



*Ministero
dello Sviluppo Economico*



ENERGY MINISTERS MEETING 2009

ENERGY STRATEGIES TO RESPOND TO GLOBAL CLIMATE CHANGE: A UN-ENERGY PERSPECTIVE

Statement by Dr. Kandeh K. Yumkella, UN-Energy Chair and Director-General, UNIDO

G8 Energy Ministers' Meeting
Rome, May 24-25, 2009



UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANIZATION

Energy Strategies to Respond to Global Climate Change: A UN Energy Perspective

Statement by Dr. Kandeh K. Yumkella,
UN Energy Chair and Director-General, UNIDO

Excellencies,

It is a great pleasure for me to be here today to join you all in this important discussion on **energy strategies to respond to global climate change**.

This is a topic that I believe is vitally important for all of us. We all are aware of the fact that this meeting is taking place against the backdrop of a crowded global agenda in a world undergoing rapid change. We have an unprecedented economic and financial crisis adding greatly to the vulnerabilities already caused by the previous food and fuel crises. We have increasing ecosystem degradation and growing energy poverty. And, we also have increasing security concerns coupled with the serious challenges of climate change that threaten the environment and the well-being of millions of people around the world.

The main question that is being asked by every one at almost every forum I



have attended in recent few months is: How can we can find a way to turn the current economic challenges we face into an opportunity to put energy strategies and the climate security agenda on the right track ?

There is no doubt that global living conditions have improved markedly during the last few decades. Yet, there are still some 1.6 billion people that have no access to electricity. And, some 2 billion use traditional biomass for heating and cooking. Ensuring access to energy is a major component of the development challenge. Echoing the sentiments expressed by Dr. Pachauri, IPCC Chair, who in a recent meeting, called “energy a missing Millennium Development Goal”- in our view, it’s time to take a strategic approach to meet the twin objectives of energy access and the climate change agenda.

Let’s acknowledge that an enormous amount of work has occurred to date in the area of energy. And, in this process the lessons we have learned have been significant. The governments and organizations present at this meeting have all been working hard to find solutions to global energy issues. They are complex and require us all to work together and find viable solutions.

The bulk of the economic growth and the related growth in energy use in the coming decades will be concentrated in developing countries. This fact suggests that for global climate action to be effective, it has to be based on an unprecedented level of cooperation between the major economies of the world and the developing countries.

For developing countries, energy access, energy poverty and energy for economic growth remain top priorities. Higher energy prices are often politically unacceptable. This results in a challenging environment to introduce clean energy technologies and associated policies.

The deployment of clean energy technologies is essential to meet any realistic aspiration to mitigate climate change. Many of these technologies are well understood and available today. But they cannot be considered in isolation. Their successful uptake depends on a favourable environment as well as on a wide range of strategic approaches. This also includes a careful weighing of their total costs and benefits. From the perspective of UN energy and my own perspectives, let me try to list what I feel are a few major priorities at this stage.

Energy Efficiency and Productivity

More than half of the energy related CO₂ emissions reductions that will be needed in the coming twenty years can be achieved through accelerated energy efficiency gains. In our opinion, this is the least-cost and least risky way to meet climate change goals. Efficiency can enhance productivity and the competitiveness of economies, while helping to alleviate energy poverty as energy becomes more accessible. Energy efficiency gains will lower costs for the economy as a whole, enhance the security of supplies, and reduce the need to develop new sources of energy. As an example, building renovation and new infrastructure projects that can raise energy efficiency and productivity can generate jobs and help re-ignite growth.

However, despite decades of laudable efforts in many countries the uptake of energy efficiency in many parts of world is not occurring on the scale and at the speed necessary to meet energy security, energy access and climate change goals. Significant efficiency potential remains untapped, both at the process and the energy systems levels.

If we are to have a realistic chance of achieving the global goal of halving energy intensity by 2030, compared to 2005, then we need to consider a number of approaches. One approach is to develop targeted standards and regulations which focus on specific pieces of equipment in specific sectors. Such policies have been successfully applied in some countries for decades and their use should be widened. But the fact that in using this approach efficiency gains for the economy as a whole are relatively low in the developed OECD economies suggests that this method alone is not sufficient. Also, co-benefits and transaction costs play a key role in energy investment decisions. But they are not well understood and documented. Only through improved understanding can more effective instruments be developed. We may also have to consider approaches which amount to 'structural change'. Although, the term 'structural change' is politically sensitive, we have reached a point where this may be needed. In the final analysis, a global coordinated

effort is needed so that energy efficiency can play a role that is in line with its potential.

