

CHECK AGAINST DELIVERY

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION



Energy, Development and Security

**Lecture by Kandeh K. Yumkella,
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to

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at the

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Dr. Nowotny,
Dr. Schüssel,
Excellencies,
Ladies and Gentlemen,

It gives me great pleasure to join you here today at the National Bank of Austria to discuss energy in the context of development and security, and to present UNIDO's Industrial Development Report 2011, entitled "Industrial energy efficiency for sustainable wealth creation: capturing environmental, economic and social dividends". This new report stresses that sustainable energy production and consumption is essential in overcoming many of the major challenges the world is facing today, and is very much in keeping with the topic of today's lecture.

From the Age of Plenty to the Age of Planetary Boundaries

But before I introduce the report, let me frame the picture for you more broadly.

[SLIDE: THE AGE OF PLANETARY BOUNDARIES]

Spurred by what Fareed Zakaria calls "the rise of the rest", the period from the beginning of the 1990s to around 2007 was a modern day age of plenty. The world economy grew from \$22.8 trillion to \$53.3 trillion –the fastest pace in nearly four decades. Income per capita across the globe rose at a faster rate – 3.2 per cent – than in any other period in history. And global trade increased by 133 per cent. Thanks mainly to the emerging economies such as China and India, manufacturing was ramped up inexpensively and we could enjoy nearly two decades of continuous non-inflationary growth. This rapid economic growth and dramatic expansion of global trade resulted in unparalleled prosperity for a wide range of countries, as well as a marked reduction in poverty in many more.

Then came the financial crisis, a tectonic shock that brought the age of plenty to a sudden halt. Jeremy Rifkin has suggested that pressure on the availability of natural resources, especially energy, was one of the main triggers of the financial crisis. What is clear is that from 2007 onwards the received wisdom that the world economy could continue to expand

indefinitely was brought into sharp relief. We have now entered an “age of planetary boundaries” in which we will witness continued constraints on our natural resources over the next half century and beyond.

I do not mean to be alarmist. From Malthus to the Club of Rome, concerns about the resources and the limits of growth have been expressed in good faith but generally proved wrong. The difference this time however is the projected steep rise in the ranks of the middle class in the years to come: current estimates are that three billion more consumers will join the global economy within the next two decades. McKinsey recently released an insightful report that recognizes both the challenges and the opportunities that stem from this.

According to McKinsey, we can expect increasing price pressure on commodities: there has already been an increase in real commodity prices of almost 150 per cent since the beginning of the century. Meanwhile food prices are already at an all-time high, threatening food security in many parts of the world. The oil that we all depend on no longer comes cheap – a trip to the gas station makes that clear, but so too does the information that over the last two decades there has been a 100 per cent increase in the average cost of bringing an oil well into production. Looking ahead, an eighty per cent rise in steel demand is expected by 2030.

McKinsey stresses that this age of planetary boundaries calls for new thinking and new approaches. The race is on to boost resource supplies, overhaul their management, and change the game with new technologies. Above all, McKinsey concludes, countries and businesses will need to strive for vastly-improved resource productivity.

A resource-constrained world therefore also provides opportunities, and not just for the rich countries. As Bob Zoellick of the World Bank has noted, there is great future potential for the African continent as a demand centre. What is important to bear in mind however is the need to link the global agenda on resource use and wealth creation to sustainability, equity, and inclusiveness.

[SLIDE: OUTLOOK FOR WORLD ENERGY DEMAND]

The industrialized world has already begun to take steps to deal with resource constraints, and energy constraints above all. Many have taken steps to link their foreign policies with

their energy policies. In the last number of years, Germany and Norway have worked together to explore the connection. The United Kingdom took the issue of climate change, including the impact of competition for energy and water resources, to the Security Council in 2007. And at the close of 2011, the U.S. State Department established a new bureau of energy resources, which will focus on maintaining stable supplies of affordable energy, promoting green technology, and expanding access to electricity to the 1.3 billion people worldwide who currently live without it.

