

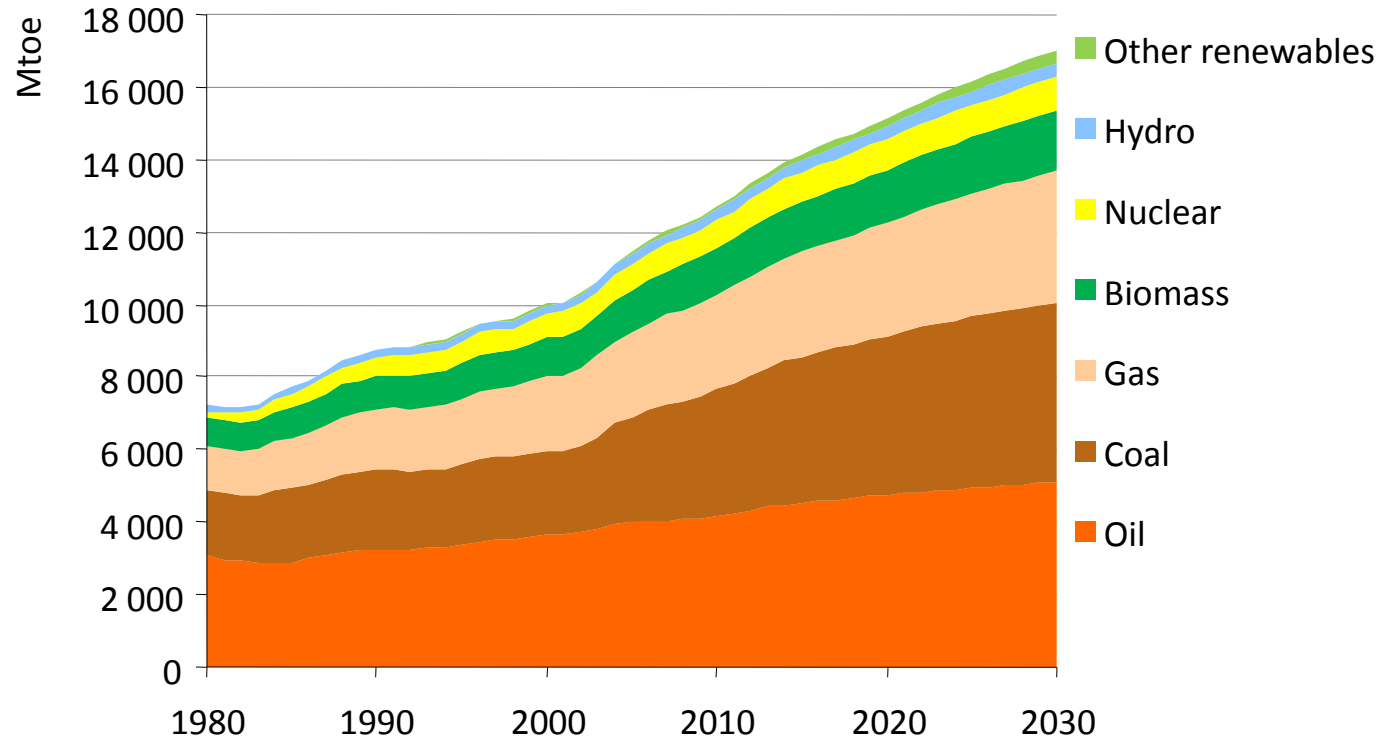


**Our Energy Future –
*Addressing the dual challenges of
climate change and energy security***

