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Distinguished Guests

Ladies and Gentlemen

The big news for the last couple of days has been the fact that the world population has reached 7 billion. This is supposed to have occurred yesterday or within the last couple of days. And we know that Asia plays host to a significant portion of this population.

2 The other key trend is the fact that we have now reached a point where half the world's population lives in cities. Obviously the consumption patterns of energy and resources in cities are going to be different from that of rural areas. Asia's rapid development also means that there will be even greater thirst for energy. And we know economic growth in emerging Asia is three times more energy-intensive than that of OECD economies, and in fact 28% more carbon-intensive.

3 Asia's energy demand has grown more than 30% since the turn of the millennium, which was just 11 years ago. China's energy demand has doubled in 10 years, and the latest figures put its annual consumption in excess of 2 billion tonnes-of-oil-equivalent (toe). Its fuel mix is still 66.5% coal and oil, 17.2%, in other words, still to very large extent fossil fuel dependent.

4 But at the same time, China also has the world's largest installed capacity of hydropower, the largest solar use for water heating, and has the largest capacity of nuclear power generators under construction, and has the fastest growth in wind power development. If you look at India, it puts its consumption at about one third of China, 620 million toe. 42% of its fuel mix is made up of coal, with 26% coming from traditional renewable sources and waste.

5 What all this shows is that there are trends of increased consumption, but these are some interesting trends that are preparing us for the future. And as you can see, hundreds of millions of people make the transition from rural to city, from poverty to the middle class and we are living in a point of great inflection.

6 The first point I want to make for today is that the investment decisions that are made in the energy field today, will have long-term implications. Just think about it - a thermal plant running on oil will have a lifespan of 20-30 years. We know that there have been coal plants that have been operating in excess of 50 years. A 500MW coal plant will

release more than 150 megatons of carbon over its lifetime, and also with varying amounts of sulphur, soot and other pollutants.

7 So the point is, depending on the choices of individual governments, spread out across the world today, our choices of technology will have implications on sustainable development, on fossil fuel use, on carbon emissions for the next three to five decades.

8 The second point I wanted to make was that, as we talk about progress, it is not just about technology alone. We need science and technology because new answers to old questions will need to emerge from that field. It is also dependent on government policies, primarily on the politically challenging point of getting the right pricing and making rational policies in place for the long-term rather than short-term political benefits. And in particular how the next elections are being fought, and I think Malaysia's is next year, in the next one to three years.

9 Even as we see a convergence of rising prices in fossil fuels and greater cost reductions in clean energy, this transition could still take many decades, due to the long lock-in periods of investments that we make. There is also the problem of continued subsidies of local production and consumption of fossil fuels. Last year, I believe, governments and taxpayers across the world spent half a trillion dollars on subsidies and the point I want to make here is that subsidies actually distort the economy, distort consumption and is not actually the right thing to do in the long term.

10 Just as we encourage the right pricing of fossil fuels, we also need to be mindful of what would create greater distortions even as we try to correct the original imbalances. Let me give you an example of that. As some governments seek to provide subsidies or incentives for bio-fuels - in some places that has also led to deforestation in order to have more plantations; in some cases it has also diverted agriculture in food into fuels. And because of the law of perverse outcomes, sometimes it has led to more carbon released into the atmosphere or higher fuel prices and greater economic difficulties, particularly for the people in the developing countries who are least well-off.

11 The issue of pricing must also take into account externalities. And really, the big problem for the last two centuries has been the fact that we have been able to achieve economic growth without paying for the externalities. In the past, we never had to pay for the pollutions of the seas, the degradation of our rivers and water resources. We never had to pay for polluting the world's atmosphere. We never directly had to pay for the health consequences of a degraded environment or the people in a community.

12 So, in a sense, industry has had a free ride in the last two centuries but because they are now reaching a resource constrained, more crowded and more interconnected world, those externalities are no longer free and all those ----- pigeons are coming back to roost. So, one big issue of externality is how we set the correct prices, so that even as rational economic decisions are made, the correct prices are paid. One big problem right now is the whole issue of deciding what is the correct carbon price.

