

INTERNATIONAL AGREEMENTS

Signed by Secretary
Spencer Abraham

January 2001-December 2004

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**JOINT STATEMENT OF INTENT
BETWEEN
THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA
AND
THE MINISTRY OF ENERGY AND MINES
OF THE REPUBLIC OF PERU
ON COOPERATION IN THE FIELD OF ENERGY**

The Department of Energy of the United States of America and the Ministry of Energy and Mines of the Republic of Peru (hereinafter referred to as the Participants);

Having a mutual interest in collaborating in the fields of energy planning and policy analysis, natural gas regulation and markets, and energy technologies; and

Recognizing their mutual interest in creating an attractive climate for domestic and foreign private capital investment in the energy sector, and in establishing an efficient and environmentally sound energy infrastructure;

Hereby declare their intentions as follows:

1. The Participants intend to take the actions necessary in their respective countries to conclude an agreement between the Participants related to the development, application and sustainable use of conventional energy, energy efficiency and renewable energy.
2. Pending conclusion of that agreement, the Participants intend to initiate collaboration in the following areas:
 - Energy policy planning and analysis;
 - Use of natural gas for transportation and the development of the Clean Cities Program for Peru;
 - Natural gas markets, gas prices and deregulation; and
 - Distributed generation technologies using natural gas (such as fuel cells) as well as renewable energy technologies appropriate for rural electrification.

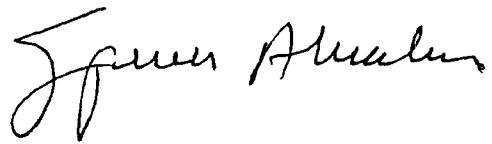
The Participants may add additional areas in the future. Collaborative activities may include technical assistance, exchange of information and experts, training support, and organization of joint workshops. In addition, subject to subsequent discussion and written agreement, the Participants may execute joint technical and economic feasibility studies, and joint demonstration of energy technologies.

3. Each Participant plans to appoint a Principal Coordinator to coordinate activities under this Joint Statement of Intent.
4. This Joint Statement is not intended to create legally binding obligations between the Participants.
5. It is understood that the Participants' ability to undertake the activities contemplated by this Joint Statement is subject to the availability of appropriated funds.
6. The Participants intend that the collaboration contemplated by this Joint Statement may commence upon signature. The terms of the Joint Statement may be altered at any time in writing. If either Participant desires to terminate its activities under this Joint Statement, it will give 90 days' written notice to the other Participant.

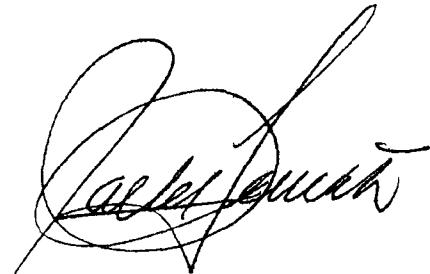
Signed at Mexico City, this 8th day of March, 2001.

FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA:

FOR THE MINISTRY OF ENERGY AND
MINES OF THE REPUBLIC OF PERU:



James Almendariz



Rafael Pacheco

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Fifth Hemispheric Energy Ministers Meeting
Mexico City, Mexico
March 9, 2001

Mexico Declaration

**Energy: A Crucial Factor for Integration and
Sustainable Development in the Hemisphere"**

The Ministers and Heads of Delegation of the energy sector of the countries that form the Summit of the Americas process met on March 9, 2001 in Mexico City to evaluate the progress achieved in the energy sector under the framework of the hemispheric integration process, and to define actions that support integration and sustainable development in the Hemisphere.

We recognize that the progress countries have made in cooperation and market liberalization, as part of their national strategies, provides a solid base for strengthening the process of hemispheric integration.

Furthermore, we support the efforts carried out by the Hemispheric Energy Initiative to stimulate dialogue and cooperation in such priority areas as the role of energy in sustainable development, and to identify and promote actions that have fostered regional and subregional interconnections through the development of energy sector projects, and we encourage greater efforts in these areas.

To solidify this progress, we agreed on the need to create and consolidate transparent and stable regulatory frameworks in order to establish a favorable climate for compatible development of the Hemisphere's energy sector.

The objectives of the Fifth Meeting were the following:

- Strengthen the ministerial dialogue;
- Evaluate the progress of the Hemispheric Energy Initiative and exchange ideas about its future direction;
- Receive and take note of the Steering Committee Report to the Fifth Hemispheric Energy Ministers Meeting, in accordance with the mandate from New Orleans; and
- Agree on the Message from the Energy Ministers to the Heads of State and Government who will meet at the Third Summit of the Americas to be held in Quebec City, Canada from April 20th to 22nd, 2001.

We conducted an open and comprehensive dialogue regarding the most important issues on the region's energy agenda.

We analyzed the evolution of the international petroleum market and its outlook for the future, and agreed that market stability is a decisive factor in the region's economic growth and development, given that market volatility can negatively impact our economies.

With respect to natural gas, we recognized its value as an environmentally sound energy source and agreed that investment in natural gas transport infrastructure has contributed to the increased use of natural gas in the region, creating a positive impact on the economies of the participating countries and on regional and subregional integration efforts.

We also agreed to support efforts to integrate oil pipelines between neighboring countries when proven economically viable.

With respect to coal, we recognized its role in the energy supply mix of the region and the need for the application of technologies that help reduce its environmental impacts.

With respect to the power industry, we recognized the challenges and opportunities in providing a secure and sufficient supply of energy to satisfy growing electricity demand in the region. We agreed that reliable supply is necessary to support sustainable development in our countries. We also agreed to promote and strengthen crossborder interconnections, in order to benefit from the resulting synergies.

We exchanged experiences related to the restructuring of the electricity sector in our countries and agreed that effective regulation and its application are key factors for successful reform. We recognized the fundamental role of the private sector in this process and the benefits that result from cooperation between governments and the private sector in this important area, for the development and well being of our societies.

We agreed on the need to promote the efficient use of traditional energy sources and foster the development and intensive use of renewable energy sources, taking into account the enormous resource potential available in the region.

We acknowledged the important contribution the energy sector has had and should continue to have in supporting efforts that address environmental issues, including climate change. As such, we recognized the role of access to and transfer of technology in addressing this challenge.

In order to achieve the objectives of the Hemispheric Energy Initiative, we decided to reinforce its strategy by redefining the subject areas of the Ad Hoc Working Groups, in order to reflect the principal challenges currently facing the Hemisphere's energy sector: energy and social development; energy and the environment; energy and integration; and energy and regulation.

We reaffirmed the importance of the Ad Hoc Working Groups as a way to identify common problems and propose specific cooperative activities to advance the Initiative's goals. As a result, we instructed the HEI Steering Committee to guide and review the activities of the Ad Hoc Working Groups so that they are carried out efficiently.

In order to create a favorable climate for advancing the objectives of hemispheric energy integration and encouraging the participation of all actors in the energy sector, we instructed the Steering Committee to develop and implement a work plan that defines cooperation activities which facilitate the elimination of barriers thus fostering the development of concrete projects. We also asked the Steering Committee to identify the technical, human resources and investment requirements necessary to achieve these stated objectives.

We underscored the need to promote access to financing for sustainable energy projects, and recognized the establishment of the Hemispheric Sustainable Energy Fund to meet this challenge, in response to the mandate from the Fourth Hemispheric Energy Ministers Meeting in New Orleans in 1999.

We recognized the valuable effort carried out by the Coordinating Secretariat to facilitate the work of the Hemispheric Energy Initiative. We agreed on the utility of evaluating the options for institutionalizing this process and directed the Steering Committee to convene an Ad Hoc Working Group within ninety (90) days to evaluate options and present concrete proposals to the next Ministers Meeting, in order to facilitate a decision on the issue.

Furthermore, we welcomed the outcomes achieved within the framework of the Energy Business Forum of the Americas of the HEI that was held on March 8, 2001 in Mexico City. This forum allowed for an exchange of ideas on petroleum, natural gas, electricity and renewable energy sources with the private sector, in order to facilitate the development of the energy sector in the region.

Given the valuable contribution of the private sector to the hemispheric energy integration process, we encourage businesses in the Americas to form a business network to facilitate a dialogue between businesses in the region and an exchange of ideas with governments in the region, as agreed to at the Fourth Hemispheric Energy Ministers Meeting in New Orleans.

We offer the following message to Heads of State at the Third Summit of the Americas to be held April 20 to 22, 2001 in Quebec City, Canada:

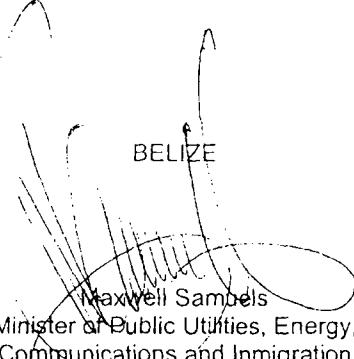
We recognize the importance of energy to the region's economic prosperity, to improved quality of life and to our environmental well-being and we commit to fostering energy integration, enhancing regulatory frameworks and their application, while promoting sustainable development. We also recognize that in pursuing regional integration of energy markets, issues such as market reform, transparency and market stability, regulatory reform, trade liberalization, and the enhanced availability of energy will be addressed. We reaffirm our commitment to advancing environmental stewardship in the area of energy by advancing policies, practices, transference of and access to technologies which are economically efficient and take the environmental impacts of energy development and use into account. We endorse and support the Hemispheric Energy Initiative's work in these areas.

We express our gratitude to the government and people of the Mexican United States for their kind hospitality and highly efficient organization of the event. We state to agree with the contents of this Declaration, in witness whereof we sign it in Mexico City on the nineth day of March, 2001.

ARGENTINA

Mónica Servant
Adviser for the Secretariat of
Energy and Mines

BELIZE


Maxwell Sampels
Minister of Public Utilities, Energy,
Communications and Immigration

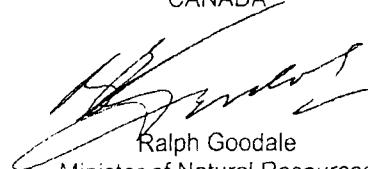
BOLIVIA


Carlos Alberto Contreras
Deputy Minister of Energy and
Hydrocarbons

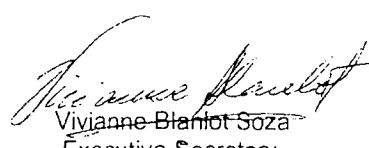
BRAZIL


Luiz Filipe de Macedo Soares
Ambassador of Brazil to Mexico

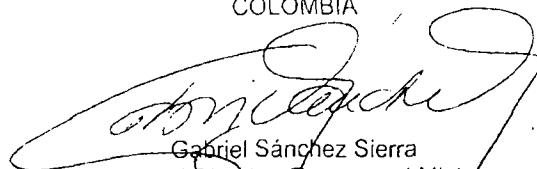
CANADA


Ralph Goodale
Minister of Natural Resources

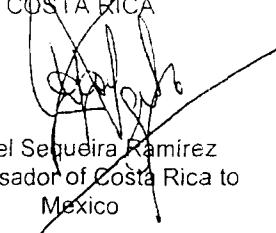
CHILE


Vivianne Blanlot Soza
Executive Secretary,
National Energy Commission

COLOMBIA


Gabriel Sánchez Sierra
General Director, Energy and Mining
Planning Unit

COSTA RICA


Rafael Sequira Ramírez
Ambassador of Costa Rica to
Mexico

ECUADOR

Pablo Andrés Terán
Minister of Energy and Mines

EL SALVADOR

Eduardo Cárdenas López
Ambassador of El Salvador to
Mexico

GUATEMALA

Raúl Archila
Minister of Energy and Mining

HONDURAS

Xiomara Gómez de Caballero
Minister of Natural Resources and
Environment

JAMAICA

Godfrey Perkins
Permanent Secretary, Ministry of
Mining and Energy

MÉXICO

Ernesto Martens Rebollo
Secretary of Energy

NICARAGUA

Luis Velázquez
Executive Secretary,
National Energy Commission

PANAMA

Temístocles Rosas
Deputy Minister of Trade and
Industry

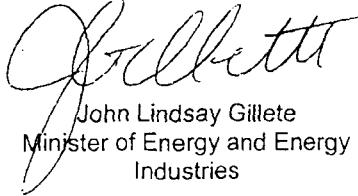
PERU

Carlos Herrera Descalzi
Minister of Energy and Mining

SAINT KITTS AND NEVIS

Rupert E. Herbert
Minister of Communications, Works
and Public Utilities

TRINIDAD AND TOBAGO



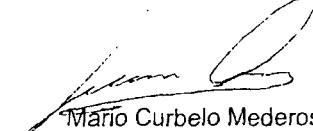
John Lindsay Gillette
Minister of Energy and Energy
Industries

UNITED STATES OF AMERICA



Spencer Abraham
Secretary of the Department of
Energy

URUGUAY



Mario Curbelo Mederos
Deputy Minister of Industry, Energy
and Mining

VENEZUELA



Alvaro Calderón Silva
Minister of Energy and Mining

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EXTENSION OF THE AGREEMENT FOR ENERGY COOPERATION
BETWEEN THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF
AMERICA AND THE SECRETARIAT OF ENERGY OF THE
UNITED MEXICAN STATES, AND ITS FOUR ANNEXES

WHEREAS, the Department of Energy of the United States of America (DOE) and the Secretariat of Energy of the United Mexican States (SENER), hereinafter referred to as "the Parties" signed an Agreement for Energy Cooperation on May 7, 1996, hereinafter referred to as "the Agreement";

WHEREAS, the Parties have a strong desire to continue to cooperate in the field of renewable energy, energy efficiency, and fossil energy technologies for their mutual benefit;

WHEREAS, Article 11, Paragraph B, of the Agreement provides for the amendment or extension of the Agreement by written agreement of the Parties;

IT IS HEREBY AGREED AS FOLLOWS:

The Agreement is hereby extended for a five year period, effective from May 7, 2001. The four Annexes listed below are hereby extended for a two year period, effective from May 7, 2001, during which time the Parties will work together to refocus activities under the Annexes, and identify ways to make the Annexes more effective.