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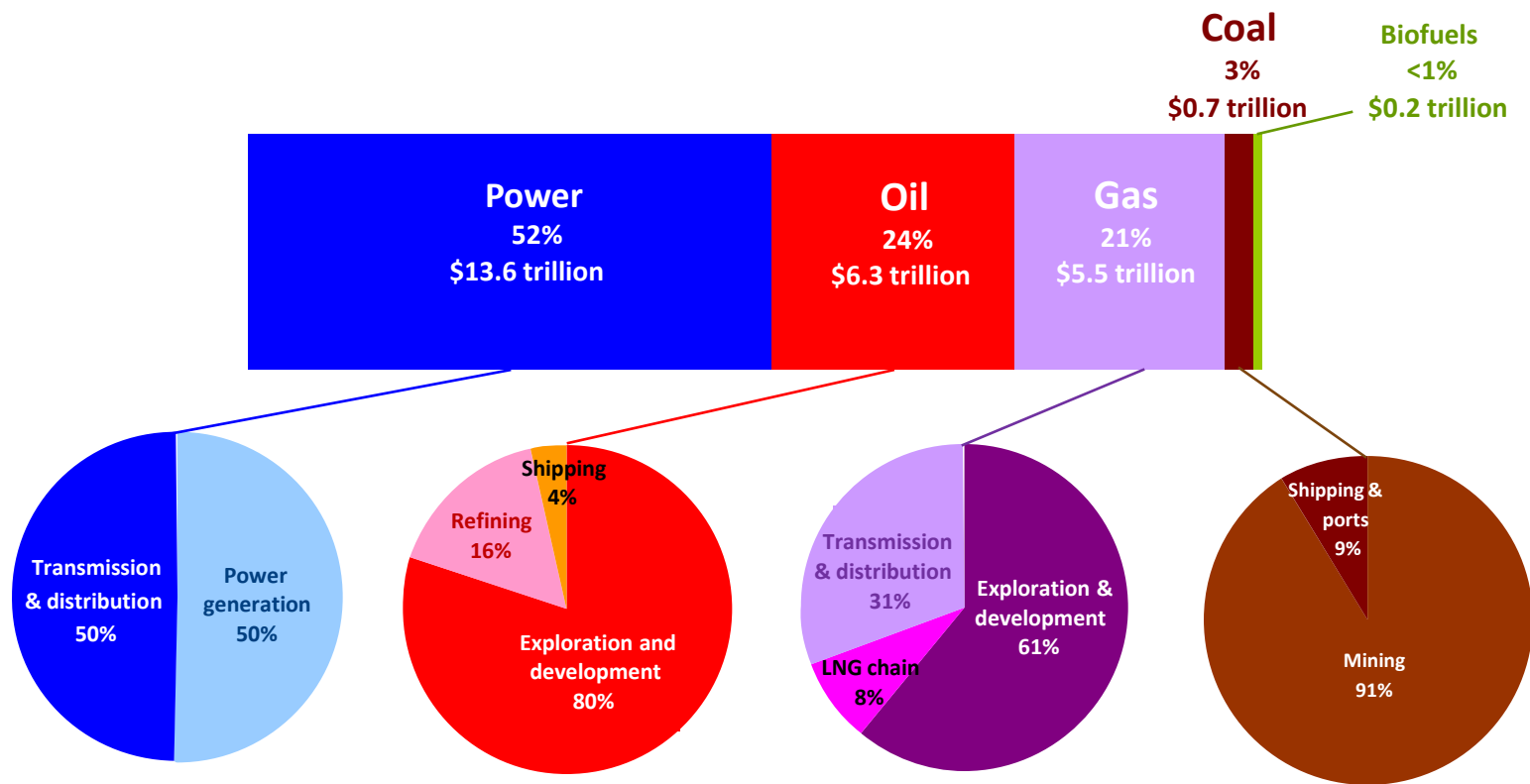
*International Conference on
Nuclear Energy in the 21st Century*
Beijing, 20 April 2009