Towards a CO₂-free power sector

According to various industry sources, total investments in power generation were about 200 GW during the last year: 40% of these investments were in coal fired power plant, 15% in gas, hydro, and wind; 10% in nuclear and 5% in other types of energy. So, in terms of investments, 45 to 50% of additions to capacity are already CO₂-free. However, this percentage needs to be raised to nearly 100% – worldwide. This action is urgent and a drastic change in investment patterns is needed in the next two to three decades to support this requirement.

According to the latest REN 21 Report, annual renewable energy investments touched \$120 billion in 2008, and the installed capacity of new renewable energy grew to 280 GW. This excludes more than 600 GW large hydro capacities. Many new milestones in renewable energy markets and policy were achieved in 2008. Most notable was the fact that for the first time, both the United States and the European Union added more power capacity from renewables than from conventional sources (including gas, coal, oil, and nuclear) in 2008. Although, the renewable energy sector initially weathered the financial crisis in late 2008 better than many other sectors, renewable investment did experience a downturn in the first quarter of 2009. This requires immediate attention. To ensure that we move towards a CO₂ free power sector, investments in the renewables sector needs to remain high for markets to continue growing.

While most attention will remain focused on CO₂-free power supply technologies, the issue of grid integration also remains of critical importance. High shares of variable renewables will require a grid that operates in very

different ways: so-called 'smart grids' built on information technology, as well as grid hardware innovations such as new types of transmission lines and electricity storage equipment.

De-carbonizing energy in end-use sectors

Another strategy that will gain importance for the long-term is the substitution of fossil fuels in end-use sectors. Various forms of renewable heat, solid and liquid biofuels and biofeedstocks for materials, a switch to CO₂-free electricity and hydrogen are the options available. In industry, 'Carbon Capture and Storage' (CCS) can also play a very important role.

While most attention has focused on solar power generation, production of low temperature heat using solar collectors is a well established technology in many countries, with 145 GW thermal capacity worldwide. The key challenge is to deploy this technology more widely. The potential is huge, especially in developing countries. For biomass, a key issue is how to use scarce resources in the most efficient, effective and sustainable way. More emphasis on second and third generation biofuels is needed for a massive expansion of biofuels use.

For a number of industrial processes such as iron and cement making, CO₂-free electricity is not a feasible fuel substitution option today. The role of solar thermal energy is limited to low-temperature heating applications. This leaves biomass and CCS. Industrial CCS has not yet received the same attention as CCS for power plants. In our view, more effort needs to be put into industrial CCS. CO₂-free electricity can play a very important role as a substitute for fossil fuels in buildings and industry on a long term basis.

The needs of developing countries and emerging economies are often different from those in industrialized countries. The resource endowment differs, the energy demand structure differs, the skill levels are often lower and capital is scarce.

Dissemination of new technologies in emerging economies requires more than just exporting hardware, solving intellectual property rights or establishing a new financing product. Capacity building is needed to develop local supply and servicing chains, build expertise in the operation and maintenance of equipment, build awareness for new technology options, and the provide workable financing mechanisms. For example, many efficiency projects are small. As a result, banks are often not interested because of the higher transaction costs associated with smaller projects. Experiences with bundling of projects and ESCOs are mixed. A key requirement is for careful designs that fully take into account local circumstances. In many cases, technology needs to be adapted for local conditions. For example, climate conditions, scale or operations, resource quality and mode of operation differ widely across countries. This is an area where the UN has been working for many years. And, where there are important lessons to be drawn from this experience.

UN Energy

Let me now turn especially to UN Energy.

A key concern for the UN remains how to strengthen the energy cooperation with LDCs and industrializing countries. This is a major challenge. As some of you may know, UN Energy is a Group of 20 UN Agencies and programmes - that today constitutes the United Nations system-wide mechanism for coordination and greater coherence of action on energy. As Chair of UN Energy, it is my prime objective to strengthen the UN system's response to the challenges that the world is facing in a rapidly changing environment, where energy and climate security issues have become defining moments of our times.

