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European Union international cooperation to support peaceful uses of nuclear energy

Working paper submitted by Spain on behalf of the European Union

1. The European Union uses several of its financial instruments to support peaceful uses of nuclear energy around the world through its support to the International Atomic Energy Agency (IAEA) and through direct bilateral cooperation with third countries. These instruments support the objectives stated in the European Union's strategy against the proliferation of weapons of mass destruction of 2003, as well as the European Union's international cooperation activities in the fields of nuclear safety, security and research. The total amount of European Union annual funds allocated to these activities is in the order of at least €150 million per year. Part of this funding is used to finance projects implemented in third countries by the IAEA technical cooperation fund. Together with its member States, the European Union is the biggest contributor to the work under that fund. The main European Union financial instruments and programmes being used to support peaceful uses of nuclear energy are:

European Union instrument for nuclear safety cooperation

2. The European Union instrument for nuclear safety cooperation is expected to commit up to €524 million during the period 2007-2013. Priority fields of cooperation include support for third country nuclear regulators and operators, safety improvements in the design, operation and maintenance of nuclear installations, safety of nuclear material and radioactive waste management and measures to promote international cooperation. Priority geographic areas under the revised strategy 2010-2013 include countries of the Commonwealth of Independent States, countries with established nuclear programmes in Latin America and countries that are considering starting nuclear power programmes, in particular in South-East Asia, North Africa and the Middle East. China, India and African countries are other potential beneficiaries of this instrument.

3. The programmes funded under the instrument for nuclear safety cooperation provide for cooperation on nuclear regulatory matters, operational safety, design safety, radioactive waste management and decommissioning, off-site emergency



preparedness and safeguards. The instrument also provides for contributions to international funds, notably to those concerning Chernobyl and its shelter.

4. As regards cooperation with IAEA, a first project under the instrument was recently completed, namely the European Commission-IAEA-Ukraine joint project on safety assessment of Ukrainian nuclear power plants. About €12 million has been earmarked for new joint projects with IAEA during 2010-2011, including projects to assist the setting up of regulatory infrastructure in new emerging countries that have already decided or are about to decide to develop peaceful uses of nuclear energy. This cooperation is being implemented partly through the IAEA technical cooperation fund. It extends well beyond the European Union's immediate neighbourhood to support activities such as the Agency's contribution to the broader initiative on the remediation of uranium mines in Central Asia, the "Asian Nuclear Safety Network" and projects in Latin America.

European Union instrument for pre-accession assistance

5. Under the instrument for pre-accession assistance, the European Union is providing assistance in the areas of nuclear safety and security and supporting specific projects to address the needs of candidate and potential candidate countries. As regards cooperation with third countries through IAEA, the volume of contracts signed under the instrument is expected to increase to €21 million in 2010. They will be used to finance a number of joint projects, including a regional programme in the Western Balkans aimed at improving the regulatory environment. An important project currently being funded is the "Vinča Nuclear Decommissioning Programme", which is designed to make safe and return to the Russian Federation the spent fuel from the Vinča research reactor in Serbia. This project is also supported by the United States of America, the Russian Federation and a number of EU member States.

European Union instrument for stability

6. The following interventions for cooperation with IAEA under the instrument for stability have been identified:

(a) support for a possible future low-enriched uranium fuel bank under IAEA auspices. The financing could comprise up to €20 million from the instrument for stability plus an additional contribution of €5 million via a European Union common foreign and security policy decision;

(b) support for the construction of a new IAEA safeguards laboratory for the analysis of nuclear material (up to €5 million).

7. The Group of Eight (G8) Global Partnership against the Spread of Weapons and Materials of Mass Destruction is a key forum for increased international cooperation against nuclear non-proliferation. Since 2002, the European Union has consolidated its cooperation with the Russian Federation and Ukraine in line with the priorities defined by the G8 Global Partnership at Kananaskis, Canada, and renewed at the G8 summit at L'Aquila, Italy, in June 2009. Euro 700 million have already been spent and another €900 million committed. About 20 per cent of these funds were spent on the redirection of weapons scientists in the former Soviet Union. Nuclear safety constitutes another essential part of the European Union

contribution, with substantial funds allocated for nuclear submarine dismantlement and storage.

8. The European Union continues to be an important contributor to the G8 Global Partnership. Under the instrument for stability, it plans to spend around €300 million with third countries on chemical, biological, radiological and nuclear risk mitigation during the period 2007-2013. Complementing the programmes on nuclear safety under the instruments for nuclear safety cooperation and pre-accession assistance, the G8 Global Partnership activities should include assistance on nuclear security, engagement of relevant scientists, export controls, border monitoring, illicit financing, biosafety, biosecurity and, more generally, illicit trafficking of nuclear and radiological materials.

European Union common foreign and security policy decisions to support nuclear security

9. Through individual contributions by European Union member States and through four European Union Council decisions in the framework of the common foreign and security policy, providing a total of €21.4 million, the European Union has become the major donor to the IAEA nuclear security fund. This fund is used, inter alia, to support the implementation of the Agency's nuclear security plan through its Office of Nuclear Security. The plan builds on existing international legal instruments and agreements to help States strengthen their nuclear security.