Project Annex 1: Cooperation in the Field of Renewable Energy

Project Annex 2: Cooperation in the Field of Energy Efficiency

Project Annex 3: Environmental Cooperation in the Field of Hydrocarbons

Project Annex 4: Cooperation in the Field of Clean Fossil Energy

Technologies

All other provisions of the Agreement shall remain in effect without change.

Done at Washington, D.C., this fourth day of September, 2001, in duplicate, in the English and Spanish languages, each text being equally authentic.

FOR THE DEPARTMENT OF ENERGY FOR THE SECRETARIAT OF ENERGY
OF THE UNITED STATES OF MEXICO
AMERICA


Spencer Abraham
Secretary of Energy

Ernesto Martens
Secretary of Energy

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IMPLEMENTING AGREEMENT

between

the Department of Energy of the United States of America

and

the European Commission

for

NON-NUCLEAR ENERGY

SCIENTIFIC AND TECHNOLOGICAL CO-OPERATION

In accordance with the Agreement for Scientific and Technological Co-operation between the United States of America and the European Community signed on December 5, 1997 and entered into force on October 14, 1998, this Implementing Arrangement applies to scientific and technological co-operation between the Department of Energy of the United States of America and the European Commission (hereinafter referred to as "the Sides") in the field of non-nuclear energy.

The objective of this Implementing Arrangement is to establish a framework for collaboration between the Sides in specific areas where the programs of the Sides complement one another as well as those in which comparability exists and is intended to result in an overall balance of mutual benefit based on equitable and fair treatment.

SECTION 1 - AREAS OF COOPERATION

Co-operative activities may be undertaken in the field of non-nuclear energy research, technological development and demonstration as set out in the European Community's fifth Framework Programme for research, technological development and demonstration activities, and as set out by the United States Department of Energy, in particular:

- a. Fossil energy resources (including, but not limited to, generation of electricity and mitigation of climate change).
- b. New (including, but not limited to, fuel cells and the use of hydrogen) and renewable (e.g., wind, solar, bio-energy, geothermal) energy.
- c. Energy efficiency (including, but not limited to, transmission and storage of energy).
- d. Sharing of unique R&D facilities.
- e. Other areas of co-operation which may be added by mutual written agreement of the Sides.

SECTION 2 - FORMS OF COOPERATION

Co-operation in accordance with this Implementing Arrangement may include, but is not limited to, the following forms:

- a. Provision of reciprocal opportunities for entities from the European Community and from the United States of America to participate in the other Side's programs as referred to in Section 1.
- b. Exchange and provision of information and data on scientific and technical activities, developments, practices and results, forthcoming calls for proposals, and on program policies and plans including exchange of proprietary information on the terms and conditions in accordance with Section 7.
- c. Exchange of scientists, engineers, and other specialists for agreed periods of time in order to participate in experiments, analysis, design and other research and development activities at existing and new research centres, laboratories, engineering offices and other facilities and enterprises of each of the Sides or its associated organisations or contractors.
- d. Exchange and provisions of samples, materials and equipment for experiments, testing and evaluation.
- e. Meetings of various forms to discuss and exchange information on scientific and technological aspects of general or specific subjects in the areas listed in Section 1, and to identify additional co-operative actions which may be usefully undertaken.
- f. Execution of joint studies, projects or experiments (i.e., joint design, construction and operation) including activities in partnership with private industry and non-governmental organisations selected through calls for proposals issued by either Side or through co-ordinated calls by both Sides.
- g. Other specific forms of collaboration may be added by mutual written agreement of the Sides.

SECTION 3 - STEERING GROUP

- a. To supervise the execution of this Implementing Arrangement, a Steering Group shall be established to which each Side shall designate two or three persons to serve as Lead Co-ordinators. Lead Co-ordinators shall appoint a Technical Co-ordinator for each of the technical fields or groups of related technical fields as may be necessary. For the European Commission, DG Research, DG Energy and Transport and the Joint Research Centre shall each designate a Lead Co-ordinator.
- b. The Lead Co-ordinators shall normally meet each year, alternately in the United States and Europe, the hosting Side providing organisation and secretariat. At their meetings, the Lead Co-ordinators shall evaluate the status of co-operation under this Implementing Arrangement. This evaluation shall include a review of the past year's activities and accomplishments and of the activities planned for the coming year within each of the technical fields or groups of related technical fields listed in Section 1, an assessment of the balances of exchanges within each of the technical fields or groups of technical fields listed in Section 1, and consideration of measures required to correct any imbalances.

- c. Tasks of the Steering Group shall also include: overseeing and encouraging co-operative activities, exchanging information on programs, practices, laws and regulations relevant to co-operation, suggesting objectives and co-operative activities for each upcoming year and proposing ad hoc activities under this Implementing Arrangement. In addition, the Lead Co-ordinators shall consider and act on any major new proposals for collaboration. Technical Co-ordinators may, at the discretion of the Lead Co-ordinators, participate in these annual meetings.

SECTION 4 – ASSIGNMENTS AND EXCHANGE OF PERSONNEL

Unless otherwise agreed in writing, the following provisions shall apply concerning assignments and exchanges of personnel under this Implementing Arrangement:

- a. Each Side may, at its own expense, and subject to agreement of the other Side, observe test activities and analytical work of the other Side. Such observation may be accomplished by short-term visits or by the assignment of staff, subject to the prior agreement of the receiving Side on each occasion.
- b. Whenever an assignment or exchange of staff is contemplated under this Implementing Arrangement, each Side shall select qualified staff for assignment to the other Side to conduct the activities planned under this Implementing Arrangement. Each such exchange of personnel shall be mutually agreed in advance by an exchange of letters between the Sides, referencing this Implementing Arrangement and its pertinent intellectual property provisions.
- c. Each Side shall be responsible for the salaries, insurance, and allowances to be paid to its staff or contractors.
- d. Each Side shall pay for the travel and living expenses of its staff while on assignment to the host Side, unless otherwise agreed.
- e. Each Side shall arrange for accommodation for the other Side's assigned staff or its contractors (and their families) on a mutually agreeable reciprocal basis.
- f. The host Side shall provide all necessary assistance to the assigned staff or its contractors (and their families) of the other Side regarding administrative formalities.
- g. The staff of each Side and its contractors shall be subject to the general and special rules of work and safety regulations in force at the host establishment.

SECTION 5 – EXCHANGE OF EQUIPMENT

Unless otherwise agreed in writing, the following provisions shall apply to the provision of equipment by one Side to the other Side under this Implementing Arrangement:

- a. The sending Side shall supply to the other Side as soon as possible a detailed list of the equipment to be provided, together with the associated specifications and technical and informational documentation.
- b. The equipment, spare parts, and documentation supplied by the sending Side shall remain the property of the sending Side and shall be returned to the sending Side upon completion of the mutually agreed upon activity unless otherwise agreed.

- c. The host establishment shall provide the necessary premises and shelter for the equipment, and shall provide for electric power, water and gas in accordance with all technical requirements, which shall be as mutually agreed upon by the Sides.
- d. The sending Side shall be responsible for expenses, safekeeping and insurance during the transport of the material from the original location in the country of the sending Side to the place of entry in the country of the receiving Side. If the sending Side elects to have the material returned, the sending Side shall be responsible for expenses, safekeeping, and insurance during the transport of the material from the original point of entry in the country of the receiving Side to the final destination in the country of the sending Side.
- e. The receiving Side shall be responsible for expenses, safekeeping, and insurance during the transport of the material from the place of entry in the country of the receiving Side to the final destination in the country of the receiving Side. If the sending Side elects to have the material returned, the receiving Side shall be responsible for expenses, safekeeping, and insurance during the transport of the material from the final destination in the country of the receiving Side to the original point of entry in the country of the receiving Side.
- f. The equipment provided by the sending Sides for carrying out mutually agreed-upon activities shall be considered to be scientific, not having a commercial character.

SECTION 6 – SAMPLES AND MATERIALS

- a. Unless otherwise agreed by the Sides prior to delivery, all samples and materials provided by the sending Side to the receiving Side shall not be returned to the sending Side.
- b. Where one Side requests that a sample or material be provided by the other Side, the Side making the request shall bear all costs and expenses associated with the transportation of the sample or material from the location of the sending Side to the final destination.
- c. Each Side shall promptly disclose to the other Side all information arising from the examination or testing of samples or materials exchanged under this Implementing Arrangement. The Sides agree that proprietary information, as defined in the Annex to the US-EC S&T Agreement, which was developed prior to or outside the scope of this Implementing Arrangement, shall remain proprietary information even though it is contained in the results of an examination or testing of samples and materials. Such information shall be identified as proprietary by the Side asserting its proprietary nature as soon as possible after disclosure of all information arising from the examination or testing is made to such Side and the other Side shall be immediately advised of that identification. All information identified as proprietary shall be controlled as provided under the Annex to the US-EC S&T Agreement. It is further understood and agreed that one Side providing samples or materials to the other Side may also provide a partial or complete list of the types of information which will arise from the examination or testing of such samples or materials and which is proprietary information as defined in the Annex to the US-EC S&T Agreement and all such proprietary information is to be controlled as set out in the Annex to the US-EC S&T Agreement.

SECTION 7 - INTELLECTUAL PROPERTY

Rights related to any form of intellectual property arising under this Implementing Arrangement shall be allocated in conformity with the rules and procedures set out in the Intellectual Property Rights Annex attached to the Agreement for Scientific and Technological Co-operation between the United States of America and the European Community signed on December 5, 1997 and entered into force on October 14, 1998, which forms an integral part of this Arrangement.

SECTION 8 - GENERAL PROVISION

The provisions of the S&T Agreement shall apply to this Implementing Arrangement.

SECTION 9 – FUNDING

- a. Except as otherwise specified in this Implementing Arrangement or when otherwise specifically agreed to in writing by the Sides, all costs resulting from co-operation under this Implementing Arrangement shall be borne by the Side that incurs them. Activities under this Implementing Arrangement shall be subject to the availability of appropriated funds.
- b. Each Side shall bear the costs of participation in meetings of the Steering Group. However, costs, other than those for travel and accommodation, which are directly associated with meetings of the Lead Co-ordinators, shall be borne by the hosting Side.

SECTION 10 - DURATION AND TERMINATION

- a. This Implementing Arrangement shall enter into force upon signature by both Sides and shall remain in force for the period of the US-EC S&T Agreement.
- b. This Implementing Arrangement may be amended by mutual written agreement of the Sides. This Implementing Arrangement may be terminated at any time by either Side upon six (6) months written notice.
- c. The expiration or termination of this Implementing Arrangement shall not affect the validity or duration of any specific rights and obligations that have accrued in compliance with Section 7. The expiration or termination of this Implementing Arrangement shall not affect the validity or duration of projects under this Implementing Arrangement that are initiated prior to such expiration or termination, unless mutually agreed, and such projects may be continued until their completion under the terms of this Implementing Arrangement.

Done in duplicate in the English language at Brussels, this 14th day of May, 2001

*FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA*

Spencer Abraham

FOR THE EUROPEAN COMMISSION

T. Breyer

Member of the Commission

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**AGREEMENT FOR COOPERATION BETWEEN THE EUROPEAN ATOMIC ENERGY COMMUNITY
REPRESENTED BY THE COMMISSION OF THE EUROPEAN COMMUNITIES AND THE
DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA IN THE FIELD OF FUSION
ENERGY RESEARCH AND DEVELOPMENT**

The European Atomic Energy Community (EURATOM), represented by the Commission of the European Communities, and the Department of Energy of the United States of America (DOE), (hereinafter referred to collectively as "the Parties");

Whereas the Agreement for Cooperation in the Peaceful Uses of Nuclear Energy between the European Atomic Energy Community and the United States of America, signed at Brussels November 7, 1995, and March 29, 1996, provides for cooperation in the peaceful uses of nuclear energy, including controlled thermonuclear fusion, and, in particular, contributions towards multilateral projects;

Desiring to continue the long history of valuable collaboration between the Parties and to enhance the tradition of close and continuing cooperation in the field of fusion energy which has occurred under the Agreement in the Field of Controlled Thermonuclear Fusion (DOE-EURATOM Agreement) signed at Brussels December 15, 1986; and in multilateral frameworks, especially ITER; and

Desiring to continue to promote the development of fusion energy as a potentially environmentally acceptable, economically competitive, and virtually limitless source of energy,

HAVE AGREED AS FOLLOWS:

*Article I
Objective*

The objective of this Agreement is to continue and intensify cooperation between the Parties in the areas covered by their respective fusion programs, on the basis of mutual benefit and overall reciprocity, in order to develop the scientific understanding and technological capability underlying a fusion energy system.

*Article II
Areas of Cooperation*

The areas of cooperation under this Agreement may include the following:

1. tokamaks, including the large projects of the present generation and activities related to those of the next generation;
2. alternative lines to tokamaks;
3. magnetic fusion energy technology;
4. plasma theory and applied plasma physics;
5. program policies and plans; and
6. other areas as mutually agreed in writing.

Article III
Forms of Cooperation

1. The forms of cooperation under this Agreement may include, but are not limited to, the following:
 - a. exchange and provision of information and data on scientific and technical activities, developments, practices and results, and on program policies and plans, including exchange of undisclosed information on the terms and conditions in accordance with Articles VI and VII;
 - b. exchange of scientists, engineers and other specialists for agreed periods of time in order to participate in experiments, analysis, design and other research and development activities in accordance with Article VIII;
 - c. organization of seminars and other meetings to discuss and exchange information on agreed topics in the areas listed in Article II, and to identify cooperative actions which may be usefully undertaken in accordance with Article V;
 - d. exchange and provision of samples, materials, equipment (instruments and components) for experiments, testing and evaluation in accordance with Articles IX and X;
 - e. execution of joint studies, projects or experiments including their joint design, construction and operation;
 - f. establishment of data links; and
 - g. other specific forms of cooperation as mutually agreed in writing.
2. The Parties shall coordinate the activities, as appropriate, under this Agreement, with other international fusion research and development activities, in order to minimize duplication of effort. Nothing in this Agreement will be construed to prejudice existing or future arrangements for cooperation between the Parties.