World primary energy demand in the Reference Scenario



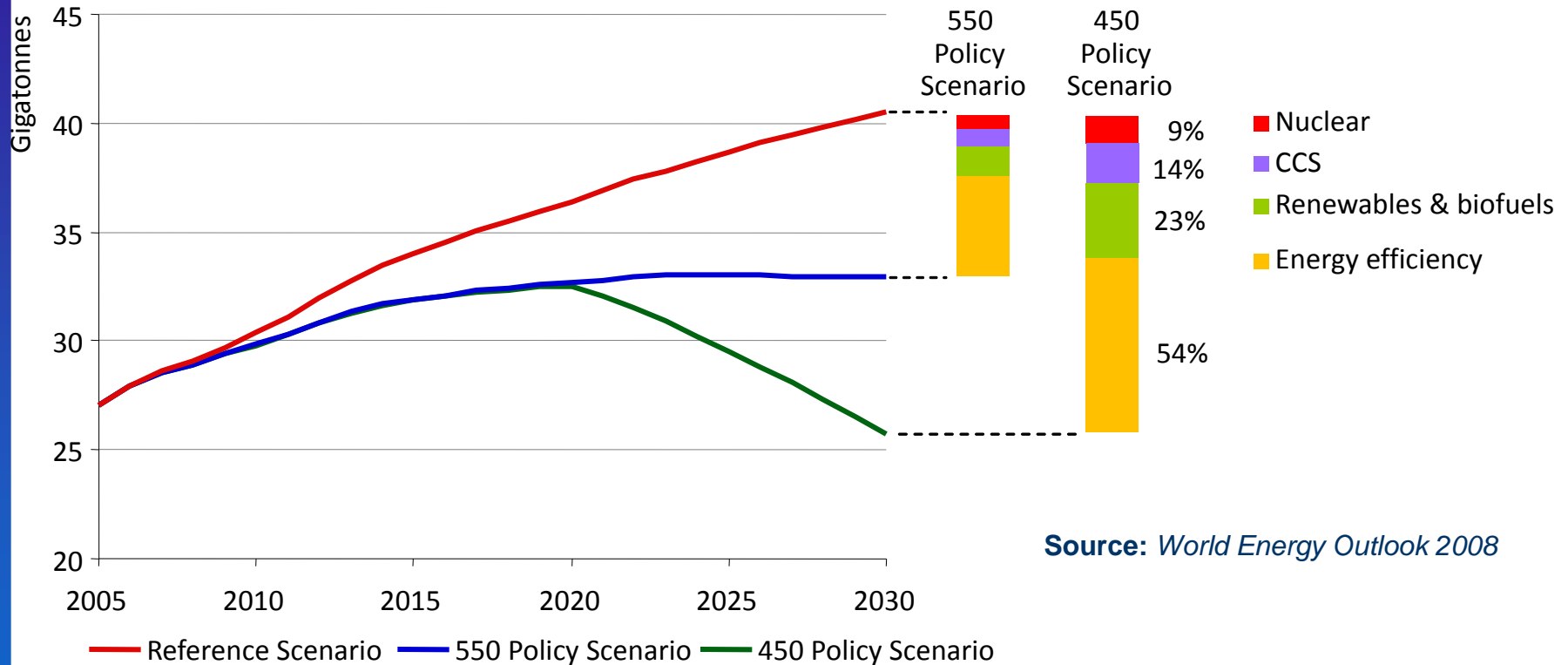
World energy demand expands by 45% between now and 2030 – an average rate of increase of 1.6% per year – with coal accounting for more than a third of the overall rise

Cumulative energy supply investment in the Reference Scenario, 2007-2030



Investment of \$26 trillion, or over \$1 trillion/year, is needed, but the credit squeeze could delay spending, potentially setting up a supply-crunch once the economy recovers

