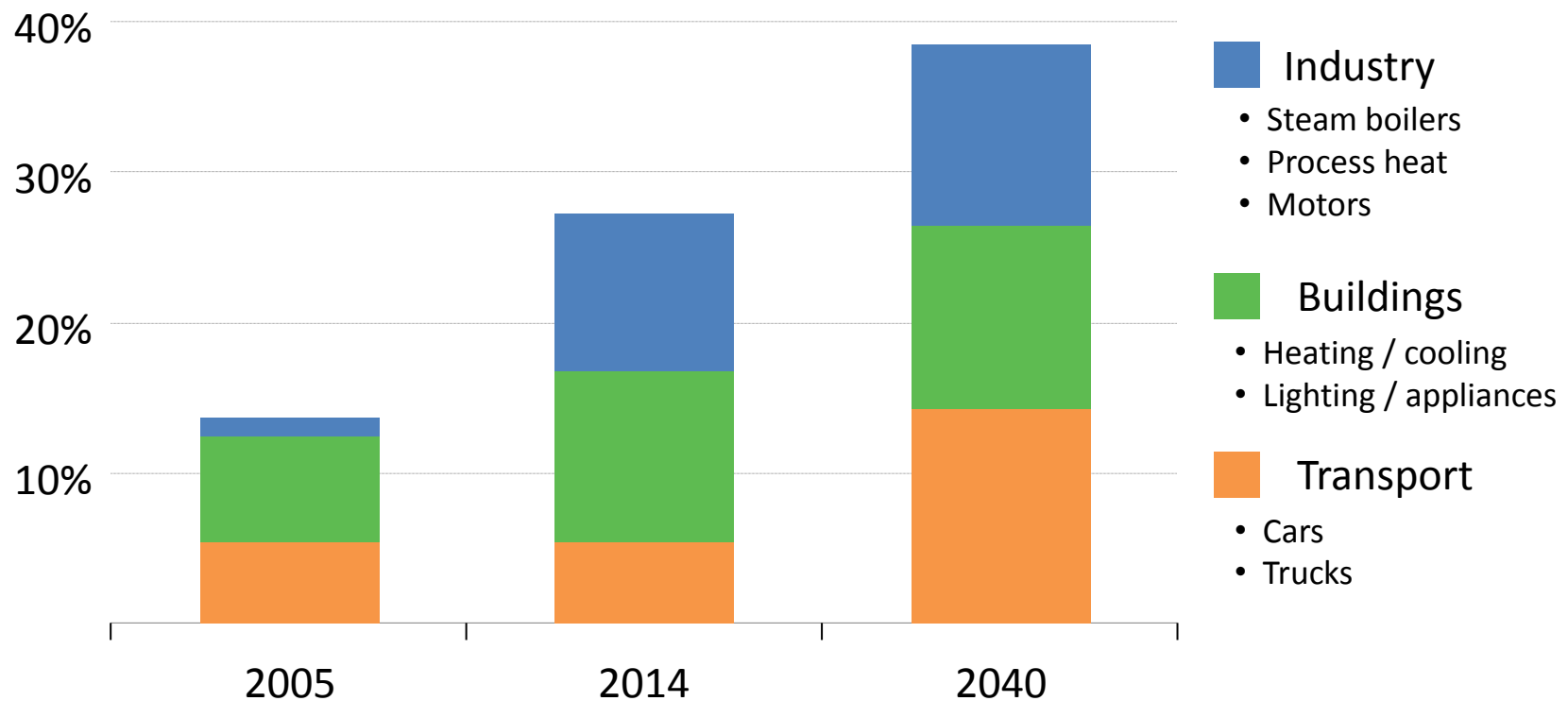
## Shares of net additional renewable capacity, 2014-20



***Renewable electricity additions to 2020 will top 700 GW or almost two-thirds of net additions; Emerging economies make up two-thirds of the expansion***

