

**UNDER EMBARGO**  
**until 10<sup>th</sup> November 2009 - 10:00 GMT**

**IEA/PRESS (09)16**  
**London, 10 November 2009**

**The time has come to make the hard choices needed to combat climate change and enhance global energy security, says the latest IEA *World Energy Outlook***

"World leaders gathering in Copenhagen next month for the UN Climate summit have a historic opportunity to avert the worst effects of climate change. The *World Energy Outlook 2009* seeks to add momentum to their negotiations at this crucial stage by detailing the practical steps needed for a sustainable energy future as part of a global climate deal," said Nobuo Tanaka, Executive Director of the International Energy Agency today in London at the launch of the new *WEO* – the annual flagship publication of the IEA.

"*WEO-2009* provides both a caution and grounds for optimism. Caution, because a continuation of current trends in energy use puts the world on track for a rise in temperature of up to 6°C and poses serious threats to global energy security. Optimism, because there are cost-effective solutions to avoid severe climate change while also enhancing energy security – and these are within reach as the new *Outlook* shows," added Mr. Tanaka.

Although, as one of the consequences of the financial crisis, global energy use is set to fall this year, *WEO-2009* projects that it will soon resume its upward trend if government policies don't change. In this Reference Scenario, demand increases by 40% between now and 2030, reaching 16.8 billion tonnes of oil equivalent. Projected global demand is lower than in last year's report, reflecting the impact of the economic crisis and of new government policies introduced over the past year. Fossil fuels continue to dominate the energy mix, accounting for more than three-quarters of incremental demand. Non-OECD countries account for over 90% of this increase, and China and India alone for over half. In addition to increasing susceptibility to energy price spikes, the Reference Scenario projects a persistently high level of spending on oil and gas imports which would represent a substantial financial burden on import-dependent consumers. China overtakes the US around 2025 to become the world's biggest spender on oil and gas imports. The energy poverty challenge also remains unresolved with 1.3 billion people still without electricity in 2030 from 1.5 billion today; though universal access could be achieved with investment of only \$35 billion per year in 2008-2030.

*WEO-2009* demonstrates that containing climate change is possible but will require a profound transformation of the energy sector. A 450 Scenario sets out an aggressive timetable of actions needed to limit the long-term concentration of greenhouse gases in the atmosphere to 450 parts per million of carbon-dioxide equivalent and keep the global temperature rise to around 2°C above pre-industrial levels. To achieve this scenario, fossil-fuel demand would need to peak by 2020 and energy-related carbon dioxide emissions to fall to 26.4 gigatonnes in 2030 from 28.8 Gt in 2007.

"At the IEA Ministerial meeting, a large majority of Ministers showed their intention to take the lead, organise themselves and commit to the challenge to reach the 450 Scenario - the energy path of Green Growth. Only by mitigation action in all sectors and regions can we turn the 450 Scenario into reality," stressed Mr. Tanaka. Energy efficiency is the largest contributor, accounting for over half of total abatement by 2030. Low-carbon energy technologies also play a crucial role: around 60% of global electricity production comes from renewables (37%), nuclear (18%) and plants fitted with carbon capture and storage (5%) in 2030. Furthermore, a dramatic shift in car sales occurs, with hybrids, plug-in hybrids and electric vehicles representing almost 60% of sales in 2030, from around 1% today.

Compared to the Reference Scenario, cumulative incremental investment of \$10.5 trillion is needed in the 450 Scenario in low-carbon energy technologies and energy efficiency by 2030. In addition to avoiding severe climate change, this cost is largely offset by economic, health and energy-security benefits. Energy bills in transport, buildings and industry alone are reduced by \$8.6 trillion globally over the period 2010-2030. “The challenge for climate negotiators is to agree on instruments that will give the right incentives to ensure that the necessary investments are made and on mechanisms to finance those investments in non-OECD countries,” said Mr. Tanaka and added: “In our 450 scenario in OECD countries the carbon price reaches \$50 per tonne of CO<sub>2</sub> in 2020 and \$110 in 2030.”

*WEO-2009* also identifies higher oil prices, coupled with the downturn in oil sector investment, as a serious threat to the world economy, just as it is beginning to recover. As a result of the financial crisis, investment in upstream oil and gas has already been cut by over \$90 billion this year compared with 2008. While oil demand has dropped sharply, in the Reference Scenario it starts recovering in 2010, reaching 88 mb/d in 2015 and then 105 mb/d in 2030. “Calling for increased investment in fossil-fuel supply is not inconsistent with the need to move to a low-carbon energy pathway,” stressed Mr. Tanaka. “Even in the 450 Scenario, OPEC production still increases substantially in the period to 2030, boosting those countries’ revenues in real terms to four times their level of the previous 23 years,” he added.

Whatever climate policies are introduced, natural gas – a special focus in *WEO-2009* – is also set to continue to play a bridging role in meeting the world’s sustainable energy needs. In the Reference Scenario, gas demand rises by 41% from 3.0 trillion cubic metres in 2007 to 4.3 tcm in 2030. Gas demand also continues to expand in the 450 Scenario but is 17% lower in 2030 than in the Reference Scenario thanks to more efficient use, lower electricity demand and increased switching to non-fossil energy sources.

The recent rapid development of unconventional gas resources – notably shale gas – in North America has transformed the gas-market outlook. “Unconventional gas is unquestionably a game-changer in North America with potentially significant implications for the rest of the world,” said Mr. Tanaka. The share of unconventional gas in total US gas output jumped from 44% in 2005 to around 50% in 2008 and, in the Reference Scenario, is projected to rise to almost 60% in 2030. The boom in North American unconventional gas production, together with the recession’s impact on demand, is expected to prolong the glut of gas supply for the next few years. The analysis of *WEO-2009* shows that the annual under-utilisation of inter-regional pipeline and LNG capacity could rise from around 60 billion cubic metres in 2007 to 200 bcm by 2015. This glut could have far-reaching consequences for the structure of gas markets, with suppliers to Europe and Asia-Pacific coming under pressure to modify pricing terms under long-term contracts, to de-link gas prices from oil prices, sell more gas on a spot basis and to cut prices to stimulate demand.

*WEO-2009* also provides a focus on Southeast Asia in recognition of its growing influence on energy markets. In the Reference Scenario, Southeast Asia’s energy demand expands by 76% in 2007-2030. “Coupled with strong growth in China and India, this robust demand in Southeast Asia is refocusing the global energy landscape increasingly towards Asia,” stated Mr. Tanaka.

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Journalists may obtain review copies of *WEO-2009* from the IEA Communication and Information Office in Paris. Contact: [IEAPressOffice@iea.org](mailto:IEAPressOffice@iea.org).

**World Energy Outlook 2009 pp. 650** (612009191P1) ISBN: 9789264061309  
Price: €150.00