Finding the energy to halve greenhouse gas emissions in half

By Kevin Tan

Do today's global energy efficiency initiatives work? "Insufficiently ambitious," says Nobuo Tanaka, Executive Director of the International Energy Agency. So what do we need to address the challenge of climate change?

Current global energy efficiency initiatives and measures to halve CO2 emissions from the energy production sector by 2050 are insufficiently ambitious, says **Nobuo Tanaka**, Executive Director of the International Energy Agency (IEA).

“Energy efficiency accounts for 38 per cent of the necessary reduction from the business-as-usual (scenario) to the kind of trajectory towards halving the CO2 emissions by 2050,” says Tanaka. “On top of that, we have about 40-something per cent of decarbonising the power sector either by carbon-capturing storage or nuclear power or renewable energy sources. Still, this is not enough to achieve halving the CO2 emissions.”

According to the IEA, it will require about US$46 trillion in additional clean technology investments between now and 2050 to bring about a 50 per cent

reduction in CO2 emissions from 2005 levels. That is estimated to be 1.1 per cent of average annual global economic output over the period.

Speaking to INSEAD Knowledge on the sidelines of Singapore International Energy Week (SIEW), Tanaka concedes there are “no silver bullet” solutions to resolving the challenge of climate change, but he believes that all kinds of environmental technological innovations are needed to address the issue.

However, governments have been slow in improving the energy efficiency of their economies, he says. “Energy efficiency is a low-hanging fruit and cost-effective way. But sadly the speed is not enough,” says Tanaka.

The interview with the IEA’s Tanaka came ahead of the Cancun Climate Conference, which aimed to cement existing emissions targets. At the previous summit in Copenhagen in 2009, negotiators failed to reach a binding deal to cut greenhouse gases ahead of the expiration of the Kyoto Protocol in 2012. But countries agreed on a political accord for US$100 billion a year by 2020 to fund environmental efforts in developing countries and pledged to stop global temperature increases to two degrees Celsius higher than in pre-industrial times.

Developing economies ramp up

For their part, major emerging economies such as China and India are striving to improve their energy efficiency and to reduce greenhouse gases, Tanaka notes. For instance, India has set up an energy efficiency bureau and is issuing labelling for energy-efficient appliances. Meanwhile, China is aiming to reduce its energy usage by 20 per cent in five years’ time, which it is almost achieving, says Tanaka.

These environmental measures should result in better energy security, says Tanaka. “Energy security is doing something for yourself, while climate change is doing the same thing for somebody else,” says Tanaka. “So convincing the public about the energy security argument makes good sense … they know they have to do it, otherwise we have already experienced the oil price will go up to US$147 (a barrel) if these countries do not take these actions.”

To be sure, China is keen to advance its environmental technologies because it is in its economic self-interest to do so, says Dr **Cho-Oon Khong**, Chief Political Analyst with Shell International.

“They (China) do actually believe it makes them more competitive in the long run, and secondly they are concerned about local environment pollution. So they are moving ahead on these grounds for their own reasons,” says Khong.

“They’re not moving ahead because the rest of world says ‘China, you need to move’. They’re moving ahead because it makes eminent good sense for them to move.”

The question of how China can rebalance its economy to a more sustainable mode of development is central to the thinking of the Chinese leadership, adds Khong.