The U.S. and others understand that expanding access to energy and diversifying the sources of energy is a multidimensional issue. It is important for domestic industry, for exports, for stability. In fact, without major policy change, the international community will face three major challenges in the decades to come: energy security, energy access and climate change.

[SLIDE: ENERGY POVERTY]

Energy poverty

1.3 billion people, or one quarter of the human race, are without access to electricity. A further 2.7 billion people rely on traditional biomass – such as wood, charcoal and dung – for their energy needs. This is clearly an unacceptable and unsustainable situation.

These people are imprisoned in poverty through lack of energy access. There is virtually no hope for them to break the cycle of deprivation, reliance on basic subsistence agriculture, and dependence on short-term aid, without access to energy. Sub-Saharan Africa is the region most affected, with the lowest rates of energy access, capacity per capita and electricity consumption per year.

[SLIDE: EARTH AT NIGHT]

The image on screen puts this across as no words can. Sub-Saharan Africa practically fades away into the background against the bright lights of Europe, North America, South and East Asia.

At the recent launch of his Sustainable Energy for All campaign, the UN Secretary-General Ban Ki-Moon described it energy as the “golden thread” that runs through all parts of the development and sustainability agenda.

While energy services, by themselves, are not sufficient to eradicate poverty, they are necessary for creating the conditions for economic growth. Energy access can improve productivity and enable local income generation. Modern lighting can extend livelihood activities beyond daylight house. Once access is established, modern energy services help reduce cost for poor communities, because of the inefficiency of traditional biomass. In addition, with 95 per cent all food requiring cooking to be eaten – modern cooking fuels contribute to reducing hunger and food insecurity while also reducing environmental degradation.

Energy access also has a major impact on important developmental topics such as education, health, and gender equality. Women and girls in many developing countries spend a large proportion of their time collecting wood and carrying water: time lost for schooling and revenue-generating activities. Furthermore, indoor air pollution from low-quality biomass imposes a major health burden on those who spend their days close to the cooking area – again, mainly women and girls. Believe it or not, more than 1.5 million people per year die from such pollution.

Sustainable Energy for All

Excellencies,

Ladies and Gentlemen,

[SLIDE: SE4All]

While the world needs much greater access to energy to fuel economic growth and create a more secure international community, at the same time we urgently need to reduce global energy-related carbon dioxide emissions that threaten our prosperity and stability.

This is why the UN General Assembly designated 2012 as the International Year of Sustainable Energy for All. As I mentioned, the Secretary-General has launched a global

initiative with the same name. With the help of UN-Energy – the inter-agency mechanism of which I am chair – and the United Nations Foundation, this initiative is engaging governments, the private sector and civil society globally with the single aim of achieving sustainable energy for all through three inter-related energy goals to be reached by 2030:

[SLIDE: SE4All Goals]

- Ensuring universal access to modern energy services
- Doubling the rate of improvement in energy efficiency
- Doubling the share of renewable energy in the global energy mix

The Secretary-General recently launched a High-level Group on Sustainable Energy for All, which I am honoured to co-chair together with Charles O. Holliday, a global business leader and Chairman of Bank of America. This is a multi-stakeholder group with strong private sector participation. It aims to promote the International Year of Sustainable Energy for All and to campaign for the integration of the energy goals into the global development agenda.

The High-level Group is working on an action agenda to be launched at the United Nations Conference on Sustainable Development, or Rio+20, in June of this year. It will be a “living document” that establishes clear actions and commitments over time that will dramatically shift current energy system pathways onto new trajectories. Rio+20 represents a unique opportunity for our interdependent world to secure renewed political commitment to sustainable development. The energy revolution must be a cornerstone of that commitment.

[SLIDE: IMPLICATIONS OF ACHIEVING UNIVERSAL MODERN ENERGY ACCESS]

Initial steps to meet basic needs do not entail significant climate impacts. For example, the International Energy Agency (IEA)’s recommended threshold of 100 kilo Watt hours (kWh) per person per year, even if delivered through the current fossil fuel-dominated mix of generation technologies, will increase greenhouse gas emissions by only around 1.3 per cent above current levels.