Article IV
Coordinating Committee and Executive Secretaries

1. The Parties will establish a Coordinating Committee to coordinate and supervise the conduct of activities under this Agreement. The Coordinating Committee will consist of up to twelve (12) members, half of whom will be appointed by each Party. The Coordinating Committee will meet annually, alternately in the United States and in the European Union, or at other agreed times and places. The Head of the Delegation of the receiving Party will chair the meeting.
2. The Coordinating Committee will review the progress and plans of activities under this Agreement, and propose, coordinate and approve future cooperative activities that are within the scope of this Agreement with regard to technical merit and level of effort to ensure mutual benefit and overall reciprocity within the Agreement.

3. All decisions of the Coordinating Committee will be by unanimity. The Coordinating Committee delegation from each Party shall have one vote, to be cast by the Head of the Delegation.
4. Each Party will nominate an Executive Secretary to act on its behalf during periods between meetings of the Coordinating Committee in all matters concerning cooperation under this Agreement. The Executive Secretaries will be responsible for day-to-day management of the cooperation.

Article V
Project Agreements

When the Coordinating Committee agrees to undertake a cooperative activity, it will approve a Project Agreement to this Agreement and subject to its terms. Each Project Agreement shall list the participants, and include detailed provisions for implementation of the cooperative activity, including but not limited to technical scope, management, applicable decontamination responsibility, exchange of undisclosed information, exchange of equipment, treatment of intellectual property, total costs, cost-sharing and schedule, as appropriate.

Article VI
Availability and Dissemination of Information

1. Subject to applicable laws and regulations and to provisions of this Agreement, each Party and its designees shall undertake to make freely available to the other Party and its designees any information at its disposal which is required for the execution of this Agreement.
2. The Parties shall support the widest possible dissemination of information which they have the right to disclose, either in their possession or available to them, and which is either developed jointly or intended to be provided or exchanged pursuant to this Agreement, subject to the need to protect undisclosed information and the need to protect intellectual property arising under this Agreement.
3. Information transmitted by one Party to the other Party under this Agreement shall be accurate to the best knowledge and belief of the transmitting Party, but the transmitting Party does not warrant the suitability of the information transmitted for any particular use or application by the receiving Party or by any third party. Information developed jointly by the Parties shall be accurate to the best knowledge and belief of both Parties. Neither Party warrants the accuracy of the jointly developed information or its suitability for any particular use or application by either Party or by any third party.

Article VII
Intellectual Property

The protection and allocation of intellectual property created or furnished in the course of collaborative activities under this Agreement will be governed by the provisions in Annex A, which shall form an integral part of this Agreement and shall apply to all activities conducted under this Agreement.

Article VIII
Exchanges and Assignments of Personnel

The following provisions shall apply concerning exchanges or assignments of personnel under this Agreement:

1. Each Party or participant shall ensure the selection of qualified personnel with skills and competence necessary to conduct the activities planned under this Agreement. Each such exchange or assignment of personnel shall be mutually agreed in advance by an exchange of letters between the Parties or participants, referencing this Agreement and its pertinent intellectual property provisions.
2. Each Party or participant shall be responsible for the salaries, insurance, and allowances to be paid to its exchanged or assigned personnel.
3. The sending Party or participant shall pay for the travel and living expenses of its exchanged or assigned personnel staying at the host establishment, unless otherwise agreed.
4. The receiving Party or participant shall arrange for adequate accommodations for the other Party's or participant's exchanged or assigned personnel (and their families) on a mutually agreeable, reciprocal basis.
5. The receiving Party or participant shall provide all necessary assistance to the exchanged or assigned personnel of the other Party or participant regarding administrative formalities (e.g., acquiring visas).
6. Each Party or participant shall ensure that the exchanged or assigned personnel conform to the general rules of work and safety regulations in force at the host establishment.
7. Each Party or participant may, at its own expense, observe test activities and analytical work of the other Party or participant in the areas of cooperation defined in Article II. Such observation may be exercised by short-term visits or by the assignment of personnel, subject to the prior agreement of the receiving Party or participant on each occasion.

Article IX
Exchanges of Equipment, Samples, etc.

Both Parties agree that in the event equipment, instruments, samples, materials or necessary spare parts (hereinafter referred to as "the equipment, etc.") are to be exchanged, loaned or supplied by one participant to the other, the following provisions shall apply covering the shipment and use of the equipment, etc.:

1. The sending participant shall supply as soon as possible a detailed list of the equipment, etc., to be provided, with the relevant specifications and technical and informational documentation.
2. The equipment, etc. supplied by the sending participant shall remain its property and shall be returned to the sending participant on a date to be determined by the Coordinating Committee unless otherwise agreed in the project agreement referred to under article V.

3. The equipment, etc. shall be brought into operation at the host establishment only by mutual agreement between the participants.
4. The receiving participant shall provide the necessary premises for the equipment, etc. and shall provide for electrical power, water, gas, etc., in accordance with technical requirements, which shall be mutually agreed.

Article X
General Provisions

1. Each Party shall conduct the activities provided for in this Agreement subject to its applicable laws and regulations, and shall provide resources subject to the availability of appropriated funds.
2. Unless otherwise specifically agreed in writing by the Parties within the framework of the Coordinating Committee, all costs resulting from cooperation under this Agreement shall be borne by the Party that incurs them.
3. All questions of interpretation or implementation relating to the Agreement arising during its term shall be resolved by agreement of the Parties.
4. This Agreement shall apply in so far as EURATOM is concerned, to the territories to which the Treaty establishing EURATOM applies and to the territories of the countries participating in the EURATOM fusion program as fully associated third States.

Article XI
Duration, Amendment and Termination

1. This Agreement shall enter into force upon the latter date of signature and shall remain in force for five (5) years. Unless one of the Parties notifies the other Party in writing of its intention to terminate this Agreement at least six months before its expiration, this Agreement shall be extended automatically for an additional five (5) years.
2. This Agreement may be amended by written agreement of the Parties.
3. All joint efforts and experiments not completed at the termination or expiration of this Agreement may be continued until their completion under the terms of this Agreement.
4. This Agreement and any Project Agreement hereunder may be terminated at any time at the discretion of either Party upon six (6) months' advance notification in writing by the Party seeking to terminate the Agreement or Project Agreement. Such termination shall be without prejudice to the rights that may have accrued under this Agreement or Project Agreement to either Party up to the date of the termination.

POR EL DEPARTAMENTO DE ENERGÍA, POR Y EN
NOMBRE DEL GOBIERNO DE LOS ESTADOS
UNIDOS DE AMERICA

FUR DAS DEPARTMENT OF ENERGY FÜR UND IM
NAMEN DER REGIERUNG DER VEREINIGTEN
STAATEN

FOR AMERIKAS FORENEDE STATTERS
ENERGIMINISTERIUM OG PA DERES REGERINGS
VEGNE

AMERIKAN YHDYSVALTOJEN
ENERGIAMINISTERIÖN JA AMERIKAN
YHDYSVALTOJEN HALLITUksen PUOLESTA

POUR LE DOE, AU NOM ET POUR LE COMPTE DU
GOUVERNEMENT DES ETATS-UNIS
D'AMERIQUE

I-IA TO YHOYPI-EIO ΕΝΕΡΓΕΙΑΣ ΚΑΙ ΕΞ
ΟΝΟΜΑΤΟC THC KYΒEPNHCHC TΩN HNOMENON
ΠΟΛΙΤΕΙΩN THC AMEPIKHC

FOR THE DEPARTMENT OF ENERGY FOR AND
ON BEHALF OF THE GOVERNMENT OF THE
UNITED STATES OF AMERICA

PER IL DIPARTIMENTO DELL'ENERGIA IN NOME
E PER CONTO DEL GOVERNO DEGLI STATI UNITI
D'AMERICA

VOOR HET DEPARTMENT OF ENERGY VOOR EN
NAMENS DE REGERING VAN DE VERENIGDE
STATEN VAN AMERIKA

PELO DEPARTMENT OF ENERGY EM NOME E
POR CONTA DO GOVERNO DOS ESTADOS
UNIDOS DA AMERICA

FÖR ENERGIDEPARTEMENTET FÖR AMERIKAS
FÖRENTA STATERS REGERING OCH PA DESS
VÄGNAR

POR LA COMUNIDAD EUROPEA DE LA ENERGÍA
ATÓMICA, REPRESENTADA POR LA COMISIÓN DE LAS
COMUNIDADES EUROPEAS

FUR DIE EUROPÄISCHE ATOMGEMEINSCHAFT,
VERTRETEREN DURCH DIE KOMMISSION DER
EUROPÄISCHEN GEMEINSCHAFTEN

FOR DET EUROPÆISKE ATOMENERGIFÆLLESSKAB,
REPRÆSENTERET VED KOMMISSIONEN FOR DE
EUROPÆISKE FÆLLESSKABER

EUROOPAN YHTEISÖJEN KOMISSION EDUSTAMAN
EUROOPAN ATOMIENERGIAYHTEISÖN PUOLESTA

POUR LA COMMUNAUTE EUROPÉENNE DE L'ENERGIE
ATOMIQUE, REPRÉSENTÉE PAR LA COMMISSION DES
COMMUNAUTES EUROPÉENNES

I-IA THN ΕΥΡΩΠΑΪΚΗ KΟΙΝΟΤΗΤΑ ATOMIKΗΣ
ΕΝΕΡΓΕΙΑΣ EΚΠΡΟΣΩΠΟΥΜΕΝΗ AΠΟ THN ENITROHN
TΩN ΕΥΡΩΠΑΪΚΩN KΟΙΝΟΤΗTRN

FOR THE EUROPEAN ATOMIC ENERGY COMMUNITY
REPRESENTED BY THE COMMISSION OF THE EUROPEAN
COMMUNITIES

PER LA COMUNITÀ EUROPEA DELL'ENERGIA ATOMICICA
RAPPRESENTATA DALLA COMMISSIONE DELLE
COMUNITÀ EUROPEE

VOOR DE EUROPESE GEMEENSCHAP VOOR
ATOOMENERGIE VERTEGENWOORDIGD DOOR DE
COMMISSIE VAN DE EUROPESE GEMEENSCHAPPEN

PELA COMUNIDADE EUROPEIA DA ENERGIA ATÓMICA.
REPRESENTADA PELA COMISSÃO DAS COMUNIDADES
EUROPEIAS

PA EUROPEiska ATOMENERGIGEMENSKAPENS VÄGNAR
FÖRETRÄDD AV EUROPEiska GEMENSKAPERNAS
KOMMISSION

Miembro de la Comisión
Medlem af Kommissionen
Mitglied der Kommission
Mέλος της Επιτροπής
Member of the Commission
Membre de la Commission
Membro della Commissione
Lid van de Commissie
Membro da Comissão
Komission jäsen
Ledamot av kommissionen

ANNEX A

INTELLECTUAL PROPERTY RIGHTS

Rights to intellectual property created or furnished under this Agreement shall be allocated as follows:

I. Application

This Annex is applicable to all cooperative activities undertaken pursuant to this Agreement, except as otherwise specifically agreed.

II. Ownership, Allocation and Exercise of Rights

- A. For purposes of this Agreement "Intellectual Property" shall have the meaning found in Article 2 of the Convention establishing the World Intellectual Property Organization, done at Stockholm, 14 July 1967.
- B. This Annex addresses the allocation of rights, interests and royalties between the Parties and participants. Each Party shall ensure that the other Party may obtain the rights to intellectual property allocated to it in accordance with this Annex. This Annex does not otherwise alter or prejudice the allocation between a Party and its nationals, which shall be determined by that Party's laws and practices.
- C. Termination or expiry of this Agreement shall not affect rights or obligations under this Annex.
- D. (1) In the case of cooperative activities between the Parties, intellectual property arising from joint research, i.e., research supported by both Parties, shall be treated in a Technology Management Plan (TMP) according to the following principles:
 - (a) The Parties shall notify each other within a reasonable time of any intellectual property rights arising under this Agreement (or relevant implementing arrangements).
 - (b) Unless otherwise agreed, rights and interests in intellectual property created during joint research shall be exploitable by either Party without territorial restriction.
 - (c) Each Party shall seek protection for the intellectual property to which it obtains rights and interests under the TMP in a timely fashion.
 - (d) Each Party shall have a non-exclusive, irrevocable, royalty-free license to use any intellectual property arising under this Agreement for research and development purposes only.
 - (e) Visiting researchers shall receive intellectual property rights and royalty shares earned by the host institutions from licensing of such intellectual property rights under the policies of the host institutions.
- (2) In all other cases, to the extent required by its laws and regulations, each Party shall require all its participants to enter into specific agreements concerning

the implementation of joint research and the respective rights and obligations of the participants. With respect to intellectual property, the agreements will normally address, among other things, ownership, protection, user rights for research and development purposes, exploitation and dissemination, including arrangements for joint publication, the rights and obligations of visiting researchers and dispute settlement procedures. The agreements may also address foreground and background information, licensing and deliverables.

- E. While maintaining the conditions of competition in areas affected by this Agreement, each Party shall endeavor to ensure that rights acquired pursuant to this Agreement and arrangements made under it are exercised in such a way as to encourage, in particular, (i) the use of information created, or otherwise made available, under this Agreement and its dissemination insofar as this is in accordance both with the conditions set out in this Agreement, the provisions of Section IV hereof and any rules which may be in force under the Parties' domestic laws governing treatment of sensitive or confidential information in the nuclear field, and (ii) the adoption and implementation of international standards.

III. Copyright Works

Consistent with the terms of this Agreement, copyright belonging to the Parties or to participants shall be accorded treatment consistent with the Agreement on Trade-Related Aspects of Intellectual Property Rights administered by the World Trade Organization.

IV. Scientific Literary Works

Subject to the treatment provided for undisclosed information in Section V, the following procedures shall apply:

- A. Each Party shall be entitled to a non-exclusive, irrevocable, royalty-free license in all countries to translate, reproduce and publicly distribute information contained in scientific and technical journals, articles, reports, books, or other media, directly arising from joint research pursuant to this Agreement by or on behalf of the Parties.
- B. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate the names of the authors of the work unless an author explicitly declines to be named. They shall also bear a clearly visible acknowledgment of the cooperative support of the Parties.