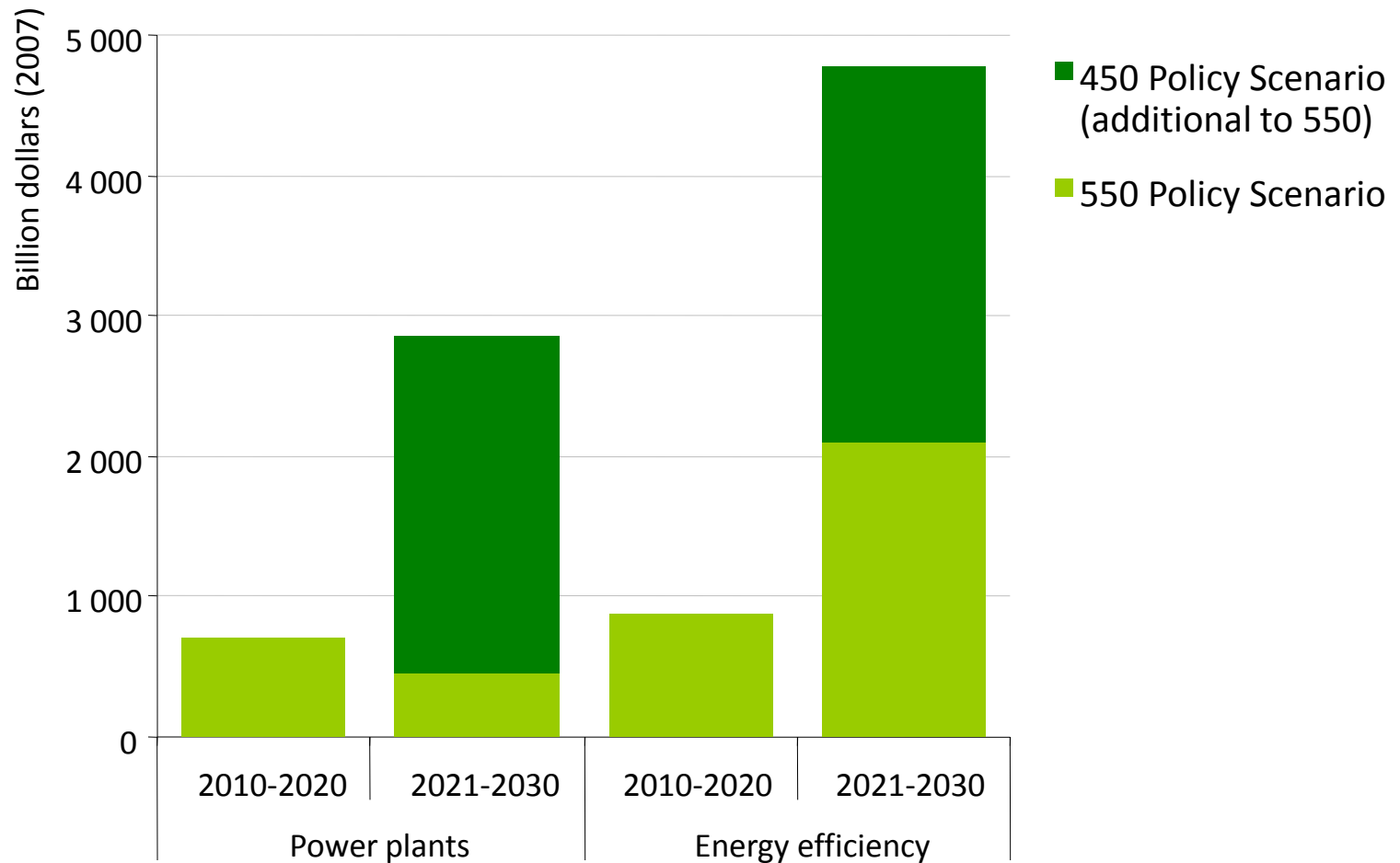
Reductions in energy-related CO₂ emissions in the climate policy scenarios



While technological progress is needed to achieve some emissions reductions, efficiency gains and deployment of existing low-carbon energy accounts for most of the savings.

