Towards sustainable energy markets

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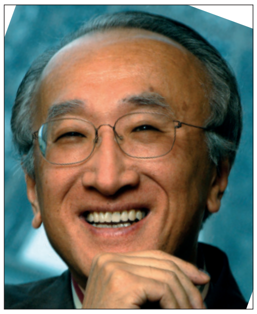

NOBUO TANAKA took over as Executive Director of the IEA on 1st September 2007. Prior to that, he had been Director for Science, Technology and Industry at the Paris-based Organisation for Economic Co-operation and Development (OECD). Mr Tanaka began his career in 1973 in the Ministry of Economy, Trade and Industry (METI) in Tokyo. He has extensive national government and international experience within METI, the Embassy of Japan in Washington DC and the OECD.

As a new decade begins, the energy sector faces daunting challenges. Not only do we need to ensure global access to secure energy resources at relatively stable prices and address climate change, but we must mobilise the investment required to achieve both. And we need to act soon. Overcoming these challenges will require the concerted efforts of all countries, including both energy consumers and energy producers. The International Energy Agency (IEA) looks to the upcoming International Energy Forum (IEF) Ministerial meeting of key producer and consumer countries in Cancun in March as an opportunity to focus on a number of these pressing energy issues, from the continuing problem of energy poverty to the challenge of climate change to the dynamics driving energy markets.

Oil and gas market outlook

Since the last IEF meeting in April 2008, the global economic crisis hit both oil and gas markets. Over the medium term, demand for both fuels is likely to grow again from 2010 onwards, even if the global recession means that demand will take time to catch up with pre-crisis levels. For oil, there is currently a relatively ample cushion of spare capacity and OECD inventory cover which could deal with any supply or demand-side shocks; and that could persist for much of 2010 and 2011. But this margin of flexibility could erode fairly rapidly from 2012 onwards if economic growth reverts to pre-crisis levels, if efforts to boost oil use efficiency are not accelerated and if investment in new capacity remains constrained. After all, mature field decline rates of 7-8 per cent annually remove over 3 million barrels per day (mb/d) of productive capacity each year. The current sluggish response of oil demand to the resumption of growth in OECD countries suggests that structural shifts to spur substitution away from oil and fuel economy standards on gasoline use in transportation are already having their impact. But emerging non-OECD markets retain tremendous growth potential; and insufficient investment in production could bring back price volatility as economic growth accelerates and spare capacity declines.

For natural gas, an unexpected boom in North American unconventional gas production could mean a glut in supply persisting for some years to come. This could have implications for the way gas is priced in European and Asian markets, potentially weakening traditional linkages with oil prices. But weaker spot gas prices may also deter investment at the margin, and lead to tighter supplies in the not too distant future. Ensuring that gas investment continues, by highlighting the fuel's strong prospects over the longer term, will be crucial, as too will maximising efficiency of use and curbing flaring. A detailed field-by-field analysis of gas-production trends of nearly 600 fields (accounting for 55 per cent of global production) indicates that close to half of the world's existing production capacity will need to be replaced by 2030 as a result of depletion. This is the equivalent of twice current Russian production. By then, only about one third of total output comes from currently producing fields – if policies do not change – despite continuing investment in them. In short, while the near-term outlook may seem relatively comfortable, the need for sustained investment remains.

Climate change challenge

Current trends in oil and gas markets also contribute to longer-term concerns. Continuing on today's energy path would mean rapidly increasing dependence on fossil fuels, with alarming consequences for climate change and energy security. The World Energy Outlook (WEO) 2009 Reference Scenario, in which no new policies are introduced, sees a continued rapid rise in energy-related CO_2 emissions through to 2030, resulting from increased global demand for fossil energy.

If the world is to stabilise the concentration of greenhouse gases in the atmosphere to a level around 450 ppm (thereby limiting to 50 per cent the probability of a global average temperature increase in excess of 2°C) energy has to be used more efficiently and the carbon content of the energy we consume must be reduced, by switching to low- or zero-carbon sources. In our '450 Scenario', primary energy demand grows by 20 per cent between 2007 and 2030. This corresponds to an average annual growth rate of 0.8 per cent, compared with 1.5 per cent in the Reference Scenario.