V. Undisclosed Information

A. Documentary Undisclosed Information

1. Each Party and the participants shall identify at the earliest possible moment the information that they wish to remain undisclosed in relation to this Agreement, taking account, *inter alia*, of the following criteria:
 - the information is secret in the sense that it is not, as a body or in the precise configuration or assembly of its components, generally known or readily accessible by lawful means;

- the information has actual or potential commercial value by virtue of its secrecy; and
- the information has been subject to steps that were reasonable under the circumstances by the person lawfully in control, to maintain its secrecy.

The Parties or the participants may in certain cases agree that, unless otherwise indicated, parts or all of the information provided, exchanged or created in the course of joint research pursuant to this Agreement may not be disclosed.

2. Each Party or participant shall ensure that undisclosed information under this Agreement and its ensuing privileged nature is readily recognizable as such by the other Party or participant, for example, by means of an appropriate marking or restrictive legend. This also applies to any reproduction of the said information, in whole or in part.

A Party or participant receiving undisclosed information pursuant to such agreement shall respect the privileged nature thereof. These limitations shall automatically terminate when this information is disclosed by the owner without restriction.

3. Undisclosed information communicated under this Agreement may be disseminated by the receiving Party or participant to persons employed by the receiving Party or participant including its contractors, and other concerned departments of the Party or participant authorized for the specific purposes of the joint research under way, provided that any undisclosed information so disseminated shall be protected to the extent provided by each Party's laws and regulations and shall be readily recognizable as such, as set out above.

B. Non-Documentary Undisclosed Information

Non-documentary undisclosed or other confidential or privileged information provided in seminars and other meetings arranged under the Agreement, or information arising from the attachment of staff, use of facilities, or joint projects, will be treated by the Parties or their designees according to the principles specified for documentary information in this Agreement, provided, however, that the recipient of such undisclosed or other confidential or privileged information has been made aware in writing of the confidential character of the information communicated not later than the time such a communication is made.

C. Control

Each Party shall endeavor to ensure that undisclosed information received by it under this Agreement shall be controlled as provided herein. If one of the Parties becomes aware that it will be, or may be reasonably expected to become, unable to meet the non-dissemination provisions of paragraphs A and B above, it shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

- A. Disputes between the Parties concerning intellectual property shall be resolved in accordance with Article 12 of the Agreement for Cooperation in the Peaceful Uses of Nuclear Energy between the European Atomic Energy Community and the United States of America.
- B. In the event either Party or a participant concludes that a new type of intellectual property not covered in a TMP or agreement between participants may result from a cooperative activity undertaken pursuant to this Agreement, or if other unforeseen difficulties arise, the Parties shall enter into immediate discussions with the object of assuring that the protection, exploitation and dissemination of the intellectual property in question are adequately provided for in their respective territories.

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**Implementing Arrangement No. 1
under the AGREEMENT
BETWEEN THE DEPARTMENT OF ENERGY OF THE
UNITED STATES OF AMERICA and
THE COMMISSARIAT A L'ENERGIE ATOMIQUE OF FRANCE
FOR COOPERATION IN
ADVANCED NUCLEAR REACTOR SCIENCE AND TECHNOLOGY**

Article I. General

The purpose of this Implementing Arrangement is to establish between the Department of Energy of the United States of America (DOE) and the Commissariat a l'Energie Atomique (CEA) of France, hereinafter referred to as the Parties, terms for bilateral collaboration on Research and Development (R&D) focused on advanced technologies for improving the cost, safety and proliferation-resistance of nuclear power systems.

The Department of Energy will engage in this cooperation as part of the International Nuclear Energy Research Initiative (I-NERI) program. The objective of I-NERI is to provide, through a competitive process, an effective means for international collaboration on a leveraged, cost-shared *quid pro quo* basis, directed toward achieving better-coordinated and more cost-effective nuclear energy R&D for the mutual benefit of the Parties.

Cooperation between the Parties shall be on the basis of mutual benefit, equality, and reciprocity.

Cooperation under this Implementing Arrangement shall be carried out in accordance with the Agreement between the Department of Energy of the United States of America and the Commissariat a l'Energie Atomique for Advanced Nuclear Reactor Science and Technology, signed on September 18, 2000 (the AGREEMENT) of which this Implementing Arrangement forms an integral part.

Article II. Objectives

The overall objectives for cooperation under this Implementing Arrangement are to:

1. promote collaboration between U.S. and French agencies and research organizations to improve development of nuclear energy;
2. develop advanced concepts and scientific breakthroughs in nuclear fission and reactor technology to address and overcome the principal technical, societal, and economic obstacles to the expanded peaceful use of nuclear energy; and
3. promote and maintain each nation's nuclear science and engineering infrastructure to sustain the capabilities necessary for the development and use of nuclear energy.

Article III. Areas of Cooperation

Cooperation under this Implementing Arrangement may include, but is not limited to the following areas:

- Advanced reactor developments for future-generation reactors;
- Advanced reactor fuel and reactor-cycle integration;
- Advanced accelerator applications, including accelerator-driven systems for transmutation of waste;
- Advanced fuel and material irradiation and use of experimental facilities;
- Fundamental nuclear science areas; and
- Such other areas as the Parties may agree.

Sensitive Nuclear Technology, as defined by 10 CFR 810, is specifically excluded from bilateral research under this Implementing Arrangement.

Article IV. Management

Management of this cooperation will be achieved as described below:

Bilateral Committee

The Steering Committee, as defined in Article 5 of the AGREEMENT, will establish a Bilateral I-NERI Committee (BINERIC). To serve on the BINERIC, the Parties will each appoint two to four representatives, each Party being represented equally.

Operating by consensus and under guidance from the Steering Committee, the BINERIC will provide programmatic direction, will establish the specific R&D scope and evaluation criteria, will select projects for awards and allocate annual project funding.

General Coordinators

Each Party shall appoint its own General Coordinator who will act under the direction and oversight of the BINERIC, will administer program funds contributed by the Parties, and negotiate and manage all contracts established as described below.

The general duties of the General Coordinators are as follows.

Prepare solicitations for proposals and criteria for proposal evaluation. Each solicitation and associated evaluation criteria will be subject to BINERIC approval prior to issuance. Responders will be required to form bilateral project teams;

Receive and screen all proposals for conformance to solicitation requirements;

Organize peer reviews to evaluate and rank, in order of technical merit, the proposals for awards;

Subject to the BINERIC's selection of proposals to be funded, issue contracts for the successful proposals. Each contract will be established with the two proposed lead organizations, U.S. and French, and each lead organization will subcontract with the other participants of his country named in the proposal;

Monitor progress of the funded activities and collect periodic status reports mentioned in each contract; and

Propose to the BINERIC either to reauthorize funding for subsequent phases of multi-year phased projects, or to proceed to programmatic modifications as appropriate, or propose terminating a project if warranted by lack of reasonable progress against expenditures.

Article V. Finance and Implementation Issues

Except when the Parties otherwise agree in writing, each Party shall contribute equally to support implementation of the I-NERI program.

Cooperation under this Implementing Arrangement is subject to the availability of appropriated funds. There is no obligation to make awards and commit funds for any projects in a given fiscal year.

Any questions of interpretation or implementation relating to this Implementing Arrangement arising during its term shall be resolved by agreement of the Parties.

Article VI. Information and Intellectual Property

Dissemination, use, and protection of information used or generated in the activities conducted pursuant to this Implementing Arrangement, and the allocations of rights in intellectual property arising in the course of such activities shall be governed by the provisions set forth in Annex I to the AGREEMENT .

Article VII. Duration and Termination

This Implementing Arrangement shall enter into force upon signature, shall continue for a five-year period, and may be extended or amended by mutual Agreement of the Parties, provided that the prior agreements, arrangements and the AGREEMENT remain in force.

Joint efforts and experiments not completed at the expiration or termination of this Implementing Arrangement may, by agreement of the Parties, be continued until their completion under the terms of the AGREEMENT.

This Implementing Arrangement may be terminated at any time at the discretion of either Party, upon six months' advance notification in writing by the Party seeking to terminate it. Such termination shall be without prejudice to the rights that may have accrued under this Implementing Arrangement to either Party up to the date of such termination.

Done at Washington DC this 9th day of July, 2001, in duplicate, in English and French languages, each text being equally authentic.

FOR THE UNITED STATES
DEPARTMENT OF ENERGY

FOR THE COMMISSARIAT A L'ENERGIE
ATOMIQUE OF FRANCE

Spencer Abraham

J. P. Bel

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**MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA
AND
THE MINISTRY OF ENERGY AND MINES
OF
THE REPUBLIC OF PERU
ON COOPERATION IN THE FIELD OF ENERGY**

The Department of Energy of the United States of America (DOE) and the Ministry of Energy and Mines of the Republic of Peru (MEM), hereinafter referred to as the "Parties";

Having a mutual interest in collaborating in energy-related planning, policy analysis, regulation, markets, and technologies; and

Recognizing their mutual interest in creating an attractive climate for domestic and foreign private capital investment in Peru's energy sector, and in fostering an efficient and environmentally sound energy infrastructure;

THE PARTIES HEREBY AGREE AS FOLLOWS:

**ARTICLE I
Purpose**

The objective of this Memorandum of Understanding (MOU) is to establish a framework for collaboration between the Parties in energy. The Parties shall conduct such collaboration on the basis of mutual benefit, equality and reciprocity.

**ARTICLE II
Areas of Cooperation**

The areas of cooperation under this MOU may include, but are not limited to the following:

1. Energy policy planning and analysis;
2. Natural gas and other clean transportation fuels;
3. Natural gas regulatory issues;
4. Distributed generation appropriate for rural electrification using small-scale fossil and renewable energy;
5. Large fossil-based power technologies;
6. Electricity transmission issues;
7. Capacity building; and
8. Other areas as the Parties may agree to in writing.

ARTICLE III Forms of Cooperation

The forms of cooperation under this MOU may include, but are not limited to, the following:

1. Exchange of scientific and technical information, and results and methods of research and development, and other cooperative projects in a manner agreed to by the Coordinators designated under Article IV;
2. Organization of seminars and other meetings on agreed energy topics in the areas enumerated in Article II in a manner agreed to by the Coordinators;
3. Survey visits by specialists to the energy facilities or projects of the other Party at the invitation of the host institution;
4. Exchange of materials, instruments, components and equipment for testing;
5. Exchange of personnel for participation in agreed research, development, demonstration, analysis, design, experimental, and training activities;
6. Joint projects in the form of experiments, tests, design analysis, or other technical collaborative activity;
7. Joint funding of specific projects which may be undertaken either by the Parties, or in connection with other persons in a manner agreed to by the Coordinators; and
8. Other forms of cooperation as the Parties may agree to.

ARTICLE IV Management

1. Each Party shall designate a Coordinator to supervise the implementation of this MOU. As mutually agreed, the Coordinators shall meet periodically to evaluate all aspects of the cooperation under this MOU. These meetings shall be held alternately in the United States and Peru, unless otherwise agreed.
2. The Coordinators shall approve and monitor all cooperative activities to be carried out under this MOU.
3. The Coordinators may establish separate subcommittees in any of the areas of cooperation to facilitate implementation of projects, which may be undertaken under this MOU.
4. The Coordinators shall review and evaluate any proposed activities and the status of cooperation under this MOU. The Coordinators shall give appropriate guidance and directions to the subcommittees and the project managers responsible for activities undertaken under this MOU. If requested, the Coordinators may advise the Parties regarding the progress and future of cooperative activities under this MOU.

ARTICLE V **Additional Organizations**

The Parties shall encourage the participation of other organizations in the cooperative activities under this MOU, on such conditions, consistent with the terms of this MOU, as the Coordinators shall agree: government agencies, universities, science and research centers, private sector firms and other institutions of the Parties, and institutions of third parties or international organizations.

ARTICLE VI **Project Annexes**

1. Each Party, or the designated representative of each Party, may propose activities to be conducted under this MOU by submitting a proposal to the Coordinators for approval.
2. Each cooperative activity that may involve the sharing of costs or that may give rise to intellectual property shall be described in writing in a Project Annex to this MOU. Such Project Annexes shall contain detailed procedures for the implementation of the cooperative activity, including but not limited to technical scope, exchange of appropriate proprietary information, management, total costs, cost-sharing and schedule, as appropriate. Each Project Annex shall be subject to and shall refer to this MOU.

ARTICLE VII **Transfer of Information and Equipment**

All information or equipment transmitted by one Party to the other Party under this MOU and any related Project Annex shall be appropriate, accurate, and to the highest standards to the best knowledge and belief of the transmitting Party, but the transmitting Party does not warrant the suitability of the information or equipment transmitted for any particular use or application by the receiving Party or any third party. Information or equipment developed jointly by the Parties shall be appropriate and accurate to the best knowledge and belief of both Parties. Neither Party warrants the accuracy of the jointly-developed information or the appropriateness of equipment nor its suitability for any particular use or application by either Party or by any third party.

ARTICLE VIII **Intellectual Property and Business-Confidential Information**

1. Scientific and technological information (other than business-confidential information) resulting from cooperation under this MOU shall be made available to the world scientific community, unless otherwise agreed by the Parties.
2. The protection and allocation of intellectual property, and the treatment of business-confidential information, shall be governed by the Annex to this MOU, which constitutes an integral part of this MOU.

ARTICLE IX **Exchanges of Equipment**

The following provisions shall apply concerning exchanges of equipment under this MOU.