10. The grants provided by the European Union to the nuclear security fund have been used to support IAEA assistance projects aimed at strengthening the security of nuclear and radioactive materials in the Balkans, the Caucasus, Central Asia, the Mediterranean region, Africa and South-East Asia. Areas of assistance include legislative and regulatory assistance for the implementation of States' obligations under IAEA safeguards agreements and the additional protocols, strengthening physical protection of nuclear and radiological materials and strengthening States' capabilities for detection and response to illicit trafficking.

11. A fifth European Union common foreign and security policy Council decision that will extend the geographic scope of European Union support to the nuclear security fund by €10 million is under preparation.

European Union technical support to IAEA

12. IAEA bases its technical and scientific programme on contributions from the member State support programmes. In the field of nuclear safeguards, the European Commission cooperative support programme to IAEA started in 1981. It is operated by the European Commission's Joint Research Centre and its institutes at Ispra, Italy; Geel, Belgium; and Karlsruhe, Germany. Today the European Commission cooperative support programme ranks second out of a total of 21 IAEA member State support programmes, in terms of number of active tasks. The programme tasks provide IAEA with technology and expertise in many technical areas related to the effective implementation of safeguards verification measures, including the detection of undeclared materials, activities and facilities. In the field of combating the illicit trafficking of nuclear materials, the Joint Research Centre supports IAEA mainly in the areas of detection and nuclear forensics by providing technical expertise and offering training sessions for customs officers and experts from IAEA member States. Coordination of activities in the areas of forensics and detection

with IAEA and other major actors takes place regularly at the nuclear smuggling international working group and the border monitoring working group. The Joint Research Centre is co-chairing these two groups.

13. The European Union also facilitates IAEA verification tasks within the European Union, where the Commission's services (European Atomic Energy Community (Euratom) safeguards) act as the regional system for nuclear material accountability and control, and the Commission funds a significant portion of the safeguards implementation infrastructure used within the European Union by IAEA, thereby liberating IAEA funds. By sharing its safeguards know-how, the Commission also contributes to the development of IAEA methodologies, equipment and facilities. The design of the IAEA on-site laboratory in Japan, for example, benefited greatly from the experience gained during the design, construction and operation of the Euratom on-site laboratories.

14. The IAEA secretariat acknowledges the fruitful nature of the cooperation with Euratom safeguards, which enabled the implementation of integrated safeguards across all significant nuclear activities in the European Union's non-nuclear-weapon States in January 2010. The synergies arising from the optimal combination of classical and strengthened safeguards methodologies and techniques, including those stemming from the Additional Protocol, have provided for greater effectiveness and efficiency of IAEA safeguards in the European Union non-nuclear-weapon States. The implementation of integrated safeguards in the European Union provides a clear demonstration of the European Union's commitment to the application of the Additional Protocol.

Seventh Euratom framework programme for nuclear research and training

15. The seventh Euratom framework programme for nuclear research and training (2007-2011) supports research activities over a range of nuclear science and technology fields implemented via multi-partner consortia (shared cost) or directly by the European Union Joint Research Centre. Some of these activities are framed within specific international nuclear cooperation agreements with third countries, or oriented to developing new, more proliferation-safe designs of nuclear power plants in coordination with the work of the Generation IV International Forum.

Nuclear cooperation agreements with third countries

16. Euratom has negotiated nuclear-related cooperation agreements with the following third countries: Argentina, Australia, Brazil, Canada, China, India, Japan, Kazakhstan, the Republic of Korea, the Russian Federation, Switzerland, Ukraine, Uzbekistan and the United States of America. These agreements address various issues, including research activities (nuclear safety, nuclear research and fusion energy research), as well as other activities supporting peaceful uses of nuclear energy.

17. In the fusion research area, the International Thermonuclear Experimental Reactor project is a global project aimed at building and operating an experimental prototype reactor, in order to demonstrate the scientific and technological feasibility of fusion energy for peaceful purposes. The project is conducted under the terms of an international agreement between Euratom and six other parties (China, India, Japan, the Republic of Korea, the Russian Federation and the United States). As the host party, Euratom is the largest contributor to this international project and is

committed to providing about 45 per cent of the construction costs and 34 per cent of the future operation costs, while the other six parties provide the rest.

Generation IV International Forum

18. The seventh Euratom framework programme (2007-2011) includes research projects and activities to examine the potential of new nuclear systems, including more proliferation-safe designs of nuclear power plants. This research is closely aligned to the requirements and research and development road maps of the Generation IV International Forum. Fully ratified members of the Forum currently include Canada, China, France, Japan, the Republic of Korea, the Russian Federation, South Africa, Switzerland, the United States and Euratom.

19. The technological goals pursued in the six new nuclear systems under consideration include:

- Increased sustainability (optimal utilization of natural resources and minimization of long-lived radioactive waste)
- Industrial competitiveness
- Safety and reliability
- Proliferation resistance and physical protection

20. The technical secretariat of the Forum has been entrusted to the Nuclear Energy Agency of the Organization for Economic Cooperation and Development (OECD). The specific European Union contribution is either via in-kind contributions of specific deliverables from the Euratom shared-cost multi-partner projects or the research carried out by the European Union Joint Research Centre. The Nuclear Energy Agency keeps a record of the financial equivalent of all such contributions from the Forum members. Collaborative activities did not start in earnest until 2008, and contributions from all members are now set to rise significantly.