Under the 450 scenario, the share of non-fossil fuels in the overall primary energy mix increases from 19 per cent in 2007 to 32 per cent in 2030, when CO_2 emissions per unit of GDP are less than half their 2007 level. Over half of the emission savings come from efficiency improvements. Yet, with the exception of coal, demand for all fuels is higher in 2030 than in 2007, and fossil fuels remain the dominant energy source in 2030. Even under the 450 scenario, the demand for OPEC oil rises by 11 mb/d, greater than the increase seen during 1980-2008. So in any realistic scenario, demand for OPEC supplies will increase, prices should rise and revenues are likely to increase significantly in real terms over the next two decades. Of course, sustained investment on an enormous scale will be necessary to enable producers to benefit fully from this rising demand.

Helping that investment materialise will require clear, concerted policy action in the short and medium term against a backdrop of more efficient, open, predictable and transparent markets – physical and financial. Unfortunately, the outcome of climate change talks in Copenhagen last December was less conclusive than many had hoped for, meaning that much more work remains to be done to put the world on a sustainable and stable energy footing and great uncertainty remains for how to activate the immense investment needed.

Combating price volatility

These uncertainties of course create another problem: volatility and uncertainty in global energy markets, an issue which has preoccupied Ministers and industry leaders over the last two years. Producers and consumers can often have a different perspective on energy markets; but both sides can address the issues of market fundamentals through the efficient use or conservation of energy, as well as investment in future capacity. Another issue is how to make markets function better. We need more transparency in markets and better information. Dialogue in the IEF framework is one important step in this direction. Following on from the Jeddah and London Energy Meetings in 2008, Ministers at Cancun will be looking at recommendations for strengthening the dialogue and the operation of the Forum.

The subject of energy price formation has also been under the IEA spotlight for some time. In February we held the third in a series of workshops (which stretch back to 2004) on this issue in Tokyo. We heard from market players, analysts, regulators, policy makers and key oil consumers and producers about physical and financial market volatility, its impact and potential policy responses. Contributors from China, India and other emerging Asian energy markets played a key role in the workshop's success. As always, the subject is a sensitive one, but the importance of greater information flow and a level playing field in managing and regulating physical and financial market investment were highlighted as helping to dampen damaging price swings, even if removing volatility altogether may well never be possible.

Importance of new dialogue

The need for dialogue between producer and consumer countries has never been greater. As energy demand continues to rise strongly in the oil and gas exporting countries, they are increasingly confronting some of the same problems energy consumers have long faced: how to restrain demand, how to protect the environment and how to diversify energy sources. The challenges of maintaining energy security, promoting stable economic growth and preventing global warming and climate change highlight very clearly the extent to which producers and consumers now have important interests in common. Thus it is right to strengthen and renew our dialogue and the instruments which help us to conduct it, recognising of course that in doing so we must be careful to get the most out of participating countries' financial contributions by avoiding duplication of the work of existing institutions.

We look forward to continuing this dialogue with our partners at OPEC and the IEF Secretariat. In the context of plans to strengthen the work of the Forum as a framework for international dialogue, we have set out with our partners in OPEC and at the IEF Secretariat a programme of expert meetings and other joint endeavours in the months ahead, including sharing analysis on energy outlooks and the functioning of energy markets. We have always valued such exchanges with our counterparts in international energy institutions and we see value in having them formalised in this way.

An important example of the benefits of such exchange is the Joint Oil Data Initiative (JODI). The IEA has been a supporter and active participant since the founding of JODI, working with its global and regional partner organisations in contributing up-to-date statistics to a central data base. IEA oil market statistics and those provided by fellow JODI partners shine a light on monthly and annual levels of production, demand, stocks, trade, processing and demand. The seven organisations supporting JODI need to agree to the expansion of its activities and should all receive adequate additional funding commensurate with their additional work. Solid data is, after all, the foundation of sound analysis.

The IEA is committed to remain at the forefront of ensuring that market transparency advances, generating independent research and analysis and working proactively and productively with colleagues in OPEC, IEF and elsewhere. The extension of JODI to natural gas and the consensus recommendations to strengthen the dialogue and the IEF Secretariat are great examples of this commitment and spirit of cooperation. More broadly, a proactive and holistic set of policies is required to ensure future supply security, to prevent damaging fossil fuel price spikes and to meet climate change challenges. But only by working together can we ensure cleaner, more stable and secure energy markets for the future. ■

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