1. By mutual arrangement, a Party may provide equipment to be utilized in a joint activity. In such case, the sending Party shall supply, as soon as possible, a detailed list of the equipment to be provided, together with the relevant specifications and appropriate technical documentation related to the use, maintenance, and repair of the equipment.
2. Title to the equipment and necessary spare parts supplied for use in joint activities shall remain in the sending Party, and the property shall be returned to the sending Party upon completion of the joint activity, unless otherwise agreed.
3. Equipment provided under this MOU shall be brought into operation at the host establishment only by arrangement of the Parties.
4. The host establishment shall provide the necessary premises for the equipment, shall provide for utilities such as electric power, water, and gas, and normally shall provide materials to be tested, in accordance with agreed technical requirements.
5. DOE shall be responsible, and shall pay all expenses, for the transport of equipment and materials from the United States by plane or ship to an authorized port of entry in Peru convenient to the ultimate destination. DOE shall be responsible for safekeeping and insurance en route for such equipment and materials.
6. MEM shall be responsible, and shall pay all expenses, for the transport of equipment and materials from Peru by plane or ship to an authorized port of entry in the United States convenient to the ultimate destination. MEM shall be responsible for safekeeping and insurance en route for such equipment and materials.
7. Equipment provided under this MOU for use in joint activities shall be considered to be scientific, not having a commercial character, and each Party shall make its best effort to obtain duty free entry.

ARTICLE X **Exchanges of Personnel**

The following provisions shall apply concerning exchanges of personnel under this MOU:

1. Whenever an exchange of personnel is contemplated, each Party shall ensure the selection of personnel with the skills and competence necessary to conduct the activities planned under this MOU. Each such exchange of personnel shall be agreed in advance by an exchange of letters between the Parties, referencing this MOU and its pertinent intellectual property provisions.
2. Each Party shall be responsible for the salaries, insurance, and allowances to be paid to its staff or contractors.
3. Each Party shall pay for the travel and living expenses of its staff or contractors staying at the establishment of the host Party, unless otherwise agreed.

4. Each Party shall help locate adequate accommodations for the other Party's staff or contractors (and their families) on a mutually agreeable, reciprocal basis.
5. Each Party shall provide all necessary assistance to the staff or contractors of the other Party as regards administrative formalities (e.g., assistance in making travel arrangements).
6. The staff and contractors of each Party shall conform to the general rules of work and safety regulations in force at the host establishment.

ARTICLE XI **General Provisions**

1. Unless otherwise agreed, all costs resulting from cooperation carried out under this MOU shall be the responsibility of the Party that incurs them.
2. Each Party shall conduct the activities provided for in this MOU in accordance with its applicable laws and regulations, and subject to the availability of appropriated funds and personnel.
3. Each Party shall use its best efforts to obtain all required permits and licenses as necessary for the implementation of this MOU.
4. Any dispute concerning the interpretation or application of this MOU shall be settled by consultations between the Parties.

ARTICLE XII **Duration, Amendment and Termination**

1. This MOU shall enter into force upon signature by both Parties and shall remain in force for five (5) years. This MOU may be renewed for additional 5-year periods by written agreement of the Parties following joint review at the end of each 5-year period.
2. This MOU may be amended by written agreement of the Parties.
3. This MOU may be terminated upon 3 months' advance notification in writing by either Party to the other Party.
4. All joint efforts and experiments not completed at the expiration or termination of this MOU may be continued until their completion under the terms of this MOU.

DONE in duplicate in the English language.

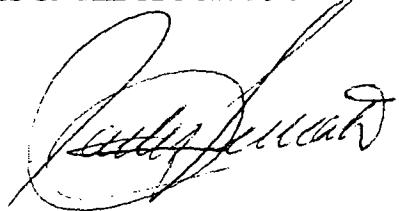
FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF
AMERICA:



DATE: August 14, 2001

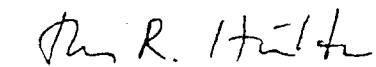
PLACE: Washington, D.C.

FOR THE MINISTRY OF ENERGY AND
MINES OF THE REPUBLIC OF PERU:



DATE: JULY 3, 2001

PLACE: Lima, Peru



Witnessed by John R. Hamilton

Ambassador of the United States
of America

ANNEX INTELLECTUAL PROPERTY

Pursuant to Article VIII of this MOU:

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this MOU and relevant Project Annexes. The Parties agree to notify one another in a timely fashion of any inventions or copyrighted works arising under this MOU, and seek protection for such intellectual property in a timely fashion. Rights to such intellectual property shall be allocated as provided in this Annex.

1. SCOPE

A. This Annex is applicable to all cooperative activities undertaken pursuant to this MOU, except as otherwise specifically agreed by the Parties or their designees.

B. For purposes of this MOU, "intellectual property" shall have the meaning found in Article 2 of the Convention Establishing the World Intellectual Property Organization, done at Stockholm, July 14, 1967.

C. This Annex addresses the allocation of rights and interests between the Parties. Each Party shall ensure that the other Party can obtain the rights to intellectual property allocated in accordance with this Annex, by obtaining those rights from its own participants through contracts or other legal means, if necessary. This Annex does not otherwise alter or prejudice the allocation between a Party and its nationals, which shall be determined by that Party's laws and practices.

D. Disputes concerning intellectual property arising under this MOU should be resolved through discussions between the concerned participating institutions or, if necessary, the Parties or their designees. Upon mutual agreement of the Parties, a dispute shall be submitted to an arbitral tribunal for binding arbitration in accordance with the applicable rules of international law. Unless the Parties or their designees agree otherwise in writing, the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL) shall govern.

E. Termination or expiration of this MOU shall not affect rights or obligations under this Annex.

2. ALLOCATION OF RIGHTS

A. Each Party shall be entitled to a non-exclusive, irrevocable, royalty-free license in all countries to translate, reproduce, and publicly distribute scientific and technical journal articles, reports, and books directly arising from cooperation under this MOU. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate the names of the authors of the work unless an author explicitly declines to be named.

Rights to all forms of intellectual property, other than those rights described in Paragraph 2.A. above, shall be allocated as follows:

1. Visiting researchers, for example, scientists visiting primarily in furtherance of their education, shall receive intellectual property rights under the policies of the host institution. In addition, each visiting researcher named as an inventor or author shall be entitled to national treatment with regard to awards, bonuses, benefits, or any other rewards, in accordance with the policies of the host institution.

2. (a) For intellectual property created during joint research, for example, when the Parties, participating institutions, or participating personnel have agreed in advance on the scope of work, each Party shall be entitled to obtain all rights and interests in its own country. Rights and interests in third countries will be negotiated in Project Annexes on a case-by-case basis. If research is not designated as "joint research" in the relevant Project Annex, rights to intellectual property arising from the research will be allocated in accordance with paragraph 2.B.1. above. In addition, each person named as inventor or author shall be entitled to national treatment with regard to awards, bonuses, benefits, or any other rewards in accordance with the policies of the participating institutions.

(b) Notwithstanding paragraph 2.B.2. (a) above, if a type of intellectual property is available under the laws of one Party but not the other Party, the Party whose laws provide for this type of protection shall be entitled to all rights and interests worldwide. Persons named as inventors or authors of the intellectual property shall nonetheless be entitled to national treatment with regard to awards, bonuses, benefits, or any other rewards in accordance with the policies of the participating institution of the Party obtaining rights.

3. BUSINESS-CONFIDENTIAL INFORMATION

In the event that information identified in a timely fashion as business-confidential is furnished or created under this MOU, each Party and its participants shall protect such information in accordance with applicable laws, regulations, and administrative practices. Information may be identified as "business-confidential" if a person having the information may derive an economic benefit from it or may obtain a competitive advantage over those who do not have it, the information is not generally known or publicly available from other sources, and the owner has not previously made the information available without imposing in a timely manner an obligation to keep it confidential.

8

**AGREEMENT BETWEEN
THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA
AND
THE MINISTRY OF FOREIGN AFFAIRS OF THE REPUBLIC OF UZBEKISTAN
CONCERNING
COOPERATION IN THE AREA OF PREVENTION OF
PROLIFERATION OF NUCLEAR MATERIALS AND TECHNOLOGIES**

The Department of Energy of the United States of America (hereinafter referred to as the DOE), as Executive Agent of the Government of the United States of America, and the Ministry of Foreign Affairs of the Republic of Uzbekistan (hereinafter referred to as the MFA), as Executive Agent of the Government of the Republic of Uzbekistan, hereinafter referred to jointly as the Parties,

Desiring to implement the Agreement between the Government of the United States of America and the Government of the Republic of Uzbekistan Concerning Cooperation in the Area of the Promotion of Defense Relations and the Prevention of Proliferation of Weapons of Mass Destruction, signed June 5, 2001 (hereinafter referred to as the Non-Proliferation Agreement), as it pertains to prevention of the illegal transfer and transportation of proliferation-attractive nuclear materials present on the territory of the Republic of Uzbekistan, and technology usable for the creation of nuclear weapons,

Desiring to facilitate the non-proliferation of weapons of mass destruction, and technology, materials and expertise related to such weapons, and

Desiring to facilitate in the Republic of Uzbekistan the conversion from the use of high-enriched uranium in civilian nuclear activities to low-enriched uranium,

Have agreed as follows:

ARTICLE I

For purposes of this Agreement:

1. "High-enriched uranium (HEU)" means uranium enriched to 20% or more in the isotope U-235.
2. "Low-enriched uranium (LEU)" means uranium enriched to less than 20% in the isotope U-235.

3. "Nuclear fuel" means fissile isotopes of uranium and all isotopes of plutonium contained in research and test reactor fuel assemblies, rods, control rods or sub-components thereof; research and test reactor target assemblies or sub-components thereof; and bulk materials intended for research or test purposes. These materials may be irradiated or unirradiated.

ARTICLE II

1. In accordance with the terms of this Agreement, the DOE may provide assistance at no cost to the MFA or its designated implementing agents to assist the Republic of Uzbekistan to return Soviet Union/Russian-supplied nuclear fuel stored in Uzbekistan to the Russian Federation, and also to assist in the prevention of the possible proliferation of proliferation-attractive nuclear materials and technologies.
2. The MFA or its designated implementing agents shall use all materials (including supplies, equipment and instruments), training and services provided in accordance with this Agreement exclusively for the purpose of returning Soviet Union/Russian-supplied nuclear fuel to the Russian Federation, and for preventing the possible proliferation of proliferation-attractive nuclear materials and technologies.
3. This Agreement and all activities undertaken in accordance with this Agreement shall be subject to the provisions of the Non-Proliferation Agreement. In the event of any discrepancies between this Agreement and the Non-Proliferation Agreement, the provisions of the Non-Proliferation Agreement shall prevail.

ARTICLE III

1. Each Party to this Agreement shall have the right, following written notification to the other Party, to delegate responsibilities for the implementation of this Agreement to other agencies, departments or units of their respective governments.
2. Each Party to this Agreement shall have the right, following written notification to the other Party, to designate technical liaison representatives for materials, equipment, training and services provided pursuant to this Agreement.

ARTICLE IV

1. Pursuant to the terms of this Agreement, the DOE may provide to the MFA, or its designated implementing agents, assistance for the purpose of preventing the possible proliferation of proliferation-attractive nuclear materials and related nuclear technologies from the territory of the Republic of Uzbekistan. Such assistance may include, but is not limited to activities related to:

- (a) the return of Soviet Union/Russian-supplied nuclear fuel from the VVR-SM research reactor at the Institute of Nuclear Physics, Tashkent to the Russian Federation;
- (b) conversion of the VVR-SM reactor from use of HEU fuel to use of LEU fuel;
- (c) safety upgrade of the VVR-SM reactor control system as part of its conversion from HEU fuel to LEU fuel;
- (d) security enhancement of the VVR-SM reactor site and nuclear materials stored at the site;
- (e) safe and secure storage of Uzbekistan's nuclear materials, including improving methods of protection, control, and accountability of nuclear materials to reduce the risk of theft or possible diversion of nuclear materials stored at premises on the territory of the Republic of Uzbekistan.

2. The terms of this Agreement shall cover:

- (a) the provision of technical assistance, safety engineering services, planning and project management support pertaining to the implementation of any assistance provided under this Agreement; and
- (b) the provision of procurement and/or acquisition services, selection of subcontractors, contract and project management services, and the technical and administrative oversight of subcontractor performance during the preparation for and implementation of work under this Agreement.

3. The MFA or its designated implementing agents shall convert the VVR-SM reactor from use of HEU fuel to use of LEU fuel as soon as a suitable LEU fuel can be qualified for use in the VVR-SM reactor and the appropriate licenses are obtained from Uzbekistan's national regulatory authority. The MFA or its designated implementing agents will cooperate with experts from the DOE to perform the analytical studies and irradiation testing required to qualify the LEU fuel and convert the reactor.

4. Conditions of assistance provided under this Agreement shall be defined by separate contracts or arrangements between the DOE and the MFA or their designated implementing agents. In case of any inconsistency between these contracts or arrangements and this Agreement, the provisions of this Agreement shall prevail.

5. Pursuant to the terms of this Agreement, the DOE may, at its discretion, provide the MFA or its designated implementing agents with other types of assistance subject to the written agreement of both Parties.

ARTICLE V

1. The MFA or its designated implementing agents shall assist the DOE or its designated implementing agents during implementation of the agreed assistance.
2. The MFA or its designated implementing agents shall coordinate with other appropriate Republic of Uzbekistan government agencies and organizations to ensure that materials, including supplies, equipment and instruments, provided to the Republic of Uzbekistan under this Agreement are afforded priority processing to allow prompt delivery to their ultimate destination within the Republic of Uzbekistan. The MFA or its designated implementing agents shall coordinate with the appropriate Republic of Uzbekistan government agencies and organizations to ensure that appropriate security measures are provided for United States government personnel, contractors and equipment at those facilities associated with work under this Agreement.
3. The MFA or its designated implementing agents shall facilitate the examination by the appropriate ministries and agencies of the Republic of Uzbekistan of all materials, including supplies, equipment and instruments received pursuant to this Agreement and provide confirmation to the DOE of their acceptability within ten days of receipt of the results of such examinations. The terms and conditions for repair or replacement of non-complying materials, including supplies, equipment, and instruments will be set forth in the contract(s) under which such materials are provided under this Agreement.

ARTICLE VI

In addition to the audit and examination rights set forth in Article XII of the Non-Proliferation Agreement, DOE representatives shall have the right to monitor the implementation of terms of contracts and the progress of work under this Agreement, at facilities on the territory of the Republic of Uzbekistan.

