

Nuclear energy in the 21st Century

Keynote speech by Angel Gurría, OECD Secretary-General, at the International Ministerial Conference on Nuclear Energy in the 21st Century

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Ladies and Gentlemen:

It is a great honour to open this International Ministerial Conference on Nuclear Energy. It is also a privilege for the OECD Nuclear Energy Agency to co-sponsor this Conference. I wish to thank both our hosts, the International Atomic Energy Agency and China, represented by the Ministry of Industry and Information Technology and the Atomic Energy Authority, for convening us today to advance on our common goal: to secure clean and peaceful nuclear power for the 21st century.

The global crisis has exposed not only the paramount challenges of today's global economy and the remarkable level of interdependence among our nations. It has also confronted us with our duty to define the kind of global economy we need for tomorrow. It is our responsibility to devise sound policies for a stronger, cleaner and fairer global economy. Clean and affordable energy, including access to safe and secure nuclear power, should be a central element of our efforts. This is essential not only for a sustainable economy, but also for the future of our planet.

The crisis has prompted us to act immediately and in concert. Take the example of our hosts, the People's Republic of China. In the face of the economic slowdown, they responded rapidly and in a comprehensive fashion. Importantly, they increased government spending, stimulated domestic demand and are looking into effective ways to enhance social policies. The turmoil showed that China and all of us need to be more involved in international economic co-operation. We are profoundly affected by the policies implemented by each of our countries. There is no better example than energy to illustrate our interdependence. Holding this meeting in Beijing shows the importance China places in international co-operation and recognises the role China could play in designing clean and safe energy solutions for the future.

For me, coming to Beijing is also an opportunity to stress the high significance of the OECD partnership with China. Our Organisation is now more open and plural, welcoming new members and having launched an "enhanced engagement" process with the most important emerging economies. Forging a more structured and stronger partnership with China is fundamental in such a process. It is based on our mutual interest to develop global solutions to global challenges, such as nuclear energy in the 21st century.

Thus, I urge you to look into three important issues, which we should address in the years to come. Namely: security, financing and development of nuclear energy.

1. Nuclear power: energy security and sustainability

Sustainable growth cannot be fully restored without secure access to energy and electricity. However, the way we have produced and used energy so far is not sustainable. Carbon releases resulting from fossil fuel combustion need to be reduced drastically in order to avoid global warming. Local and regional air pollution induced by burning coal and using petroleum has reached unprecedented levels in many countries. The depletion rate of natural resources, such as oil and gas, needs to be controlled for the sake of future generations. At the same time, the access and price of electricity for the most vulnerable of the world need to be kept at a level compatible with the overall reduction of poverty and the achievement of the Millennium Development Goals.

Our obligation to future generations is to address these challenges of energy security and sustainability today. Therefore, we need to advance on many fronts: policy design and implementation, effective regulation, full recognition of the negative impact of carbon emissions, and ensuring the security of supply. Clearly, the development and commercial deployment of low carbon or carbon-free energy sources are essential prerequisites for the achievement of sustainable energy policies.

Nuclear energy should be a part of such a better future; but only if we can reconcile its development with social and environmental concerns. Cleaner, carbon-free sources will also help to respond to growing energy demand. Projections suggest that by 2030 energy demand in the world will increase by 45% and electricity consumption by 75%. Nuclear energy has the potential to meet a significant part of future demand, while reducing tensions on hydrocarbon markets and alleviating the risk of global climate change.

However, the management of radioactive waste is an important concern for governments and society at large. The volume of waste is small but its radio toxicity is high. Making progress towards the construction, commissioning and operation of repositories for all types of radioactive waste should fully address this concern, and in a manner that enhances public confidence.

In the nuclear domain, the role of governments goes beyond setting national energy goals. Governments should work together with private stakeholders to enhance the effectiveness of regulatory regimes and to ensure that the nuclear industry keeps safety and environmental protection as its highest priority. International organisations such as the OECD/NEA and the International Atomic Energy Agency (IAEA) are supporting national and multilateral efforts on this direction; such as the Multinational Design Evaluation Programme (MDEP).

Another crucial challenge that governments have to address is finance.