13 There are different methods which have been offered in order to try and get the correct estimate of that. The different methods include trying to quantify the social environment and the health cost of pollutants and carbon in the atmosphere, and then therefore deciding on what the carbon tax should be. Another method is to put an absolute restriction on the volume of emissions, treat carbon space as a property in which future rights to emit can be allocated or traded - that's why the idea of carbon regime comes about. Or create a common organisation, a global organisation which will bind all of us, to specific targets and commitments.

14 But we know, and I can tell you, the climate change --negotiations which will be held this year in Durban will not be able to arrive at a global, multilateral, rules-based, legally-binding ----agreement. There isn't the political will and there isn't the financial resources to make such a deal stay. And basically, the biggest emitters in the world are too busy with their own problems, too worried about dealing with competition from each other in order to arrive at a collective position and make common sacrifices in order for us to act properly

15 So, where does that leave us? In the case of Asia, renewable energy accounted for approximately half of the estimated 194 gigawatts (GW) of new electric capacity added in 2010. The point I am going to make, is that despite the difficulties on the global level, Asia is actually making steady progress in sustainable clean energy. Clean energy investments in this region increased by 33% to \$82.8 billion in 2010. Asia and Oceania accounted for about 44% of the total new-build asset finance going into utility-scale systems and in 2009, clean energy investment in Asia outstripped that of Europe in the midst of the global financial crisis.

16 Now let me turn to a much smaller place in Asia called Singapore. We are just 700 sq km, and if you take the entire Singapore and fit it into New York City, there would still be room to spare. We, unfortunately, compared to our neighbours have got no natural resources, no oil, no gas, so we are entirely dependent on fuel imports for powering our economy. But notwithstanding our energy disadvantaged position, I would put to you that Singapore, in fact, has a very interesting example. Let me just give you one statistic. Our fuel mix - we used to use 80% fuel oil, or 80% of our electricity used to be generated from fuel oil. This was just 11 years ago. Today 80% of our electricity is generated from natural gas, courtesy of course, of our neighbours Malaysia and Indonesia.

17 But here's an interesting point --this transition to a cleaner fuel occurred without any subsidies. In fact, all that we did was to liberalise our market, have a competitive energy market and then allowed technologies and companies and fuel mixers to compete. And this current situation that we have now is an unsubsidised outcome that is incompatible with market logic. Even without subsidies, but having an open competitive market, we can have good outcomes and progress.

18 We also had to look at the demand side of the equation. And here we have had one big advantage. Because we have never subsidised energy, the government is not

caught in a political bind which many other governments have elsewhere, of how to withdraw subsidies from cooking oil, fuel, kerosene, diesel, without hurting the less well-off members of our society. Because we have no subsidies on fuel, on electricity, people in Singapore are motivated to conserve and to avoid wastage. And therefore one of the key strategies for coping with climate change has been to push energy efficiency.

19 My ministry and its statutory board, the National Environment Agency, continues to build capacity to train and educate people, to also ensure that the mix of products are available in our marketplace. People know which air-conditioners, which fridges and which cars are energy efficient and then because they know, they are going to pay the full cost of it and are motivated to make the right consumer decisions.

20 Our goal in Singapore is to reduce our energy intensity, that is, energy used per dollar of GDP generated, by 35% from 2005 levels by 2030. We will achieve this through an optimal mix of measures which includes standards, incentives and education, focusing on energy efficiency, making ourselves attested for new technologies, eschewing non-sustainable subsidies and just providing a level, competitive playing field.

21 I want to end with a quotation from Sheikh Al-Naimi, the Saudi Oil Minister which played a key role in the early years of OPEC. And he said, "The Stone Age did not end for lack of stone." Similarly if you think about it, the oil age will not end because of lack of oil. What this means is that change comes, sometimes surreptitiously, and it doesn't come at a time when you think everything has ended, but we may be in such a point of change. It is very important for those of us in government as well as all of you in the enterprises and running companies and making multi-billion dollar investment decisions, to understand that. We need to position ourselves in the future; but at the same time, not prematurely and not ideologically, but in a way which is rational, forward-looking and takes into account both the opportunities as well as the business threats that confront us.

22 So I thank you all for being here in Singapore and for contributing to the conversations on this very important topic and to join the dots between energy, food, water and ultimately the health and vitality of human needs on our one planet, Earth. Thank you all very much.