# Action on energy efficiency must begin to match its potential

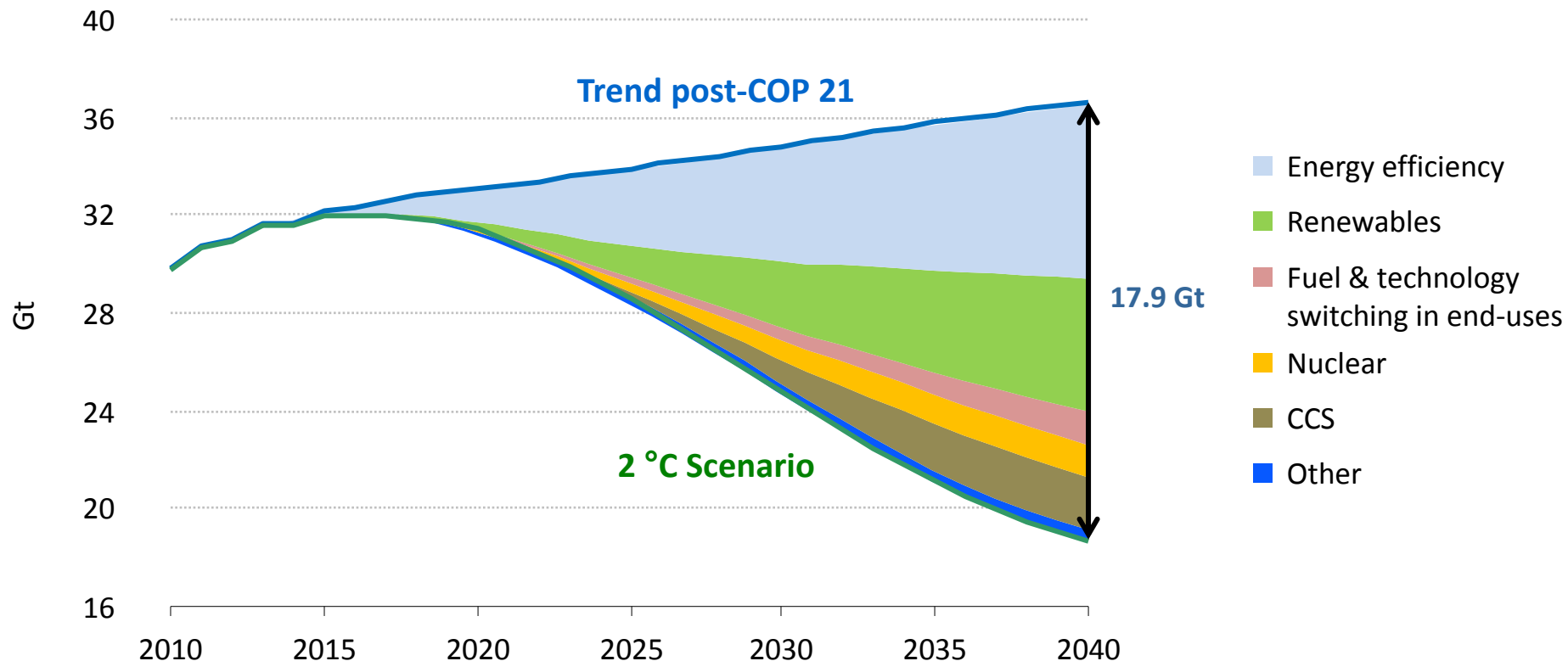
Share of energy consumption covered by mandatory efficiency regulations