2. Financing energy development: the role of nuclear power

Today, compared to other sources of base-load electricity, notably coal and gas, nuclear-generated electricity is very competitive in most countries. Since the cost of uranium amounts to only about 5% of the cost of nuclear-generated electricity, the latter is very stable and this long-term stability is an important asset for electricity-intensive industries. In their efforts to mitigate the economic and social consequences of the present economic crisis, governments may rely on nuclear energy to enhance the competitiveness of domestic industries and underpin economic growth.

Financing nuclear plants and fuel cycle facilities is, however, an issue. The current generation of reactors is very capital intensive and takes a long time to build. This involves risks which may be difficult for private investors to accept. The current crisis is adding to the challenge of financing the nuclear power industry, as well as wind and solar projects.

However, the financing of carbon-free energy facilities will bring along opportunities to create new businesses, new industries and millions of new jobs. Governments can facilitate investments in the sector by ensuring a stable regulatory regime and avoiding undue licensing delays. Furthermore, specific measures, such as loan guarantees, public-private partnerships and other innovative means to finance nuclear facilities and to mitigate risks for developers of new technology, should also be explored.

Currently identified uranium resources are sufficient to fuel nuclear power plants for many decades, while production capacities are distributed in a broad range of countries. In addition, strategic stocks could be accumulated easily and at low cost. Looking beyond a few decades, advanced nuclear systems capable of breeding fissile nuclear fuel could become commercially available. Fast neutron reactors under development can reuse fissile and fertile materials retrieved from spent fuel of all reactors. They could multiply by 50 or more the lifetime of uranium resources and eventually bring nuclear energy into the family of renewable sources.

Ensuring adequate financing for the development of such innovative technologies should be a priority as a

matter of energy security. Our ideas and achievements addressing this issue should be shared with emerging economies. Let's not forget that today only three countries — France, Japan and the United States — have 57% of the world's nuclear generating capacity, and that nearly 74% of the increase in global primary energy needs between 2005 and 2030 will happen in developing countries.

3. The way forward: a challenging agenda for governments

In the long-term, there will be no single “solution” to providing abundant, clean and affordable energy. Expanding nuclear energy, as a part of the energy “mix” for the future, requires collective action by governments, researchers and the private sector. This is not only a challenge, but also an opportunity to revive the economy. Our success will depend on our capacity to address technical challenges, to invest in nuclear science and R&D, and to find new ways to work, plan and design in a more co-operative manner.

We will have to provide not only adequate infrastructure but, most importantly, human resources. Highly-trained scientists, engineers and skilled crafts people are in short supply. The Steering Committee of the NEA alerted governments to the importance of qualified manpower for the success of nuclear energy programmes.

While the industry is actively involved in nuclear R&D, governments should continue supporting research and long-term projects. Innovative nuclear systems responding to the requirements of the 21st century are often conceived and designed within international frameworks. The Generation IV International Forum (GIF), for which the NEA is serving as Technical Secretariat and the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO) led by the IAEA are examples of such international endeavours. Our host, China, takes part in both projects and has comprehensive R&D programmes, in particular on high temperature reactors and fast neutron systems.

Ladies and gentlemen,

The current global trends in the energy sector are unsustainable as they prepare a dirty, unsecure and expensive future. We must work together towards a system of energy supply with much lower carbon intensity. There is no “silver bullet” and it is essential to keep all low-carbon energy options open and to avoid idolising or demonising any technology.

In this context, it seems crucial to reconsider the role of nuclear energy and to drop its exclusion from the flexibility mechanisms of the Kyoto Protocol. Indeed, nuclear power can provide clean energy in a safe and cost-effective manner. We have two main challenges in this respect: to increase public confidence that high-level radioactive waste will be safely managed in the long-term and to ensure more political and regulatory stability in order to reduce business risks and facilitate decision making by investors. Governments have a major role to play in these two areas.

Nuclear energy can play an important role in the energy mix for the 21st century. Joining forces to allow nations safe and secure access to nuclear power is critical to rise to the challenge of energy security. Intergovernmental organisations such as the OECD are providing a framework for effective international co-operation. Today I would like to state clearly the commitment of the OECD Nuclear Energy Agency to continue supporting collective action for safe, emissions-free, low-cost nuclear power.

I am confident that the Conference will be a major milestone in the roadmap for safe and effective nuclear energy programmes in the 21st century. I thank you for your attention and wish you fruitful debates.