ARTICLE VII

As appropriate, the Parties may enter into implementing arrangements or agreements to carry out the provisions of this Agreement. In case of any inconsistency between this Agreement and any such arrangements or agreements, the provisions of this Agreement shall prevail.

ARTICLE VIII

This Agreement shall enter into force upon signature and shall remain in force for the duration of the Non-Proliferation Agreement. This Agreement may be amended or extended by the written agreement of the Parties and may be terminated by either Party upon written notification to the other Party 90 days prior to its intention to do so.

IN WITNESS WHEREOF, the undersigned, being duly authorized by their respective governments, have signed this Agreement.

DONE at Washington, this twelfth day of March, 2002, in duplicate in the English language. An Uzbek language text shall be provided by MFA, which text shall be considered equally authentic upon written notifications through the diplomatic channels, confirming its conformity with the English language text.

FOR THE DEPARTMENT OF
ENERGY OF THE UNITED STATES
OF AMERICA:



FOR THE MINISTRY OF FOREIGN
AFFAIRS OF THE REPUBLIC OF
UZBEKISTAN:



9

ANNEX 2

TO THE IMPLEMENTING ARRANGEMENT BETWEEN THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND THE MINISTRY OF ENERGY AND NATURAL RESOURCES OF THE REPUBLIC OF TURKEY FOR COOPERATION IN THE FIELD OF COAL AND POWER SYSTEMS

WHEREAS, the Department of Energy of the United States of America (hereinafter referred to as "DOE") and the Ministry of Energy and Natural Resources of the Republic of Turkey (hereinafter referred to as "MENR") entered into an Implementing Arrangement for cooperation in energy technology on March 20, 2002 (hereinafter referred to as the "Agreement");

WHEREAS, the DOE and MENR (hereinafter referred to as the "Parties") have a mutual interest in exchanging experience and views on coal and power systems, which include clean coal research, development, and demonstration technologies, and in pursuing general collaboration in these areas;

WHEREAS, the Parties recognize the contributions of fossil fuel technologies, including appropriate advanced power systems technology development, to fuel diversity, enhancing the environment, energy security, and expanding opportunities for international trade;

WHEREAS, the Parties will mutually benefit from collaboration in the deployment and use of coal and advanced power systems;

The parties agree to enter into this Annex in accordance with Article VI of the Agreement.

ARTICLE I SCOPE

The Parties agree to cooperate in a manner that will facilitate joint activities and market deployment of fossil energy technologies in an environmentally responsible way and which can help build sustainable markets. These joint activities may include, but need not be limited to:

- A. Consultation by senior program officials to permit joint planning of cooperative projects for which the participating organizations agree to share the tasks, the costs, or both;

- B. Joint technical evaluation and development of fossil energy technologies. In recognition of the important role of coal in the Turkish fuel mix, the Parties shall cooperate to facilitate the application of these technologies to resolve issues concerning coal use;
- C. Exchange of technical and economic data, including clean coal data regarding power systems, fuel upgrading, environmental control options, and co-sponsorship of conferences and seminars specifically related to:
 - Advanced and appropriate power systems, combustion technologies, and developmental components and sub-systems, such as air-blown gasification, pressurized fluidized-bed combustion, low-emission boiler systems, externally fired combined-cycle systems, hot-gas cleanup, and the combustion of coal-water mixtures;
 - Advanced coal conditioning, conversion and utilization technologies, such as the production of ultra clean coal-water mixtures, and coal-water slurry transport systems;
 - Environmental control technologies, such as wet and dry SO₂ scrubbers, NO_x reduction processes, including low NO_x burners and reburning technologies, combined SO₂ and NO_x control systems, selective catalytic and non-catalytic reduction (SCR and SNCR), high-efficiency particulate removal systems, and processes for by-product and ash utilization and/or waste management;
 - Environmental monitoring technologies, including continuous emission monitors; computer modeling and assessment techniques for determining potential impacts; alternative pollution prevention and control and waste minimization and utilization opportunities supportive of sustainable development and economic growth;
 - Exchange of information on environmental legislative approaches, standards, and market based incentives consistent with and supportive of coal use and environmental protection;
 - Environmental improvements with regard to coal production, handling, and transportation, including efficiency enhancement and cost-effective modern analytical devices and mechanisms for decision making and operational infrastructures.
- D. Exchange of information including operating experience regarding fuel cells and gas turbines, and co-sponsorship of conferences and seminars specifically related to:

- The distributed power applications of fuel cells while decreasing the emissions of carbon dioxide, a greenhouse gas; and reducing other pollutants;
 - Conducting studies on the capability of advanced turbine systems to minimize pollution and increase performance through high efficiency over other conventional power options.
- E. Joint review of appropriate research and development projects, both those in progress in the United States and Turkey and those that are deemed meritorious for initiation to benefit the enhanced use of coal in Turkey, followed by an agreed-upon plan to implement the findings and recommendations culminating from the review;
- F. Exchange visits to mutually agreed-upon United States and Turkish coal mining and equipment organizations, commercial and clean coal technology research, development, and demonstration program facilities pertaining to the technical areas and issues described above;
- G. Training and internship program support for personnel in the aforementioned coal and power system technologies to strengthen related human resources and institutional government, university, and industry laboratory infrastructure, and to facilitate joint government and industry activities;
- H. Joint development of technical programs to facilitate industrial partnerships between coal and power systems' industries of the United States and Turkey;
- I. Exchange of information between U.S./Turkish power sectors to avoid, mitigate and sequester greenhouse gas emissions;
- J. Exchange of information regarding market based energy production, transmission, distribution, and climate change mitigation;
- K. Exchange of information regarding regulatory reform including the roles of federal, state and local governments in governing electric power.

ARTICLE II MANAGEMENT

The DOE Assistant secretary for Fossil Energy shall be responsible for programmatic aspects of this Annex. MENR designates the Deputy Under Secretary for Energy Affairs to be responsible for the implementation of this Annex.

Each Party shall designate one Program Coordinator to supervise activities under this Annex. These Program Coordinators shall provide technical management and coordination of these activities under the Annex. Each task undertaken under this Annex shall be covered by a work plan that is approved by the Coordinators who will designate Co-Project Officers for that specific task.

ARTICLE III EXPENSES

Except when otherwise specifically agreed in writing, all costs resulting from cooperation under this Annex shall be borne by the Party that incurs them.

ARTICLE IV GENERAL PROVISIONS

Cooperation under this Annex shall be subject to the terms and conditions of the Agreement which are hereby incorporated by reference.

ARTICLE V TERM

This Annex shall enter into force on the date of exchange of Notes stating that the Parties have satisfied their respective approval procedures and shall remain in effect for five (5) years or until termination of the Agreement, whichever occurs first. This Annex may be amended or extended by mutual written agreement of the Parties.

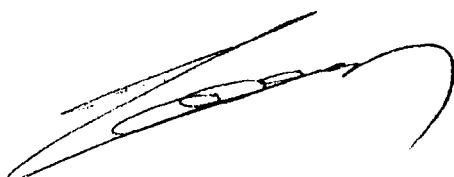
At the discretion of either Party, this Annex may be terminated upon six (6) months advance notice in writing by the other Party.

Done at Washington, D.C., in duplicate, this 20th day of March, 2002, in the English and Turkish languages, each text being equally authentic.

**FOR THE DEPARTMENT OF
ENERGY OF THE UNITED
STATES OF AMERICA:**

Spencer Abraham

**FOR THE MINISTRY OF ENERGY
AND NATURAL RESOURCES OF
THE REPUBLIC OF TURKEY:**



10

**IMPLEMENTING ARRANGEMENT
BETWEEN
THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA
AND
THE MINISTRY OF ENERGY AND NATURAL RESOURCES
OF THE REPUBLIC OF TURKEY
FOR COOPERATION IN ENERGY TECHNOLOGY**

The Department of Energy of the United States of America (DOE) and the Ministry of Energy and Natural Resources of the Republic of Turkey (MENR)(hereinafter referred to as the Parties);

Having a mutual interest in exchanging information, experience and points of view regarding the deployment of new and advanced energy technologies, the development and analysis of energy information, energy regulation, and energy planning, developing strategies to establish and promote market-based systems in renewable energy and energy efficiency technologies and fossil energy technologies, and promoting sustainable energy production, transmission, and consumption;

Recognizing the contribution of renewable energy, energy efficiency technologies and fossil energy technologies to increasing energy diversity, addressing environmental concerns, and enhancing energy security; and

Noting the Parties' interest in identifying and implementing regional cooperative energy projects;

HEREBY AGREE AS FOLLOWS:

**ARTICLE I
SCOPE AND OBJECTIVE**

1. This Implementing Arrangement is subject to and governed by the terms and conditions of the Agreement on Scientific and Technological Cooperation between the Government of the United States of America and the Government of the Republic of Turkey, signed June 14, 1994, as extended, hereinafter referred to as the "Umbrella Agreement."
2. The objective of this Implementing Arrangement is to establish cooperation between the Parties in the field of energy technology on the basis of reciprocity and mutual benefit.

ARTICLE II **AREAS OF COOPERATION**

Cooperation under this Implementing Arrangement may include, but is not limited to, the following areas:

1. Efficient and advanced energy technologies;
2. Fossil and advanced power systems;
3. Environmentally sound technologies related to electric power production, transmission and distribution, and information and experience related to the UN Framework Convention on Climate Change;
4. New and renewable energy technologies;
5. Energy efficiency;
6. Energy information, planning and regulations;
7. Basic energy research; and
8. Such other areas within the scope of this Implementing Arrangement as may be agreed by the Parties in writing.

ARTICLE III **FORMS OF COOPERATION**

Cooperation under this Implementing Arrangement may include but is not limited to:

1. Exchanges of information and data on scientific and technical activities, developments, practices, methods and results;
2. Exchanges of scientists, engineers and other specialists for agreed periods of time for participation in experiments, analysis, design and other research and development activities at research centers, laboratories, engineering offices and other facilities and enterprises of the Parties or their contractors;
3. Short-term visits by staff or assignments of staff to facilities of the Parties or their contractors;

4. Organization of, and participation in, seminars, workshops and other meetings;
5. Exchange of and provision of samples, materials, instruments and components for experiments, testing, and evaluation;
6. Execution of joint studies, projects or experiments, including joint design, construction and operational activities; and
7. Other forms of cooperation as mutually agreed by the Parties in writing.

ARTICLE IV MANAGEMENT

1. DOE and MENR shall each name one Coordinator to supervise activities under this Implementing Arrangement. The Coordinators shall approve and monitor all activities carried out under this Implementing Arrangement and shall assess opportunities for expanding cooperation.
2. The Coordinators may establish subcommittees to facilitate the implementation of projects initiated under this Implementing Arrangement.
3. The Coordinators shall meet periodically, alternately in the United States and Turkey, to evaluate all aspects of cooperation carried out under this Implementing Arrangement.

ARTICLE V ADDITIONAL ORGANIZATIONS

The Parties may invite additional public and private organizations in their respective countries to participate at their own expense, and subject to such terms and conditions as the Parties may specify, in cooperative activities under this Implementing Arrangement.

ARTICLE VI PROJECT ANNEXES

The Parties shall conclude a Project Annex for each cooperative activity described in Article II. Each such Project Annex shall be subject to this Implementing Arrangement and shall set forth detailed provisions for carrying out the specific form of cooperative activity and shall cover such matters as technical scope, management, assignment of staff and exchange of equipment, total costs, cost-sharing, and schedule.

ARTICLE VII AVAILABLE INFORMATION

1. The Parties shall exchange information necessary to carry out this Implementing Arrangement. All information arising under this Implementing Arrangement will be promptly exchanged between the Coordinators.
2. Information transmitted by one Party to the other Party under this Implementing Arrangement shall be accurate to the best knowledge and records of the transmitting Party, but the transmitting Party does not warrant the suitability of the information transmitted for any particular use or application by the receiving Party or by any third party.

ARTICLE VIII INTELLECTUAL PROPERTY AND BUSINESS-CONFIDENTIAL INFORMATION

The protection and allocation of intellectual property and the treatment of business-confidential information created or furnished in the course of cooperative activities under this Implementing Arrangement shall be governed by the provisions of Annex 1 which is attached to this Implementing Arrangement and constitutes an integral part hereof.

ARTICLE IX GENERAL PROVISIONS

1. Unless otherwise agreed in writing, costs resulting from activities under this Implementing Arrangement shall be the responsibility of the Party that incurs them.
2. Each Party shall conduct the activities provided for in this Implementing Arrangement and its Project Annexes subject to its applicable laws and regulations and the availability of appropriated funds and personnel.
3. Each Party shall use its best efforts to obtain all permits and licenses required by law to carry out this Implementing Arrangement.
4. Any dispute concerning the interpretation of this Implementing Arrangement shall be settled by mutual agreement of the Parties.

ARTICLE X FINAL PROVISIONS

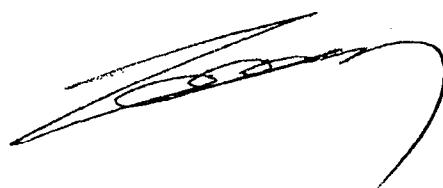
1. This Implementing Arrangement shall enter into force on the date of exchange of notes stating that the Parties have satisfied their respective approval procedures, and shall remain in force for five (5) years or so long as the Umbrella Agreement remains in force, whichever period is shorter. Unless one of the Parties notifies the other Party in writing of its intention to terminate this Implementing Arrangement, at least six months before its expiration, this Implementing Arrangement shall be automatically extended for an additional 5-year period, as long as the Umbrella Agreement remains in force.
2. The termination or expiration of this Implementing Arrangement shall not affect the completion of any project or program initiated under this Implementing Arrangement and not fully executed at the time of the termination or expiration of this Implementing Arrangement.
3. This Implementing Arrangement may be amended by written agreement of the Parties.
4. Either Party may terminate this Implementing Arrangement at any time upon six-months advance written notification to the other Party. Such termination shall be without prejudice to the rights that may have accrued to either Party under this Implementing Arrangement up to the date of termination.