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

# A 2 °C pathway requires more technological innovation, investment & policy ambition

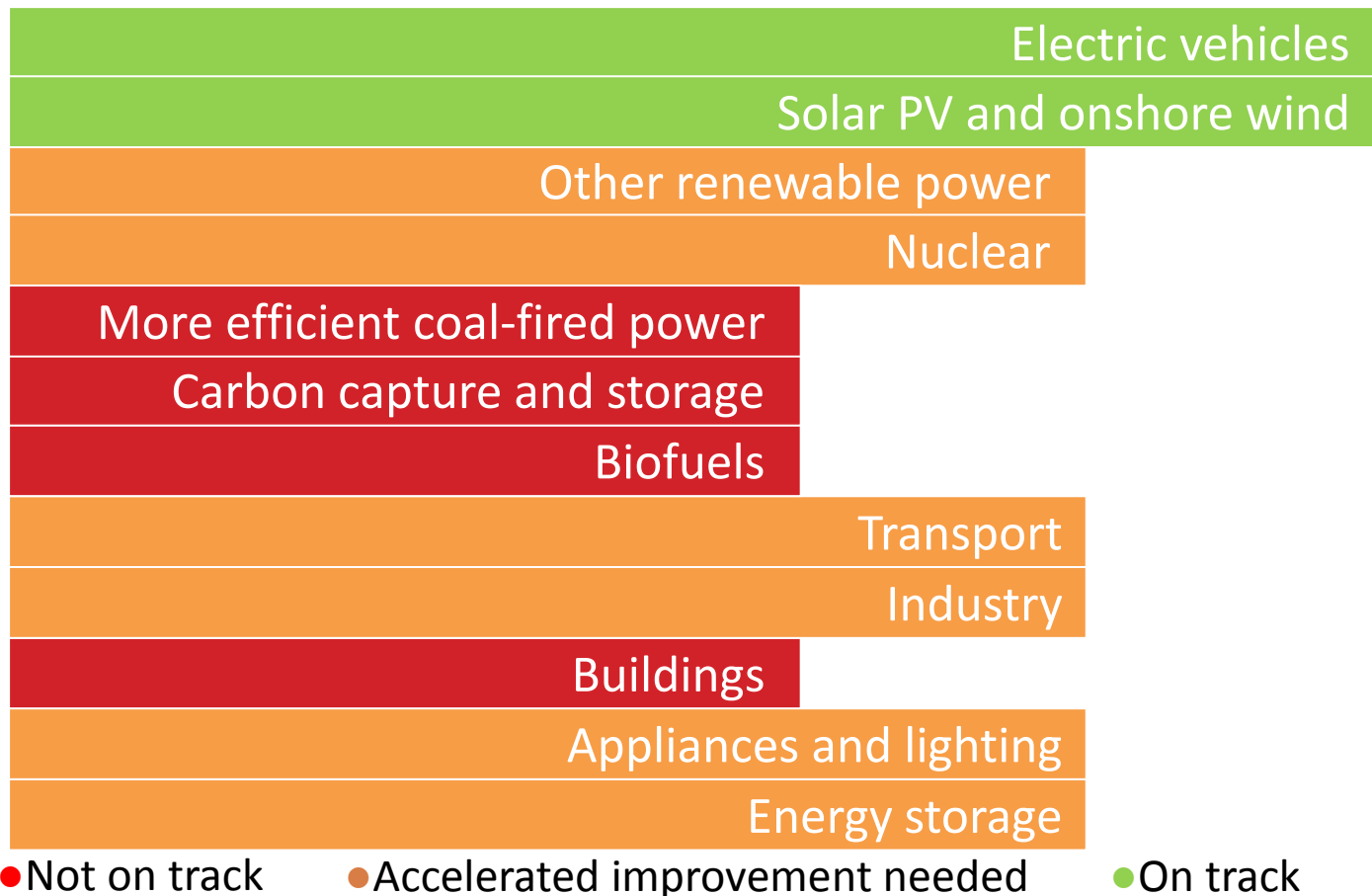
## CO<sub>2</sub> emissions in a post COP 21 world



***Massive additional investments in efficiency, renewables, nuclear power and other low carbon technologies are required to reach a 2 °C pathway***