[SLIDE: ACHIEVING SE4All]

There are important synergies between the three objectives to be reached by 2030. Modern energy services are more efficient than biomass, and the acceleration of energy access will also contribute to a more rapid reduction in net energy intensity. Increased energy efficiency allows existing and new infrastructure to reach more people by freeing up capital resources to invest in enhanced access to modern energy services. Similarly, energy-efficient appliances and equipment make energy services more affordable for consumers – residential, commercial and industrial. Likewise, any serious vision of a sustainable energy future requires strong commitment to renewables.

[SLIDE: KEY ROLE OF NATURAL GAS]

The impact of the foreseen increased energy consumption can be reduced through energy efficiency and a transition to a stronger reliance on cleaner sources of energy, including renewable energy and low-greenhouse gas emitting fossil fuel technologies, such as a shift from coal to natural gas.

[SLIDE: ROLE OF GAS]

Natural gas will have a key role to play, at least as a transitional fuel towards clean, sustainable energy. Due to new technologies and techniques there has been a rise in the availability of gas, putting downward pressure on prices in many parts of the world.

Universal modern energy access should not have any significant impact on energy or climate security. Providing global energy access to sustainable energy is not a luxury, but a necessity. It will help to lift millions out of poverty and to make progress on preventing dangerous climate change.

While each goal is worth pursuing independently, there are clear synergies in pursuing all three as part of an integrated strategy. Although ambitious, these goals are achievable, partly because of technology innovations and emerging business models, and partly because of an ongoing shift in international funding priorities towards clean energy and other energy issues.

There are also precedents for the widespread provision of both energy access (for example in China, Viet Nam and Brazil), and for dramatic improvements in energy efficiency (such as in

Japan, Denmark, Sweden, China and the State of California) that demonstrate the feasibility of achieving both goals. What is now required is a sustained political focus. These subjects must move up the political and development agendas to become a central priority.

Financing will be a key issue. It has been estimated that the capital investment required for “basic human needs” levels of access – \$35-40 billion per year to 2030 – represents only around 5 per cent of the total global energy investment expected during this period. While even more people need access to modern fuels for cooking and heating, the capital costs of closing this gap are substantially lower than for electricity.

For energy efficiency, we estimate that on average \$30-35 billion of capital is required for low-income countries and \$140-170 billion for middle-income countries annually until 2030 above the IEA’s reference case. In general, most energy-efficiency investments are cost-effective. In practice, however, costs of energy efficiency are typically mostly front-loaded, with the benefits accruing over time, and low-income countries often have access to limited and expensive capital, which they prefer to invest in the cheapest options available to attain their energy goals.

This is also a challenge for many consumers – residential, commercial and industrial. Financial support in terms of innovative financial structuring such as concessional loan finance, loan guarantees and other financial instruments, supplemented by other market mechanisms, helps to address the risks and barriers, and leverages private capital.

Ensuring these capital flows will require the creation of long-term, predictable policy and regulatory frameworks to mobilize private capital. Within this context, major opportunities to enhance private participation including implementing more public-private partnerships (PPPs) that have the potential to accelerate deployment of technologies that improve energy efficiency and/or enhance energy access, especially on the basis of low emissions.

Successful PPPs could catalyze a scaling up of funding for research, development, and commercial demonstration of low-carbon and efficient technologies and systems. A focus on developing lists with bankable projects, establishing regulatory policies that improve country investment attractiveness, and supporting human and institutional capacity development will be the critical first steps in both areas.

Linking these goals to the broader development agenda will be a key factor in their success. As Member States gather in Brazil for the Rio+20 conference, they will also be looking beyond 2015, the deadline for the achievement of the Millennium Development Goals. At this stage, there is a growing feeling that, while the MDGs achieved much in the concentrating on human development, there is an urgent need to rebalance the development agenda in the direction of economic growth and sustainability. Energy will clearly be at the heart of this.

