



The Voice of OECD Business

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Considering Nuclear Energy: A BIAC Discussion Paper

Prepared on the occasion of the OECD NEA 50th Anniversary

I. Introduction

BIAC congratulates the OECD Nuclear Energy Agency (NEA) on its 50th anniversary and we welcome the release of the NEA's first Nuclear Energy Outlook report.

BIAC holds the view that all types of energy, including nuclear, should be considered as a possible means towards ensuring the reliable supply of energy. In this statement, we raise many key business issues that policymakers should take into account when designing policy frameworks that encompass nuclear energy. BIAC stands ready to provide more focused guidance on NEA, OECD, and International Energy Agency (IEA) work going forward in this respect.

II. Global challenges – consider all energy options

Nuclear power should be considered as one of the many potential sources of energy when designing national energy policy frameworks: it should not be unduly discriminated against, nor should it necessarily be perceived to constitute a “one-stop-shop” for all of a country's energy needs (thus potentially jeopardising national energy security). BIAC holds the view that all energy options need to be considered in order to maximise the flexibility necessary for long-term security of supply. We encourage governments to design energy policies based upon complete and balanced cost-benefit lifecycle analyses such that the ability of countries to address global challenges is strengthened, not weakened, by changing reliance on nuclear energy. The OECD and its sister organisations continue to contribute towards such analyses.

The recent international political interest in nuclear energy is largely due to the increasing impact of at least three major global challenges: energy security, increasing energy demand, and climate change. Currently some 35 reactors are under construction around the world¹, marking what is being reported as the start of a significant period of new build. Globally,

¹ IAEA (2008) Power Reactor Information System database

some 30-35 are planned to come online within the next 10 years, and there are tentative plans for over two hundred in the longer term².

Nuclear energy appears attractive to many governments as it releases virtually no greenhouse gases (GHGs), provides significant and continuous base-load electricity generation, and minimises dependence on imports of fossil fuels from potentially unstable regions. Moreover, nuclear power is becoming increasingly cost-effective as fossil fuel prices have risen and remain high, and evidence indicates that nuclear energy is currently the most competitive of the available base-load technologies. However, many governments also hold concerns with respect to issues of waste, safety and security, which in cases need to be more adequately addressed.

III. OECD Business considerations for nuclear energy policy frameworks

While nuclear power's possible role in helping to address many of the aforementioned global challenges should not be underestimated, its full potential is contingent upon a variety of factors that policymakers should consider. BIAC would like to take this opportunity to flag certain such factors from the perspective of OECD business.

a. Investment

The building of a nuclear power plant requires sizable investment over several decades, taking into account the initial construction cost, the operating and management cost, the eventual decommissioning cost, and the waste storage cost. For countries that are looking to expand their use of nuclear power, investment policy issues will be of critical importance.

Investment costs are very significant. In the EU-15, for example, plans for nuclear energy investment between 2000 and 2030 are estimated to cost in the region of €600 billion³. The private sector will play a major role in nuclear new build, particularly in countries where business and industry will be taking the lead in new build projects.

Investors in nuclear energy therefore require a predictable and enabling policy framework essential for long-term investments. Pre-construction periods, in which permits are secured and planning approvals are sought, should be kept as short as possible by increasing the efficiency of government procedures, while still maintaining a sufficient degree of public engagement in the projects for which the permits have been asked. This will help reduce initial costs and therefore encourage investment. In addition, all countries should encourage more open foreign direct investment for nuclear energy, like for other sectors, as this can substantially reduce the costs to be borne by a single country while also serving to promote economic growth.

² World Nuclear Association (2008), Nuclear Renaissance.

³ Business Europe (2007) Briefing: Promote a secure, competitive and climate-friendly energy system: Keep all energy options open, including nuclear.

b. Safety and security

Operational safety and security are key priorities for the nuclear industry. As technology advances, it is important that safety and security aspects are provided that include maximum protection from human errors, as well as countering terrorism or criminal attacks, aircraft crashes (intentional or not), sabotage, corruption and proliferation. Aside from the possible health impacts on workers and citizens as a result of exposure to radiation, even accidents which bear no impact on human health can lead to public outcry and severe financial losses. In addition to standard safety precautions, such as regular environmental monitoring and remote handling equipment, industry also encourages nuclear power plants to be transparent in the public reporting of faults or accidents. The Nuclear Events Web-Based System (NEWS)⁴, for example, has proved successful in this regard.

Policy frameworks should recognise that nuclear reactors are not homogeneous, and their safety and security features vary according to factors such as age, design, size, monitoring and maintenance, in addition to any external geopolitical risks present in the area. Less-advanced nuclear reactors still in operation should be renewed or replaced by designs that meet current safety and security norms. International collaboration and increasingly open trade and investment are key elements towards ensuring progressively safer and more secure nuclear power. In our view, the OECD, IEA and NEA have central roles to play in encouraging broad-based national policy coordination towards this objective.

c. Waste

Waste storage is one of the most contentious issues facing nuclear energy. BIAC supports the view that long-term final storage solutions for radioactive waste will relieve future generations from the burden of maintaining temporary storage solutions. All options for final storage should be considered, and policy decisions should be based upon issues such as safety, security, equity, environment, and national laws.