DONE at Washington, D.C., in duplicate, this 20th day of March, 2002, in the English and Turkish languages, each text being equally authentic.

**FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF
AMERICA:**



**FOR THE MINISTRY OF ENERGY
AND NATURAL RESOURCES OF
THE REPUBLIC OF TURKEY:**



ANNEX 1

INTELLECTUAL PROPERTY RIGHTS

Pursuant to Article VIII of this Implementing Arrangement:

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this Implementing Arrangement and relevant Annexes. The Parties agree to notify one another in a timely fashion of any inventions or copyrighted works arising under this Implementing Arrangement and to seek protection for such intellectual property in a timely fashion. Rights to such intellectual property shall be allocated as provided in this Annex.

I. Scope

- A. This Annex is applicable to all cooperative activities undertaken pursuant to this Implementing Arrangement, except as otherwise specifically agreed by the Parties or their designees.
- B. For purposes of this Implementing Arrangement, "intellectual property" shall have the meaning found in Article 2 of the Convention Establishing the World Intellectual Property Organization, done at Stockholm, July 14, 1967.
- C. This Annex addresses the allocation of rights and interests between the Parties. Each Party shall ensure that the other Party can obtain the rights to intellectual property allocated in accordance with this Annex, by obtaining those rights from its own participants through contracts or other legal means, if necessary. This Annex does not otherwise alter or prejudice the allocation between a Party and its nationals, which shall be determined by that Party's laws and practices.
- D. Disputes concerning intellectual property arising under this Implementing Arrangement should be resolved through discussions between the concerned participating institutions or, if necessary, the Parties or their designees. Upon mutual agreement of the Parties, a dispute shall be submitted to an arbitral tribunal for binding arbitration in accordance with the applicable rules of international law.
- E. Termination or expiration of this Implementing Arrangement shall not affect rights or obligations under this Annex.
- F. Cooperative activities will not be entered into where there is a reasonable prospect, as determined by either Party, of producing inventions in areas not considered patentable subject matter by both Parties. In the event that either Party believes that a particular joint research project under this Implementing

Arrangement will lead to the creation or furnishing of intellectual property of a type not protected by the applicable laws of one of the Parties, the Parties shall immediately hold discussions with regard to whether to continue the project. If it is mutually decided to continue, the provisions of Paragraph II.B.2(b) will apply.

II. Allocation of Rights

- A. Each Party shall be entitled to a non-exclusive, irrevocable, royalty-free license in all countries to translate, reproduce, and publicly distribute scientific and technical journal articles, reports, and books directly arising from cooperation under this Implementing Arrangement. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate the names of the authors of the work unless an author explicitly declines to be named.
- B. Rights to all forms of intellectual property of visiting researchers, inventors and authors, other than those rights described in Paragraph II.A above, shall be allocated as follows:
 - (1) Visiting researchers, for example, scientists visiting primarily in furtherance of their education, shall receive intellectual property rights under the policies of the host institution. In addition, each visiting researcher named as an inventor or author shall be entitled to awards, bonuses, benefits, or any other rewards in accordance with the policies of the host institution.
 - (2)
 - (a) For intellectual property created during joint research, for example, when the Parties, participating institutions, or participating personnel have agreed in advance on the scope of work, each Party shall be entitled to obtain all rights and interests in its own territory. Rights and interests in third countries will be determined in Annexes. If research is not designated as "joint research" in the relevant Annex, rights to intellectual property arising from the research will be allocated in accordance with paragraph II.B.(1) above. In addition, each person named as an inventor or author shall be entitled to awards, bonuses, benefits, or any other rewards in accordance with the policies of the participating institutions.
 - (b) Notwithstanding paragraph II.B.(2)(a) above, if a type of intellectual property is available under the laws of one Party but not the other Party, the Party whose laws provide for this type of protection shall be entitled to all rights and interests worldwide. Persons named as inventors or authors of the property shall nonetheless be entitled to awards, bonuses, benefits, or any other rewards in accordance with the policies of the participating institution of the Party obtaining rights.

III. Business Confidential Information

In the event that information identified in a timely fashion as business-confidential is furnished or created under this Implementing Arrangement, each Party and its participants shall protect such information in accordance with applicable laws, regulations, and administrative practices. Information may be identified as "business-confidential" if a person having the information may derive an economic benefit from it or may obtain a competitive advantage over those who do not have it, the information is not generally known or publicly available from other sources, and the owner has not previously made the information available without imposing in a timely manner an obligation to keep it confidential.

11

**Joint Announcement
by
the United States Department of Energy
and the Russian Federation Ministry for Atomic Energy
Concerning
Continued Purchases of Pu-238 for Peaceful Purposes**

RECOGNIZING the successful cooperation between the United States Department of Energy and the Russian Federation Ministry for Atomic Energy on purchases of plutonium-238 for peaceful applications to fuel power sources that provide heat and electricity for space power;

WHEREAS both sides recognize that cooperation in this area is beneficial for both countries;

Therefore, the United States Department of Energy declares its intention to resume, under the existing contract, purchases of plutonium 238 for peaceful uses for space power applications.

The Russian Federation Ministry for Atomic Energy welcomes the intention of the United States Department of Energy in resuming these purchases.

Signed at Washington, DC, May 8, 2002.

Spencer Abraham
Secretary

Ivanov
Minister

12

AGREEMENT

between

THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA

and

THE COMMISSARIAT A L'ENERGIE ATOMIQUE OF FRANCE

in the field of

RADIOACTIVE WASTE MANAGEMENT

WHEREAS

The Department of Energy of the United States of America (DOE) and the Commissariat à l'Energie Atomique of France (CEA), hereinafter referred to as the Parties;

Having a mutual interest in the safe, effective and economic retrieval, treatment, conditioning, handling, isolation, storage, long-term management of spent radioactive fuel and separated radioactive waste products;

Having cooperated in the area of radioactive waste management under the Agreement between the United States Department of Energy and the French Commissariat à l'Energie Atomique in the Field of Radioactive Waste Management of July 26, 1983, as extended, and the subsequent agreement of September 29 and October 8, 1995; and

Recognizing the contribution such research and development in radioactive waste management can make to protecting the environment, while furthering the safe and economic application of nuclear energy;

THEREFORE, it is agreed as follows:

ARTICLE 1 - OBJECTIVE

- 1.1. The objective of this Agreement is to continue and expand cooperation between the Parties in the field of radioactive waste management of the nuclear fuel cycle.
- 1.2. Cooperation between the Parties shall be on the basis of mutual benefit, equality and reciprocity.

ARTICLE 2 - AREAS OF COOPERATION

- 2.1. The areas of cooperation may include:
 - a. Solid and liquid waste treatment and immobilization;
 - b. Embedding and packaging of wastes;
 - c. R&D and qualification on containers for spent fuel and radioactive waste;
 - d. Package characterization;
 - e. Spent fuel and waste behavior in interim or long term storage and final disposal;
 - f. Geochemistry and migration of radionuclides;
 - g. Decontamination and decommissioning;
 - h. Transportation requirements;
 - i. Waste characterization; and
 - j. Such other areas of cooperation as the Parties may agree to in writing.
- 2.2. Information exchanged by the Parties in these areas will address operational considerations, environmental and public safety considerations, and public acceptance issues.

ARTICLE 3 - FORMS OF COOPERATION

Cooperation under this Agreement may include the following forms:

- 3.1. Exchange, on a current basis, of scientific and engineering information, and results and methods of research and development;
- 3.2. Organization of, and participation in, seminars or other meetings on specific agreed topics in the areas listed in Article 2;
- 3.3. Short visits by specialist teams or individuals to the experimental and operational radioactive waste management facilities of the other Party, subject to the prior written agreement of that Party;
- 3.4. Assignment of the staff of one Party, its contractors or subsidiaries to the radioactive waste management facilities of the other Party, its contractors or subsidiaries for participation in agreed research, development, design, analysis or other experimental activities, and ongoing operations in the field of radioactive waste management;
- 3.5. Exchange of radioactive waste samples, materials and equipment for testing;
- 3.6. Exchange of technology and engineering drawings (including specifications of components and of industrial plants);
- 3.7. Joint projects in which the Parties agree to share the work and/or costs;
- 3.8. Such other forms of cooperation as the Parties may agree.

ARTICLE 4 - IMPLEMENTING ARRANGEMENTS

When the Parties agree to undertake a form of cooperation set forth in Article 3.4.-3.8., the Parties shall conclude an Implementing Arrangement, which shall be subject to this Agreement. Each Implementing Arrangement shall include detailed provisions for carrying out the activity, and shall cover such matters as technical scope, total costs, cost-sharing between the Parties, project schedule, management of the cooperation, exchange of equipment, and any special provisions specific to the particular project. Activities under Implementing Arrangements may involve, as appropriate, associated firms or laboratories of the Parties or their contractors or subsidiaries.

ARTICLE 5 - MANAGEMENT

- 5.1. To supervise the execution of this Agreement, each Party shall name a Principal Coordinator. The Principal Coordinators shall meet each year, alternately in the United States and in France, or at such other times and places as agreed.

- 5.2. At their meetings, the Principal Coordinators shall evaluate the status of cooperation under this Agreement. This evaluation may include a review of the past year's activities and accomplishments under this Agreement, a review of the activities planned for the coming year within each of the various areas of cooperation listed in Article 2, an assessment of the balances of exchanges under this Agreement within each of the areas of cooperation listed in Article 2, and a consideration of measures required to correct any imbalances. In addition, the Principal Coordinators shall consider and act on any major new proposals for cooperation.
- 5.3. Day-to-day management of the cooperation under this Agreement shall be carried out by Technical Coordinators designated by the Principal Coordinators. The Technical Coordinators shall agree on specific details of cooperation in the technical areas listed in Article 2, within policy guidelines established by the Principal Coordinators. The Technical Coordinators shall be responsible for working contacts between the Parties in their respective areas of cooperation.

ARTICLE 6 - INTELLECTUAL PROPERTY RIGHTS

The treatment of intellectual property created or furnished in the course of cooperative activities under this Agreement is provided for in Annex I which shall form an integral part of this Agreement and shall apply to all activities conducted under the auspices of this Agreement.

ARTICLE 7 - DISCLAIMER

Information transmitted by one Party to the other Party under this Agreement shall be accurate to the best knowledge and belief of the transmitting Party, but the transmitting Party does not warrant the suitability of the information transmitted for any particular use or application by the receiving Party or by any third party.

ARTICLE 8 - PERSONNEL ASSIGNMENTS

- 8.1. Whenever an assignment or exchange of personnel is contemplated under Article 3.4., each Party shall ensure that qualified personnel are selected for assignment to the other Party.
- 8.2. Each Party shall be responsible for the salaries, travel, and living expenses of its personnel while on assignment to the host Party, unless otherwise agreed.
- 8.3. The receiving Party shall assist in locating accommodations for assigned personnel and families of the other Party or its contractors on a mutually agreeable reciprocal basis.

- 8.4. The receiving Party shall provide all necessary assistance to the assigned personnel and their families regarding administrative formalities such as assistance in making travel arrangements and applying for work permits.
- 8.5. Assigned personnel shall conform to the general and special rules of work and safety regulations in force at the establishment of the receiving Party, unless otherwise agreed. Such special rules of work may include restrictions on access to sensitive or classified facilities or areas.
- 8.6. The receiving Party shall provide assistance to the assigned personnel by placing at their disposal any office, supporting facilities and services which are necessary for them to fulfill their duties as agreed upon by the Parties.

ARTICLE 9 - GENERAL PROVISIONS

- 9.1. Each Party's activities under this Agreement shall be in accordance with its national laws and regulations.
- 9.2. All questions related to the Agreement arising during its term shall be settled by the Parties by mutual agreement.
- 9.3. Except when otherwise specifically agreed in writing, all costs resulting from cooperation under this Agreement shall be borne by the Party that incurs them. The responsibilities of each Party to carry out its obligations under this Agreement are subject to the availability of personnel and appropriated funds.

ARTICLE 10 - SECURITY OBLIGATIONS

If either Party believes that information or equipment proposed to be provided or exchanged under this Agreement requires protection in the interests of that Party's national defense or foreign relations, that Party shall so notify the other Party, and the Parties shall promptly consult to identify and agree upon appropriate measures for the protection of the information or equipment.

ARTICLE 11 - EXCHANGE OF EQUIPMENT AND MATERIALS

Equipment or materials may be provided by one Party to the other Party for the purposes of this Agreement and any Implementing Arrangement under conditions to be agreed and detailed in such Implementing Arrangements.

ARTICLE 12 - DURATION, AMENDMENT AND TERMINATION

- 12.1. This Agreement shall enter into force upon the last date of signature and shall remain in force for five (5) years. This Agreement shall be automatically renewed for five (5) year periods unless either Party notifies the other in writing at least six (6) months prior to the expiration of the first five-year period or any succeeding five-year period of its intent to terminate the Agreement. The Agreement may be amended in writing by the Parties.
- 12.2. This Agreement may be terminated at any time at the discretion of either Party, upon six (6) months advance notification in writing by the Party seeking to terminate the Agreement. Such termination shall be without prejudice to the rights which may have accrued under this Agreement to either Party up to the date of such termination.
- 12.3. Joint projects and experiments not completed at the termination of this Agreement may, on agreement of the Parties, be continued until their completion under the terms of this Agreement.

DONE at Washington, D.C. this 23rd day of May, 2002, in duplicate in the English and French languages, each text being equally authentic.