Excellencies,

Ladies and Gentlemen,

The potential risks of getting our energy policies wrong are considerable; numerous conflicts have occurred as a result of competition for resources. You simply have to open a newspaper or switch on the television to see that the relationship between energy and security is behind so many of the news headlines today. In fact, one of the first major global stories of 2012 concerned the removal of fuel subsidies in Nigeria, and the ensuing strikes and protests that brought the country to a standstill. I have to say, the impact of those strikes was made real to me at a very personal level, when members of my family became stranded in Nigeria en route from a visit to my home country of Sierra Leone.

[SLIDE: GAS FLARING]

This picture illustrates what happens when energy policy goes askew in a resource-endowed developing country. People in the Niger Delta live among an abundance of oil, yet have suffered disappointing development outcomes.

[SLIDE: NIGER DELTA]

The exploitation of what should be a boon for the region has instead led to environmental catastrophe and violent uprisings. The Movement for the Emancipation of the Niger Delta has grown out of this misalignment of the energy-security-development nexus.

[SLIDE: UNEP ASSESSMENT OF OGOINI LAND]

Last year, UNEP released an assessment of the environmental impact of fifty years of oil operations in the Ogoniland region of the Niger Delta. The environmental restoration of Ogoniland could prove to be the world's most wide-ranging and long term oil clean-up exercise ever undertaken if contaminated drinking water, land, creeks and important ecosystems such as mangroves are to be brought back to full health.

Of course, this is not unique to the Niger Delta. Many resource-rich countries end up being worse off than their resource-poor neighbours. As both experience and evidence have shown, the exploitation of hydrocarbon resources does not automatically lead to equitable growth. History provides many examples, particularly in the case of developing countries, where oil and gas-rich economies have found it extremely challenging to transform resource revenues into competitive and diversified economic growth. Many developing countries with abundant resources have failed in development and have even regressed in the face of phenomena described as the “resource curse” or the “paradox of plenty”.

Energy can underpin growth and development, but only with carefully considered and implemented policies. In essence, converting the resource boom to lasting prosperity depends critically on the quality of a country’s institutions and the economic strategies it adopts.

Industrial Development Report 2011

Excellencies,

Ladies and Gentlemen,

[SLIDE: IDR 2011]

It is against this background that I wish to introduce the new edition of UNIDO’s flagship publication, the Industrial Development Report 2011, which is one of our main contributions to the Sustainable Energy for All initiative.

The report reiterates that in a world of seven billion people, we must take into account industrial energy efficiency if we want to address such challenges as green growth,

employment generation, security, climate change, food production and poverty reduction. The report demonstrates that industrial energy efficiency is essential for strengthening economies, protecting ecosystems and achieving social benefits.

With the massive shift in manufacturing to emerging and developing economies, greening global industry requires energy efficiency in those countries too. In 2008, energy-related greenhouse gas emissions in developing countries exceeded for the first time those in developed countries.

The report also makes clear that there is a strong “business case” for energy-efficient investments. The potential energy savings from the best available technologies total roughly 30 per cent of today’s global industrial energy consumption and 6 per cent of total energy use worldwide. Universal adoption of best practice technologies could yield annual savings in energy costs of \$65 billion in developed countries and \$165 billion in developing countries, corresponding to 23 per cent of total energy costs.

The Industrial Development Report is backed by a set of unique statistics on Manufacturing Value Added (MVA), manufacturing export trends, and other key indicators. It also presents UNIDO’s Competitive Industrial Performance Index, which ranks economies worldwide according to multiple indicators of industrial performance.

Excellencies,
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Just like the successful campaigns in the public health area, our campaign on Sustainable Energy for All will catalyze action on the ground, help ensure political prioritization, and place energy high up on the development agenda. This is our once-in-a-generation chance to make the energy, development and security nexus work for the good of all mankind.

Thank you.