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**PRE-COP AFRICAN ENERGY MINISTERIAL, JOHANNESBURG, 15 SEPTEMBER 2011**

**Dinner Keynote Speech**

Honourable energy ministers, your excellencies, distinguished guests, ladies and gentlemen. It is a great privilege to be able to address you at this important event in the run-up to the Durban climate meeting this December.

Bonjour mesdames et messieurs ministères, bonjour à tous les délégués distingués francophones. Je voulais bien parler en français mais ils ne me l'ont pas permis. Donc j'espère que vous m'excusez si je continue en Anglais !

When Director General Yumkella invited me to speak at this dinner, I immediately accepted, not because I think I have such great pearls of wisdom to share, but because I thought it would be a wonderful opportunity to pay a long-overdue trip to Africa and to learn about what is going on in your energy sector. And so it has been.

Like a lot of you, I spend a large proportion of my time on the road, visiting countries at different stages in the world's historic transformation to a clean energy infrastructure – whether it be Singapore, Korea and Japan, where I will be next week, or China, the US, Latin America or Europe, where I spend most of my time. Let me draw on those experiences and provide a few observations on what I have been hearing here over the past few days.

First of all, I am delighted that it is so well understood that solving Africa's energy problems is not a separate challenge from achieving any other development goals. It is inconceivable that Africa could achieve universal access to sustainable energy without at the same time making enormous progress on poverty, hunger, education, health, and gender equality. Of course at a meeting of energy ministers, energy was always going to be positioned as the number one priority; but I have been struck over the past two days by the extent to which your departments' plans are integrated with your countries broader development priorities. This is correct on all levels – and this is how it must be.

I agree too with the need for coherent energy planning, which was voiced by many of the panelists today and by the presenters at the UNIDO technical training day which took place yesterday. Energy assets have long life-times, you cannot expect an optimal system to emerge from a series of ad-hoc decisions, or from decisions made in the absence of analysis. Nor can you expect funding from investors who don't have confidence in a clearly-stated and consistent direction of travel.

I also agree that planning needs to take place on a regional basis, not just country-by-country. Nowhere else in the world has such a vast scale of resources as Africa. Nowhere in the world has such enormous pent-up demand. But they will not always be in the same places, so it is vital to think ahead about how you will move energy around your continent – whether in the form of gas, fuel, or electricity. From

China to Texas, investment in wind farms has run ahead of the ability to get the resulting power to market – I urge you not to make the same mistake.

Some further observations on what I have been learning. I am afraid I have been struck by the gap between the level of aspiration in the ministers' speeches, and the more pedestrian outcomes described in the technical presentations. The ministers talked expansively about wind, solar, geothermal, hydro, biomass and energy efficiency. They talked about nothing less than empowering their economies and their people by making step changes in the availability of clean energy. But the presentations by those doing the actual energy planning on the whole showed much more modest, incremental progress. Will Africa add a GW here or a GW there, will it manage to add 30GW or 40GW by 2020, will solar provide 1% of the continent's energy by 2030, and so on.

As we heard, China is adding 1GW of capacity every week! Germany added 9GW of rooftop solar PV in 2010 alone! What is wrong with this picture?

I don't want to minimise the effort required for a clean energy revolution in Africa. Of course there are enormous hurdles. But you are riding the cusp of not one but two revolutions: the awakening of Africa as an emerging market, with growth rates which we in the developed world can only dream of in the next few years; and the clean energy revolution.

The accepted wisdom is that clean energy may be nice in theory, but in practice it is prohibitively expensive, so it is a rich man's indulgence. Wrong!

We already know that hydro and geothermal energy provides some of the lowest cost base-load power in the world.

Have we really internalised the fact that the cost of solar photovoltaic power has come down by 70% over the past three years? Costs now start at 17 \$US cents per kWh. African electricity consumers are paying an average of 18 \$US cents per kWh, and that is only where they have access. Where they don't, they are spending \$8bn per year on kerosene for lighting – at an equivalent cost of around 50 \$US cents per kWh! Of course there are problems of access to finance, where the answer lies in funding entrepreneurs to deliver solutions that work today, and of course the presence of widespread electricity subsidies complicates the picture, and has to be addressed.

Throughout the continent people are using diesel generators – and though the generators might be cheap, the diesel certainly isn't. In New York in April we honoured ten of the most innovative clean energy and clean water companies in the world. One of them was a Kenyan company called WinAfrique, which is building wind / solar hybrid micro-grids to power telecoms towers and agro-processing plants. They are not getting any subsidies, not even CDM credits – their solutions are self-funding because they eliminate diesel use.