# Costs continue to fall, but global progress in clean energy still needs to accelerate

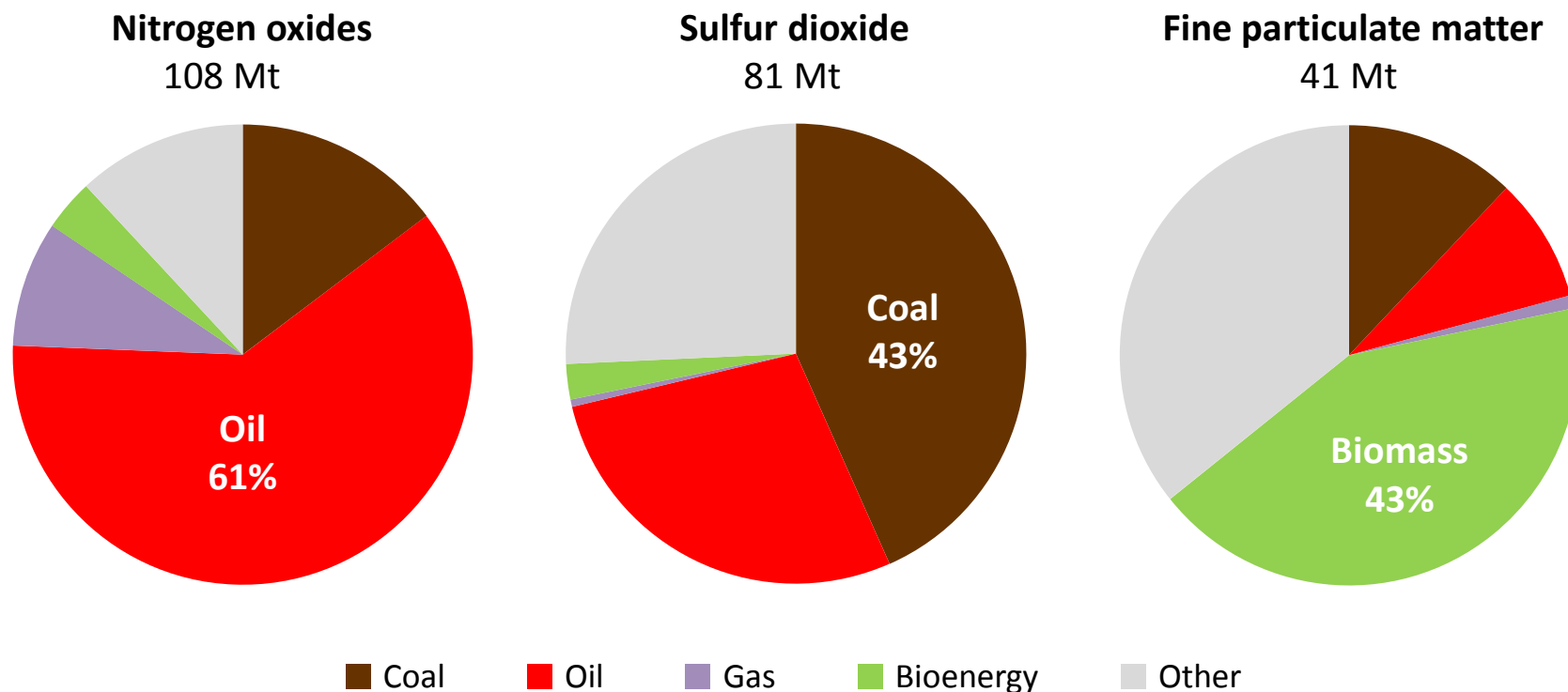
Technology Status today against 2DS targets



**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**

# Air pollution is an energy problem

## Pollutant emissions, 2015



***Air pollution is the 4th largest human health risk globally, causing 6.5 million premature deaths annually***

# G20 countries must take a long-term view on their energy systems

- Be wary of the long-term implications of investments for energy security, climate change and air pollution
- Make sure electricity systems are prepared for the future in terms of policy, regulation & infrastructure
- Mandate & incentivise energy efficiency improvements to harness its vast potential across all sectors of the economy
- International cooperation – including through G20, CEM & Mission innovation – is vital for a secure & sustainable energy economy
- The IEA is committed to becoming a truly global hub for clean energy and is “opening its doors” to the emerging economies