Our current work builds on three pillars – Energy Access, led by UNDP and WB; Energy Efficiency ,led by UNIDO and IAEA; and, Renewable Energy ,led by UNEP and FAO. We are working on normative issues on energy efficiency in partnership with ISO, IEA, REEEP, Lawrence Berkeley National Lab, International Institute for Applied System Analysis and other key international

organizations and research institutions. We are also focusing on key issues related to the renewable energy development in partnership with GBEP, REEEP, and other institutions and agencies. Two key areas of attention are technology transfer and financing issues.

We are also developing operational activities in partnership with the Global Environment Facility (GEF), UN Foundation and other partner agencies. Together with GEF, UN Energy has developed a large GEF Strategic Programme for West Africa. This covers 18 countries with a particular focus on access agenda. While the GEF has agreed to provide US \$ 46 million as a grant, we need support to mobilize an additional US \$ 100 million as co-financing for the successful implementation of this strategic programme on energy for some of the poorest countries in West Africa.

Let me also mention here that a framework for international technology cooperation in the field of energy is also emerging. It includes elements such as IPEEC (energy efficiency), IRENA (renewables), the Asia-Pacific Partnership (aluminum, cement, steel and power generation), the Global Carbon Capture and Storage Institute (GCCSI), the International Energy Agency (efficiency indicators and technology roadmaps), the International Energy Forum and a broad range of other initiatives. Governments have chosen for a decentralized thematic technology-focused approach instead of a centralized initiative. These efforts are very welcome but it is important to make sure that the coverage is comprehensive. We are convinced that UN Energy, the cooperation framework of UN agencies, can serve as an important focal point for promoting energy strategies in response to global climate change.

Energy use and the related CO₂ emissions is a topic of rapidly increasing importance for industry worldwide. As a specialized UN agency, UNIDO has been expanding its activities in this area significantly. We have emphasized energy efficiency in small and medium sized enterprises and the supply of renewable energy to enhance access and industrial activities. Trade issues related to biofuels and new industrial development and trade opportunities through the shifting attention for energy are also a key part of our work.

Excellencies,

To conclude, in our view, increased efficiency and de-carbonization of energy could help achieve the Millennium Development Goals. And, at the same time, this approach could help resolve many other challenges from energy poverty, energy access and security to climate change.

Promoting the opportunities – and not just the challenges – for wider deployment of low-carbon, energy efficient technologies must be a major priority for an acceptable agreement to be struck in Copenhagen. This is particularly true for many developing country UNFCCC Parties. For them, economic development is a first priority and these technologies can be pivotal in ensuring their success.

A balance must be struck between short term and long term efforts. In the short term, energy efficiency is a major priority. The energy access agenda needs to go hand-in-hand with efficiency gains. In the short-term, more investment in new technology is also needed to enhance performance and reduce cost.

In the long term, development of efficient low-cost clean technologies, especially renewable energy, constitutes a top priority. While a carbon price signal is vital for technology change, it is an insufficient driver for the changes required. We need a comprehensive approach linking issues such as technology dissemination, investment, international cooperation and trade issues. The key to developing and deploying mitigation technologies will be good policies and regulatory frameworks, working with well-trained and well-networked people and organizations, and within vibrant markets for products and services.

The financial resources that are needed are huge. And, in the case of 'mitigation', the resources required amount to hundreds of billions of dollars annually. These needs are much higher than what is available today from the current levels of ODA and from the public sector. Unlocking the skills,

innovation, and enthusiasm of the private sector to come up with innovative financial solutions will be essential for a successful energy transition that is beneficial for both developed and developing countries.

In our view, reducing energy intensity reductions and introducing new clean energy technologies could be pursued as an integral part of Nationally Appropriate Mitigation Actions (NAMAs). A cornerstone of the proposed new approach could be a globally uniform monitoring, reporting and verification system for energy efficiency and technology transition that could be supported by the UN system along with other partners.

We look forward to the strong leadership and support of the G8 Ministers of Energy in successfully moving ahead our global energy and climate agenda. Thank you for your kind attention.