When it comes to wind, the best wind farms are producing electricity cheaper than natural gas, and cheaper than coal-fired power stations, right now. In the recent round of energy auctions in Brazil, wind developers bid to build wind farms and supply power at a cost of 6.2 \$US cents per kWh – below the cost offered by gas-powered projects. Does Brazil have better wind resources than Africa?

Sticking with Brazil, nearly half of the cars run on bioethanol from sugar cane – at a cost equivalent to less than \$50 per barrel of oil. If you could get the same productivity per hectare of sugar here as in Brazil, you could produce 19 billion litres of ethanol, 25% of the world market, without using a single extra hectare of land. You could export it; you could use it here. It would be your choice, you would be in control.

All of these examples, where clean energy is competitive with fossil power today, work even before you add in the negative impact of carbon emissions, or the health impacts of burning fossil fuels, or the cost impact of security for pipelines and infrastructure, or the human impact of tragedies – which we should all take a moment here tonight to remember – like the gasoline fire in Nairobi last week, or the

environmental impact on your rivers, deltas and coastlines of the persistent spills which seem to be such an inevitable part of the oil industry.

The fact is that in many cases clean energy is competitive with fossil fuels, right here, right now – whether you are talking big projects to provide power to cities and industry, or distributed solutions and micro-grids for rural areas. If anyone doubts the cost figures, Bloomberg New Energy Finance gets real-time data from a large proportion of the world's producers and developers, that's our role in all this - information.

And, ladies and gentlemen, the economics of clean energy are going to continue to improve rapidly. By 2020 we forecast that solar prices will have halved yet again. Wind prices will have dropped by another 25%. Batteries for electric vehicles and grid-scale storage will have come down by 50%. The cost of managing intermittency of renewable energy will have come down by 75%. The cost of an LED light-bulb, which uses 10% of the power of an incandescent bulb, will have come down 90%. The cost of next generation biofuels will have halved. Even the cost of geothermal power and small-scale hydro will have come down further.

The pace of technological developments in the energy sector is picking up, not slowing down.

I know that ice hockey is not exactly the national sport of many African nations. But I want to quote a great Canadian ice-hockey player, Wayne Gretzky, who was asked the secret of his success. What he said was this: "Good players play where the puck is. Great players play where the puck is going to be." Of course the same principle applies in other sports, like soccer, or rugby – I hope the Springboks are listening as they clearly need to up their game if they are to win the World Cup this time! But the same principles also apply to energy planning: don't plan where the technology is today. Plan where it is going to be tomorrow – and it is moving faster than we all think.

In most of the forecasts for Africa's energy mix by 2030 or 2050 which I have seen here over these past few days, clean energy has been conspicuous largely by its absence. It is vital to address this as a matter of urgency.

As you all know, the UN has designated 2012 the International Year of Sustainable Energy for All. What better way to prepare for the year than to present energy plans that reflect the true potential of clean energy in your countries' future energy mix. There are plenty of agencies out there in the donor community who can help – IRENA, the IEA, IAEA, UNIDO, the multilateral banks – just make sure they take into account the real potential contribution of clean energy, and don't let them underplay it.

In the first six months of this year, renewable energy contributed 21% of Germany's electricity. Does Germany have more sun than Africa? Does Germany have more wind? Does Germany have your hydro resources? Your geothermal resources? Of course not! But what Germany has, is money.

So let's talk about money.

Worldwide, investment in clean energy increased from around \$50 billion in 2004 to \$240 billion in 2010. Investment in clean energy generating capacity nearly outstripped fossil capacity and nuclear combined. Over the same time period, investment in clean energy in Africa increased from just \$300 million, to \$4.5 billion in 2010. So the cup is half full, half empty. On the one hand investment in clean energy in Africa increased by a factor of 15 in 6 years, but on the other hand Africa is still attracting only 3% of the global total.

This has to change.

We heard of the past few days that Africa requires around \$40 billion per year in order to achieve its energy goals. That's three to four times recent investment rates, and a 10 times increase in clean energy investment. And that may be a low estimate. So we are not talking about incremental changes here. Energy finance in Africa needs its own revolution, to match the other two revolutions I mentioned earlier – the revolution in Africa's economic fortunes and the revolution in energy technologies.

Each time the question of finance came up over the past few days, we heard how private finance has to play an enhanced role. But my observation is that each time, private finance was positioned as supplementing public finance. Private finance as dessert, not private finance as the main course. If you are to achieve your ambitious goals for energy provision over the next twenty years, it will only be done if at the same time the leading role shifts from public finance, where it lies currently, to private finance.

Even today, after the financial crisis, even after this year's renewed financial crisis in Europe, the world's fund management industry is sitting on over \$100 trillion in funds: venture capital funds, private equity funds, hedge funds, sovereign funds, pension funds, life insurance funds, debt funds, equity funds, mezzanine funds, infrastructure funds, real estate funds. You name an asset class, there are managers out there with funds to deploy. The entire cost of dealing with climate change – mitigation and adaptation – is estimated to require investment of \$1 trillion per year – 1% of the money currently being managed by the world's fund managers.