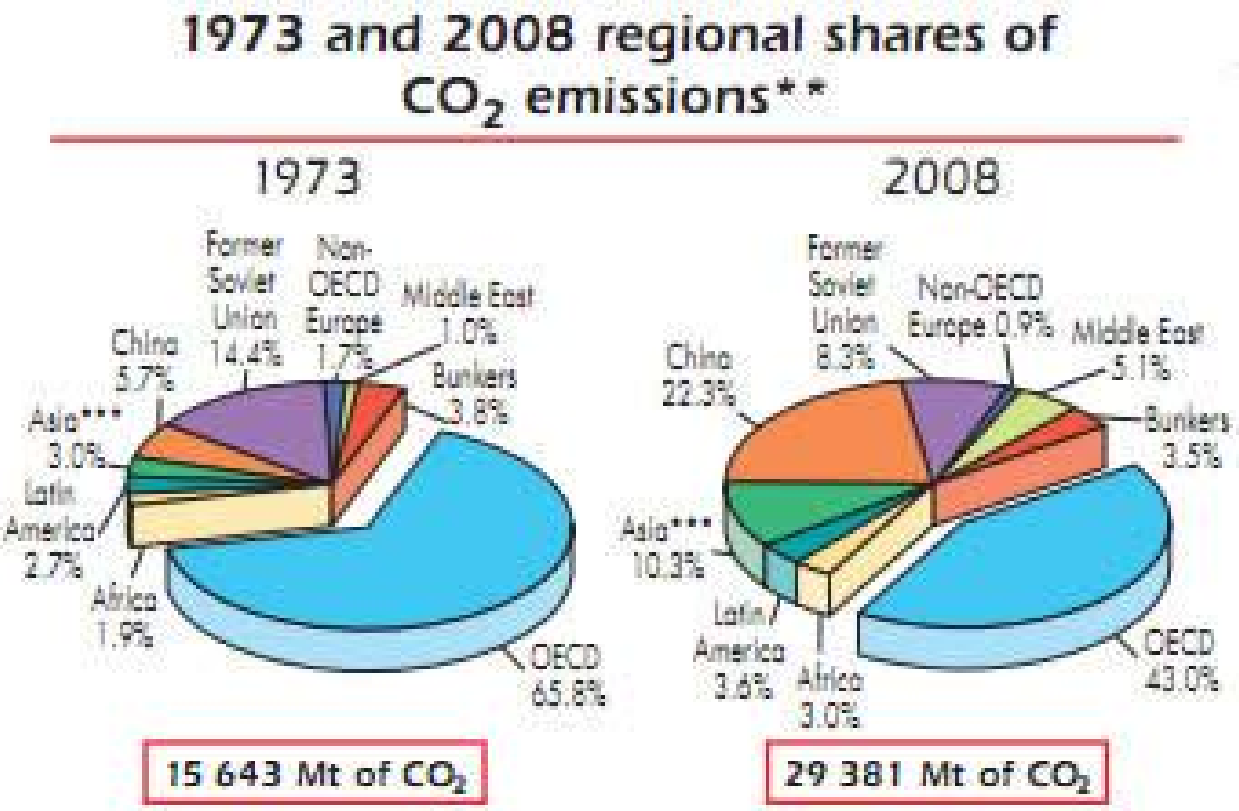
Asked about the mix of global energy sources in the next 10 to 20 years, Khong said developed countries will become more energy-efficient, as the “inexorably rising demand” for oil from large developing countries such as Brazil, Russia, India and China will fundamentally change the demand and supply dynamics of energy commodities.

“Everyone is ramping up plans to develop this or that. The point is that in future we’re going to need all of them,” says Khong. “We’re going to see a much more variegated energy mix going forward because every element will be required to supply what we anticipate will be a ramp-up in demand. We already see that happening,”

“And what’s going to happen and has to happen is greater energy efficiency in the developed world. Not that the developed world will not grow but the developed world will begin to grow in a much more energy-efficient way … It will use, in absolute terms, rather less oil and gas than it is currently doing at the moment.”

Finding solutions

Towards that end, the IEA’s Tanaka says some US$23 trillion, that is, half of the required investment in clean energy technologies should be spent on reducing CO2 emissions from the transportation sector. He says investments in ‘green’ vehicles such as electric cars, fuel cell and hybrid vehicles are necessary to reduce greenhouse gases.



However, he acknowledges that up to 90 per cent of the investment capital will have to come from the private sector. While governments have a role to play in encouraging such ‘green’ investments by providing tax incentives, governments ultimately play a very small role from the investment standpoint, adds Tanaka.
Furthermore, businesses have to focus on the progress of clean energy technologies around the world, especially in emerging economies such as China.

“So what kind of technology prevails in this market, what kind of transportation (technology) prevails in this market decides the global industrial activity,” says Tanaka. “What happens in these economies is the key for future competitiveness or industrial activities.”

So will it be possible to secure an international standard carbon trading and pricing system?

“It is possible, but we need international agreement on carbon trading or carbon cap-and-trade,” he says. “So global agreement is the basis to make this global system,” adding that this could take place regionally without a global agreement. “Already, Europe is testing this approach.”

Asked whether he is an optimist about global climate change or is kept awake at night thinking about it, Tanaka responds with a laugh. He says he is cautiously optimistic about the global environment, pointing out that countries at the Copenhagen Climate Summit in 2009 pledged to reduce greenhouse emissions. Together, they amount to 70 per cent of the necessary level of greenhouse gas reduction in 2020, which is “quite significant,” says Tanaka.Even so, greater efforts and more investments are needed to combat climate change, as much of the required reduction of carbon emissions will be needed after 2020 in order to halve global carbon emissions by 2050.

“We have to be encouraging in that direction as much as possible,” says Tanaka.

This article was written by Kevin Tan based on interviews for INSEAD Knowledge at Singapore International Energy Week which took place October 27-November 4, 2010.

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