

WORLD ENERGY OUTLOOK 2014 FACTSHEET

How will global energy markets evolve to 2040?

- ▶ **In the New Policies Scenario, energy demand grows by 37% to 2040 on planned policies, an average rate of growth of 1.1%.** Demand grew faster over the previous decades; the slowdown in demand growth is mainly due to energy efficiency gains and structural changes in the global economy in favour of less energy-intensive activities. Natural gas use and the use of low-carbon fuels grow strongest, increasingly replacing coal and oil in the energy mix. By 2040, each fossil fuel accounts for around one-quarter of global energy demand, with the remainder from low-carbon fuels.
- ▶ **Energy demand growth shifts decisively away from OECD countries.** China dominates energy demand growth until the mid-2020s, but as its population levels off and its economic growth slows around that time, India takes over as the leading engine of energy demand. Despite the strong growth, energy use per capita in 2040 in non-OECD countries is still well below the average of OECD countries in the 1970s at comparable levels of GDP per capita. Technological progress and improved energy efficiency, however, allow a higher level of demand for energy services to be satisfied per unit of energy.
- ▶ **The re-ordering of energy trade flows towards Asian markets gathers pace.** Rising crude oil-import needs of China and India, from the Middle East and other regions, increase their vulnerability to the implications of a possible shortfall in investment or a disruption to oil supply. The share of natural gas in total inter-regional fossil-fuel trade rises by one-quarter to more than 20% by 2040; concerns about gas security are eased by the increasing availability of LNG. Coal trade grows by 40% to 2040, driven by strong Asian demand.
- ▶ **World oil supply rises by 14 mb/d to 104 mb/d in 2040, but the trend hinges critically on timely investments in the Middle East.** Until 2025, non-OPEC supply from the United States, Canada and Brazil contributes to output growth. But by the mid-2020s, total non-OPEC oil supply starts to fall back, increasing the call on major resource-holding countries in the Middle East. Over the *Outlook* period, the task of bringing production above 100 mb/d rests on a fairly limited number of shoulders.
- ▶ **All major regions, except Europe, contribute to the more than 50% rise in natural gas output.** Global production of natural gas rises in a near-linear fashion to 5 400 bcm in 2040, with an increasingly important role for unconventional gas which increases its share in output from 17% to 31%. Gas resources are more than sufficient to meet this increase in demand, but the required cumulative investment of more than \$11 trillion along the gas supply chain represents a stern challenge, with the way that gas will be priced on domestic and international markets a key uncertainty.
- ▶ **Global coal demand grows at a much lower rate than over the last 30 years, at 0.5% per year, to 6 350 Mtce in 2040.** Growth of coal demand is constrained by new air pollution and climate policies in the main markets – the United States and China – but also in Europe. Coal use continues to grow briskly in India. China, India, Indonesia and Australia alone account for over 70% of global coal output by 2040, underscoring Asia's importance in global coal trade and pricing.
- ▶ **Energy efficiency slows energy demand growth, diminishes supply-side investment and reduces international energy prices.** Without the cumulative impact of energy efficiency measures over the projection horizon, oil demand in 2040 would be 23 mb/d (or 22%) higher, gas demand 940 bcm (or 17%) and coal demand 920 Mtce (or 15%) higher. Beyond cutting energy use, energy efficiency lowers energy bills, improves trade balances and cuts CO₂ emissions. Improved energy efficiency compared with today reduces oil and gas import bills for the five largest energy-importing regions by almost \$1 trillion in 2040.
- ▶ **Many governments have announced new measures to curb CO₂ emissions in the run-up to the UN climate summit in Paris in 2015, but they fall short of reaching the 2 °C target.** Emissions rise by 20% to 2040, putting the world on track for a long-term global temperature increase of 3.6 °C. Increasing power sector decarbonisation through 2040 by about 25% is key to achieving climate goals and would take the world half-way towards limiting the temperature increase to 2 °C.