Somehow we have to find a way of getting those fund managers to deploy some small proportion of their funds to solve Africa's energy challenges.

There are, however, two big differences between attracting money from these private investors and from multilateral or bilateral development banks.

First, private investors care almost exclusively about the returns they can achieve on a risk-adjusted basis. With very few exceptions, they don't weigh environmental considerations in their investment decisions. Or social considerations. Or a host of other outcomes that all of us here tonight value so highly. It's not because they are bad people – in many cases it is because they are not legally allowed to do anything other than maximise returns for their investors on a risk-adjusted basis.

And that word – risk – is absolutely critical. Each of these providers of private finance is concerned above all with managing risk. It's not that they reject all risk, some of them will take on risks which they understand well – so for instance a venture capitalist will take technology risk, and a debt fund manager may take inflation risk – but none of them will take risks they don't understand or can't quantify. If a risk can't be measured and entered in a spreadsheet, then the investor will walk away. Then many private investors are not even allowed to take risks even if they want to: most pension funds cannot invest in instruments that do not have investment-grade ratings from the ratings agencies.

The second big difference between private finance and public finance is that private finance always has alternatives. They don't have funds earmarked for investment in the African energy sector, burning a hole in their pockets. If they don't see good opportunities on a risk-adjusted basis in Africa, they can invest in Latin America or Asia. If they don't like energy they can invest in telecoms, or in retailers, or extractive industries.

So if you want to attract private funding, if you want to triple the amount of money flowing into energy solutions for your countries, for better or for worse, those are the rules of the game.

This also has profound implications for the sort of outcomes that you should be looking for in Durban and in your energy plans. In Copenhagen the developed world committed \$100bn of annual climate-related investment by 2020. In Cancun there was an agreement that a new Green Climate Fund would be set up to handle a significant proportion of these funds. A big part of the agenda in Durban will be about agreeing a format for this fund. You heard that from the UNFCCC Director today in her recorded message.

I am very concerned that there is an expectation that the Green Climate Fund will look like a really big World Bank Fund, a sort of huge version of the existing climate funds. There is an understanding that private finance will play some role, but it is again being positioned in a subordinate, supporting role – private investment as dessert, not as main course.

This would be a disastrous outcome. I really hope that the Transitional Committee working on the fund

design and the negotiators in Durban take into account some unfortunate realities. The reality of the political cycle in the US, Australia, Europe, Japan. The reality that there is a real question-mark over the solvency of European countries – not just Greece, Portugal and Ireland, but Italy and even France.

The developed world remains committed to funding climate solutions in the developing world. There is no backsliding on that commitment. But we must be realistic and understand there will be no \$100 billion annual flow of public funding, nor anything remotely like it in the foreseeable future. There will be no taxation of airlines and shipping, no universal carbon tax, no tax on financial transactions. I see little point in designing a Green Climate Fund to manage \$100 billion a year of fantasy money which will not materialise for many years, if ever.

There is an alternative, and that is to construct a climate finance system which has private finance at its heart, where private finance is the main course, and concessionary funding is dessert. In which private financial institutions work shoulder-to-shoulder with the development finance institutions to fund the African energy revolution we all so fervently want to see. I have spelled it out in a white paper for anyone who wants more detail.

My final observation on what I have been learning over these past few days: there is enormous cause for optimism. I am in no doubt that the African clean energy revolution is already underway, because I hear of gathering momentum in countries the length and breadth of this beautiful continent.

Whether it is Morocco, looking to develop 6GW of wind, solar and small hydro by 2020. Or Egypt, with a target of 7.2GW by 2020, and over 0.5GW of wind already commissioned. Or Kenya, where developers are working on Africa's biggest wind project, and have a pipeline of another 1.4GW of projects in wind, geothermal and hydro. Or ethanol projects in Mozambique, Zimbabwe and Sierra Leone. Or, of course, South Africa, where Minister Peters has been working tirelessly to help the country's energy supply catch up with its economic growth, and with its aspirations for prosperity within a low-carbon future.

Each of these projects will do more than feed vital power or fuel into Africa's energy infrastructure. Each of these projects also leaves a legacy of skills and knowledge, relationships and templates for further projects in future. Success breeds success.

These are truly exciting times. At the end of our careers, when we look back on the next decade, I hope we will be able to say, paraphrasing the great English poet William Wordsworth: "bliss it was to be alive, but to be an African energy minister was very heaven!"

Thank you Director General Yumkella. Thank you Minister Peters. Thank you honourable ministers, ladies and gentlemen.

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