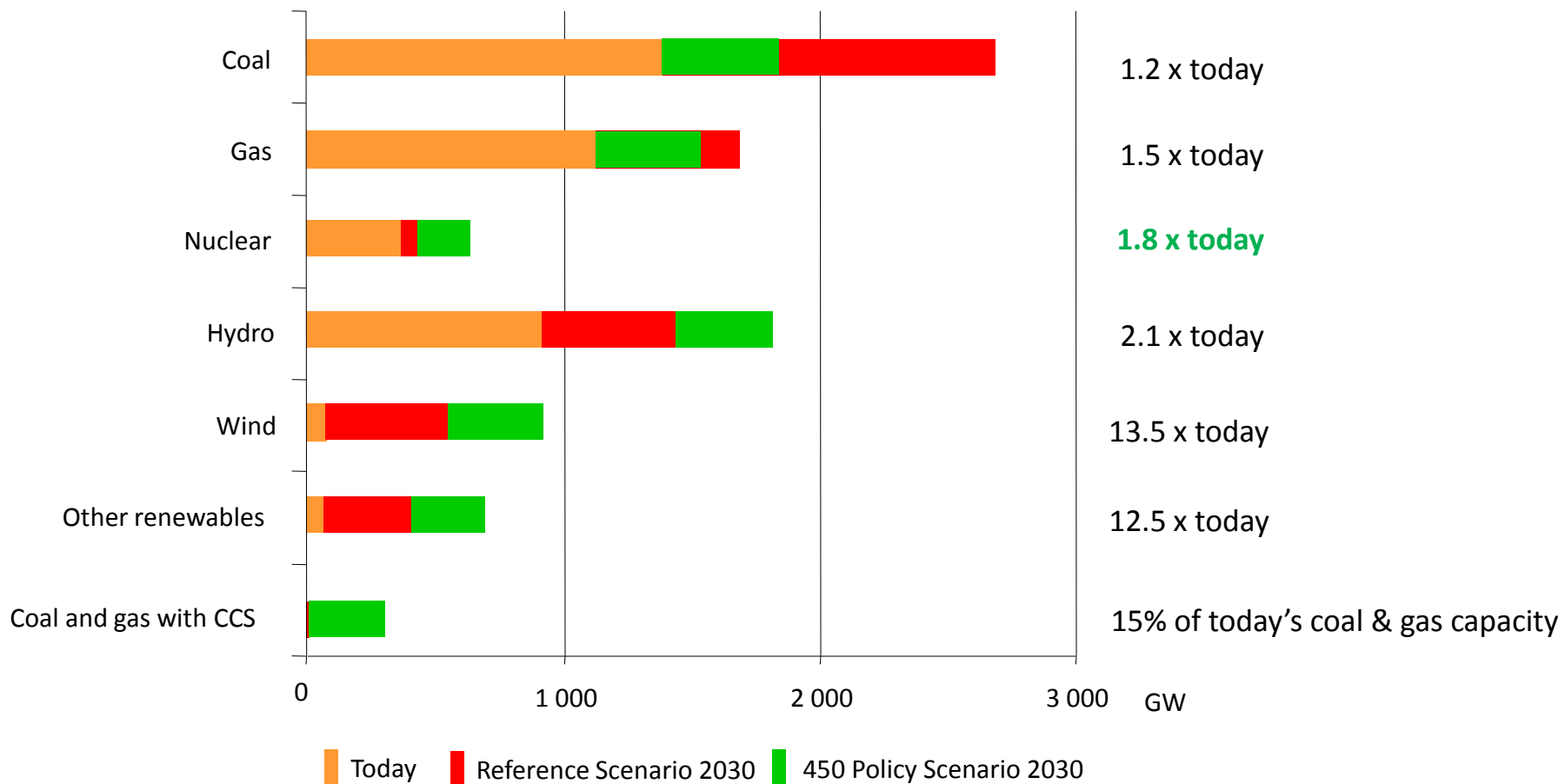


Change in world energy investment in the 450ppm policy scenario compared to the 'business as usual' scenario, 2010-2030