Stakeholder dialogue discussions regarding specific plans for deep geological repositories are essential towards site-selection. We thus welcome the valuable work of the NEA Forum on Stakeholder Confidence. In our view, the peer-learning approach in the OECD organisations significantly assists countries to adopt best practices towards determining a successful policy approach for final waste storage, and such efforts should be encouraged.

d. New technologies

Advances in nuclear energy technologies could significantly change the landscape of nuclear energy policy and energy policy frameworks as a whole. The nuclear industry, for example, supports plans for small- and medium-scale reactors (SMRs) that could bring base-load electricity to local regions in certain countries where they are not connected to the national electric grid. This can help provide economic growth to disadvantaged areas. On the

⁴ <http://www-news.iaea.org/news/default.asp>

other hand, however, the increased number of smaller plants entails security issues which need to be addressed, as it represents an increase in the number of targets for potential sabotage or theft of nuclear materials.

Generation III reactors yield new benefits, such as enhanced safety and security, greater electricity production, reduced waste, and longer operating lives. Generation IV reactors intend to bring further improvements, and many will be able to more effectively respond to constantly varying energy needs on a daily basis, therefore increasing energy efficiency.

There may also be alternative commercial uses of nuclear power beyond the production of electricity, such as hydrogen production, desalination, and also district heating. Moreover, it is possible that countries will in the future come to be able to fully harness nuclear fusion for commercial use.

In our view, continued technological development has strong potential to greatly enhance nuclear energy's ability to meet energy needs in a manner that is increasingly safe, secure, and accepted by society. It is important to establish a general energy policy framework that incentivises funding towards the commercialisation of those research projects that are expected to lead to economically-viable and effective technologies in the near future.

e. Human resources

The nuclear energy industry has experienced a drop in numbers of skilled engineers and scientists in recent years, particularly as nuclear new build stagnated in many countries and original employees who were hired in the 1960s and 1970s have come to reach retirement age⁵. In order to support the renewed international interest in nuclear energy and its forecasted new build, and in order to further address security and safety issues, BIAC encourages strong cooperation between educational institutions and the nuclear energy industry so that nuclear energy labour market needs can be most effectively met. In addition to continuing to supply skilled labour for the operation of nuclear reactors, new types of skilled labour will also be necessary as increasing numbers of reactors come to be decommissioned, and as more countries come to develop deep geological waste repositories. The OECD could play a role in projecting local area skills needs for nuclear energy.

f. Public acceptance

The degree of public acceptance of nuclear energy varies between countries and between sub-national localities. The crucial point, in our view, is that whatever public sentiment vis-à-vis nuclear energy happens to be, it should be based upon informed opinions derived from sound evidence and transparent information. As poll data suggests, large sections of the public know less about some of the basics of nuclear energy than many other forms of

⁵ See NEA (2007) "Statement by the NEA Steering Committee for Nuclear Energy regarding a government role in ensuring qualified human resources in the nuclear field", available at: <http://www.nea.fr/html/general/press/2007/2007-05.html>

energy. There is therefore a compelling need for clear and simple national educational campaigns to educate the public about the various energy sources. From the nuclear industry perspective, this would be an essential step towards fostering public trust. BIAC feels that the NEA can provide useful guidance to its members in this respect. Meanwhile, industry is also carrying out trust-building activities via increasing the transparency of its operations and developing good relations with local communities.

IV. The value of the NEA, OECD, and IEA

The NEA, with its seven standing technical committees covering all aspects of nuclear energy, is the only intergovernmental non-political nuclear energy organisation that brings together developed countries of North America, Europe, and the Asia-Pacific region to examine and address various technical aspects of nuclear energy. In our view, the unique value of the NEA and its close ties with the OECD, IEA, and the International Atomic Energy Agency (IAEA), enable the NEA to contribute valuable knowledge to national policy-makers, both among its own member countries and beyond. This helps ensure that national nuclear energy policy frameworks are built upon sound and broadly-accepted methodologies and evidence.

Nuclear energy, while being the specific *raison d'être* of the NEA, also depends in part on the work being carried out both in the IEA and the OECD on several cross-cutting issues. Recognising that the success of nuclear energy depends on a combination of different factors across several policy areas, BIAC encourages the Organisation and its sister agencies to continue to cooperate closely to ensure that their overarching policy messages are concordant and mutually-reinforcing. BIAC stands ready to provide focused OECD business expertise in support of the Organisations' work on issues relating to nuclear energy.