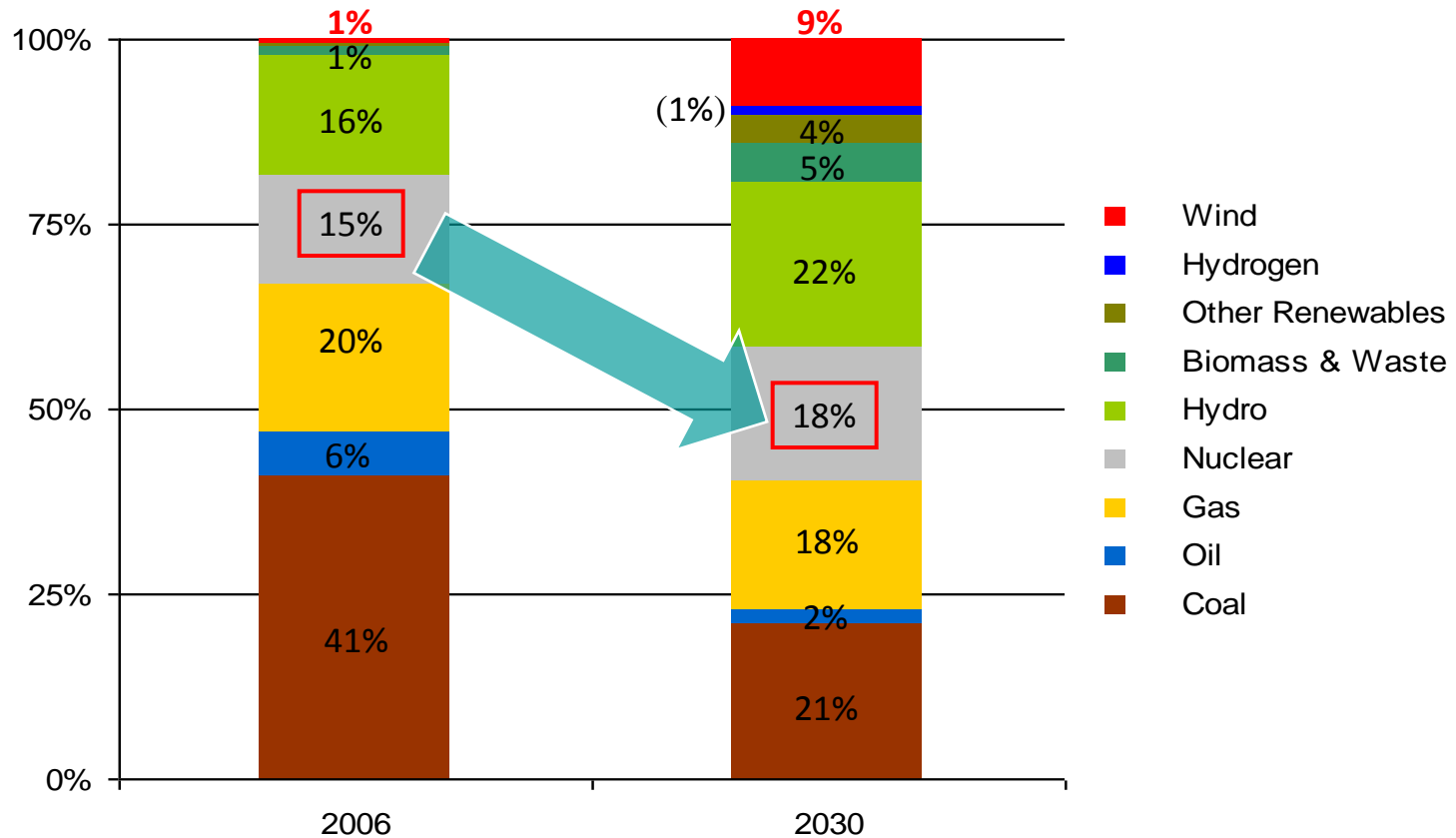
Huge investment in power plants and energy efficiency is required to shift the world onto a 450-ppm trajectory

Total power generation capacity today and in 2030 by scenario



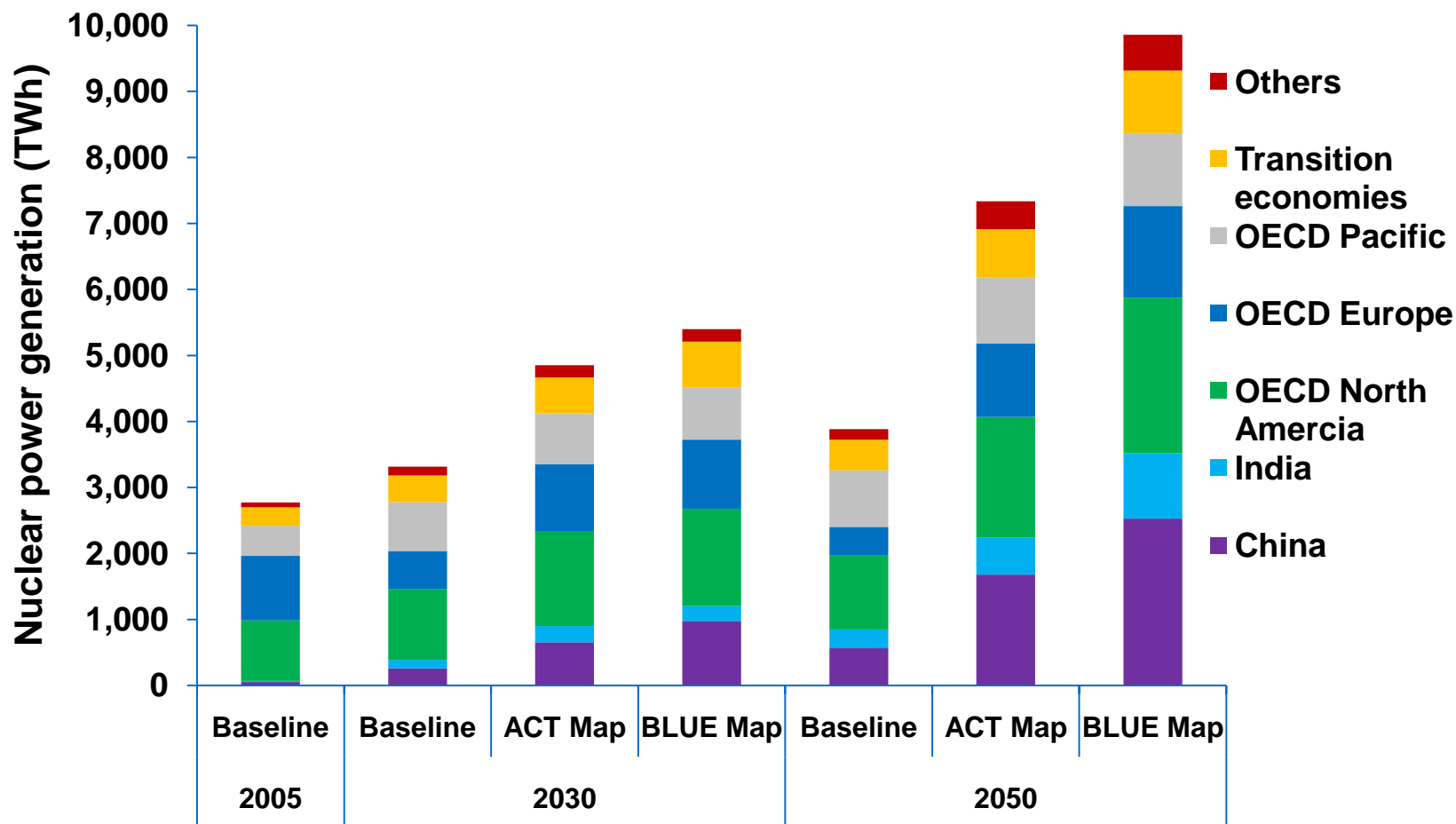
In the 450 Policy Scenario, the power sector undergoes a dramatic change – with CCS, renewables and nuclear each playing a crucial role

Nuclear share of global electricity (450 ppm Scenario)



Under the 450 ppm scenario, nuclear power supplies around 5200 TWh (18% of total electricity generation) and becomes the third largest source together with natural gas.

Nuclear power needs to play a larger role in 2050



Energy Technology Perspectives (ETP) 2008 shows that significant increase of nuclear generation in both OECD countries and non-OECD countries is essential to halve the current level of energy related CO2 emission by 2050.

Challenges and Actions needed

❑ Challenges which nuclear is facing

- ❑ Huge initial investment, which can be only recouped over long term, makes it uneasy to get financing in nuclear power plants
 - especially vulnerable to financing difficulties under current economic crisis
- ❑ Sufficient human resources and other production capabilities
- ❑ NIMBY (Not In My Backyard) syndrome
- ❑ Appropriate management of radioactive waste and spent fuel



❑ Key actions to be considered by governments

- On top of safety policy and non-proliferation policy which are prerequisite;
- ❑ Provide clear and sustained policy support and an efficient and effective regulatory system with predictability for private sector
- ❑ provide additional financial support to investors if needed
- ❑ Put in place arrangements for the management of radioactive waste and spent fuel

Summary

- ❑ We must invest in **all clean energy technologies** (e.g. energy efficiency, renewables, CCS, **nuclear**, electric vehicle etc) portfolios **comprehensively to mitigate climate change**
- Nuclear can play a significant role in the decarbonisation of the power sector.
- ❑ Mitigating climate change enhances our energy security
- ❑ For **nuclear**, policy action is essential to secure sufficient long-term investments



- ❑ **Consistent and long-term oriented policy frameworks** are needed to ensure private sector investment
- ❑ Economic crisis is an opportunity to place a **Clean Energy New Deal** at the heart of economic stimulus package everywhere.