Spencer Abraham

FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA:

BTO

FOR THE COMMISSARIAT À
L'ENERGIE ATOMIQUE OF FRANCE:

ANNEX I - INTELLECTUAL PROPERTY

Pursuant to Article 6 of this Agreement:

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this Agreement and relevant Implementing Arrangements. The Parties agree to notify one another as soon as possible of any inventions or copyrighted works arising under this Agreement and to seek protection for such intellectual property as soon as possible. Rights to such intellectual property shall be allocated as provided below:

A. Scope

1. This Annex is applicable to all cooperative activities undertaken by the Parties or by the relevant entities (hereafter "cooperative entities") pursuant to this Agreement, except as otherwise specifically agreed by the Parties or their relevant entities.
2. For purposes of this Agreement, "intellectual property" shall have the meaning found in Article 2 of the convention establishing the World Intellectual Property Organization, done at Stockholm July 14, 1967.
3. This Annex addresses the allocation of rights and interests between the Parties. Each Party shall ensure that the other Party or cooperative entities can obtain the rights to intellectual property allocated in accordance with this Article. The allocation between a Party and the participants on behalf of this Party in the cooperative activities, which shall be determined by the Party's laws and practices, shall not be altered or prejudiced by application of this Annex.
4. Disputes concerning intellectual property arising under this Agreement shall be resolved through discussions between the concerned participating institutions or, if necessary, the Parties or their designees. Upon mutual agreement of the Parties, a dispute shall be submitted to an arbitral tribunal for binding arbitration in accordance with the applicable rules of international law. Unless the Parties or their designees agree otherwise in writing, the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL) shall govern.
5. Termination or expiration of this Agreement shall not affect the rights or obligations under this Annex. DOE Comment: While this is duplicative to Article 12.2, DOE does not object to the inclusion of this provision in Annex A.

B. Allocation of Rights

1. Each Party, subject to the restrictions of Section C of this Annex, shall be entitled to a nonexclusive, irrevocable, royalty-free license in all States to translate, reproduce, and publicly distribute scientific and technical journal articles, and publicly available reports directly arising under this Agreement. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate the names of the authors of the work unless an author explicitly declines to be named. Each Party or its relevant entities shall have the right to review a translation prior to public distribution.
2. Rights to all forms of intellectual property, other than those rights described in B.1. above, shall be allocated as follows:
 - a. Visiting researchers, for example, scientists visiting primarily in furtherance of their education, shall receive intellectual property rights under the rules of the host institution, unless a specific agreement is or has been signed between the host and forwarding institutions. In addition, each visiting researcher named as an inventor shall be entitled to treatment as a national of the host State with regard to awards, bonuses, benefits, or any other rewards, in accordance with the rules of the host institution.
 - b.
 - 1) For intellectual property created during joint research, the Parties or their relevant entities shall jointly develop a technology management plan either prior to the start of their cooperation, for example in research areas likely to lead rapidly to industrial applications, or within a reasonable time from the time a Party becomes aware of the creation of intellectual property. The technology management plan shall consider the relevant contributions of the Parties and their relevant entities, the benefits of exclusive or non-exclusive licensing by territory or for field of use, requirements imposed by the Parties' domestic laws, and other factors deemed appropriate. If needed, the technology management plan shall be jointly modified or completed in a timely fashion, subject to the approval of both Parties or their relevant entities.
 - 2) If the Parties or their relevant entities cannot agree on a joint technology management plan within a reasonable time not to exceed six months from the time a Party becomes aware of the creation of the intellectual property in question, each Party may designate one co-exclusive licensee to have world-wide rights to said intellectual property. Each Party shall notify the other two months prior to making a designation under this paragraph. When both Parties (or their licensees) exploit the intellectual property in a country, they

shall share equally the reasonable cost of intellectual property protection in that country.

3) A specific program of research will be regarded as joint research for purposes of allocating rights to intellectual property only when it is designated as such in the relevant cooperative project, otherwise the allocation of rights to intellectual property will be in accordance with section B.2.a).

4) In the event that either Party believes that a particular joint research project under this Agreement will lead, or has led, to the creation or furnishing of intellectual property of a type not protected by the applicable laws of one of the Parties, the Parties shall immediately hold discussions to determine the allocation of the rights to the said intellectual property; the joint activities in question will be suspended during the discussions, unless otherwise agreed by the Parties thereto. If no resolution can be reached within a three month period from the date of the request for discussions, the Parties shall cease the cooperation in the project in question.

Notwithstanding sections B.2.a) and b), rights to any intellectual property which has been created will be resolved in accordance with the provisions of section A.4.

C. Business-Confidential Information

In the event that information identified in a timely fashion as business-confidential information is furnished or created under this Agreement, each Party and its relevant entities shall protect such information in accordance with applicable laws and regulations. Information may be identified as business-confidential information if a person having the information may derive an economic benefit from it or may obtain a competitive advantage over those who do not have it, the information is not generally known or publicly available from other sources, and the owner has not previously made the information available without imposing in a timely manner an obligation to keep it confidential. Without prior written consent, neither of the Parties shall disclose any business-confidential information provided by the other Party except to appropriate employees and government personnel. If expressly agreed between the Parties, business-confidential information may be disclosed to prime and subcontractors. Such disclosures shall be for use only within the scope of their contracts with the Parties relating to cooperation under the Agreement. The Parties shall impose, or shall have imposed, an obligation on those receiving such information to keep it confidential. If one of the Parties becomes aware that, under its laws or regulations, it will be, or may reasonably be expected to become, unable to meet the non-disclosure provisions, it shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

13

PROJECT ANNEX 2

TO THE AGREEMENT BETWEEN THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND THE MINISTRY OF INDUSTRY, COMMERCE, ENERGY AND MINES OF THE KINGDOM OF MOROCCO CONCERNING COOPERATION IN CLEAN ENERGY TECHNOLOGIES

The Department of Energy of the United States of America (DOE) and the Ministry of Industry, Commerce, Energy and Mines of the Kingdom of Morocco (MEM), hereinafter referred to as the "Parties";

Noting the Agreement between the Department of Energy of the United States of America and the Ministry of Industry, Commerce, Energy and Mines of the Kingdom of Morocco Concerning Cooperation in Energy Efficiency and Renewable Energy signed October 16, 2000 (the "Umbrella Agreement"); and

Believing that effective collaboration by the Parties in the fields of clean energy technologies will contribute to sustainable development, promote global environmental protection, and stimulate market-based solutions to environmental concerns; promote collaborative research, development and deployment of renewable energy and energy-efficient technologies; and foster innovative programs to support the global adoption of these programs;

Have agreed as follows:

ARTICLE I Objective

- A. The objective of this Project Annex is to undertake cooperation in, but not limited to, the following:
 1. The DOE and its National Renewable Energy Laboratory (NREL) will continue working with MEM and its Center for Renewable Energy Development (CDER) on the development and consensus building around the recently completed National Strategic Plan for Development of Renewable Energy in Morocco. This Plan outlines opportunities for major expansion of renewable energy in Morocco through energy infrastructure development, public/private partnerships, environmental protection and the expansion of the capabilities at CDER. DOE and MEM will identify opportunities to develop renewable energy, particularly wind and solar energy, in Morocco.

2. DOE will assist MEM to implement the accreditation of CDER by the Institute for Sustainable Power in Colorado, to help assure that training offered by CDER meets international quality standards, and thereby build effective local capacity and reduce the risk of failure of renewable energy projects in Morocco. DOE and MEM will continue technical cooperation in the development of renewable energy technologies, and for testing and certification of quality standards through CDER for renewable energy technologies.
 3. Regulatory and policy reform in Morocco will help accelerate the introduction of renewable energy through more effective public/private partnerships that can meet both energy and environmental needs in Morocco while providing jobs, joint venture opportunities and a more secure energy future. DOE and MEM will continue to identify opportunities for exchange visits of officials to provide a forum for discussion of renewable energy regulatory and policy reform.
 4. NREL, CDER and Morocco's National Engineering School of Mineral Industry (ENIM) will collaborate to provide training materials for use in engineering courses and post-graduate programs offered by ENIM, leading to more effective clean energy technology projects and engineering leadership in the future.
 5. The Parties will foster the cooperation of NREL, CDER and the private sector to enhance the quality and usefulness of renewable energy resource assessment information available in Morocco, leading to accelerated deployment of renewable technologies. DOE and MEM will seek to facilitate opportunities for the identification and removal of barriers to investments in renewable energy technologies in Morocco.
 6. DOE will cooperate with MEM to help attract financing for clean energy technology projects in Morocco from private industrial and financial sources and from public sources, including U.S. and international financial institutions. DOE will assist MEM in the implementation of such projects.
 7. DOE will cooperate with MEM to continue its efforts to make Morocco a regional leader in the strategic planning development and application of renewable energy technologies and to extend these programs to other African countries.
 8. DOE and MEM will share information and analytical tools to assess opportunities to diversify energy supplies and improve energy efficiency in Morocco so that Morocco may become less dependent on fuel imports.
- B. This Project Annex is subject to the Umbrella Agreement. In the event of any conflict between the terms of the Umbrella Agreement and this Project Annex, the Umbrella Agreement shall govern.

ARTICLE II Participating Organizations

Each Party may invite other government agencies and private organizations in its respective country to participate in cooperative activities under this Project Annex, at their own expense and on such terms and conditions as the Parties may specify. For the MEM, such agencies and organizations, or "participating organizations," may include CDER and ENIM. For the DOE, such participating organizations may include the United States Agency for International Development, and NREL. Participating organizations may establish specific agreements within this Project Annex.

ARTICLE III Management

Each Party shall designate a Coordinator to provide technical management of and oversee activities under this Project Annex. Each task undertaken under this Project Annex shall be described in a work plan that is approved by both Coordinators, each of whom shall designate a Co-Project Officer for that specific task.

ARTICLE IV General Provisions

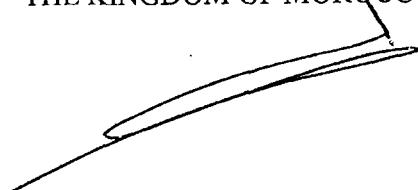
- A. This Project Annex shall become effective upon signature and shall remain in effect for five (5) years or until termination of the Umbrella Agreement, whichever occurs first. This Project Annex may be amended or extended by written agreement of the Parties, so long as the Umbrella Agreement remains in force.
- B. At the discretion of either Party, this Project Annex may be terminated upon six (6) months' advance written notice to the other Party.
- C. Implementation of activities under this Project Annex is subject to the availability of appropriated funds.

SIGNED at Casablanca, this third day of June, 2002 in duplicate.

FOR THE DEPARTMENT OF ENERGY OF
THE UNITED STATES OF AMERICA:

Spencer Abraham

FOR THE MINISTRY OF INDUSTRY,
COMMERCE, ENERGY AND MINES OF
THE KINGDOM OF MOROCCO:



14

ARRANGEMENT BETWEEN THE
DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA
AND THE
MINISTRY OF SCIENCE AND TECHNOLOGY OF THE REPUBLIC OF KOREA

**CONCERNING RESEARCH AND DEVELOPMENT IN
NUCLEAR MATERIAL CONTROL, ACCOUNTANCY, VERIFICATION,
PHYSICAL PROTECTION, AND ADVANCED CONTAINMENT AND
SURVEILLANCE TECHNOLOGIES FOR
INTERNATIONAL SAFEGUARDS APPLICATIONS**

The Department of Energy of the United States of America (DOE) and the Ministry of Science and Technology of the Republic of Korea (MOST) (hereinafter called "the Parties");

Desiring to facilitate implementation of the Agreement for Cooperation Between the Government of the United States of America and the Government of the Republic of Korea concerning Civil Uses of Atomic Energy, which was signed on November 24, 1972, and as amended on May 15, 1974;

Referring to the Agreement Relating to Scientific and Technical Cooperation Between the Government of the United States of America and the Government of the Republic of Korea (hereinafter call the "Agreement"), which was signed on July 2, 1999; and

Sharing a desire to cooperate in research, development, testing, training, and evaluation of technology, equipment, and procedures in order to improve nuclear material control, accountancy, verification, physical protection and advanced containment and surveillance technologies for international safeguards applications;

Hereby agree as follows:

ARTICLE 1

Cooperation between DOE's National Nuclear Security Administration and MOST shall be directed to improving the efficiency and effectiveness of equipment and techniques for safeguards to implement policies and procedures pursuant to the Treaty on the Non-Proliferation of Nuclear Weapons of July 1, 1968.

ARTICLE 2

Cooperation under this Arrangement may include but is not limited to:

- 2.1 Exchange of information, equipment, funding, or personnel.
- 2.2 Exchange or loan of materials, equipment, and components for evaluation and testing.
- 2.3 Joint projects for research, development, testing, training, and evaluation with respect to nuclear material control, accountancy, verification, physical protection, and advanced containment and surveillance technologies, techniques, or procedures.

ARTICLE 3

- 3.1 A Permanent Coordinating Group shall be established, with each Party designating two officials to serve as coordinators, to supervise the implementation of this Arrangement. As mutually agreed, the Permanent Coordinating Group shall meet to evaluate all aspects of the cooperation under this Arrangement. These meetings shall be held alternately in the United States and the Republic of Korea.
- 3.2 All cooperative activities to be carried out under this Arrangement shall be approved and monitored by the Permanent Coordinating Group. Each cooperative activity shall be described in an Action Sheet that shall be approved by the Permanent Coordinating Group in writing and shall be annexed to this Arrangement.
- 3.3 Technical management of the cooperation under this Arrangement shall be carried out by project leaders named by the coordinators. Project leaders shall be responsible for the working contacts between the Parties in their respective areas of cooperation.

ARTICLE 4

The following provisions shall apply concerning exchanges of equipment pursuant to this Arrangement:

- 4.1 By mutual agreement, a Party may provide equipment to be utilized in a joint activity. In such cases, the sending Party shall furnish, as soon as possible, a detailed list of the equipment to be provided, together with the relevant specifications and appropriate technical and informational documentation related to use, maintenance, and repair of the equipment.
- 4.2 Title to the equipment and necessary spare parts supplied by the sending Party for use in joint activities shall remain in the sending Party, and the property shall be

returned to the sending Party upon completion of the joint activity, unless otherwise agreed.

- 4.3 Equipment provided pursuant to this Arrangement shall be brought into operation at the host establishment only by mutual agreement between the Parties.
- 4.4 The host establishment shall provide the necessary premises for the equipment, shall provide for utilities such as electric power, water and gas, and normally shall provide materials to be tested, in accordance with technical requirements determined by the Parties by mutual agreement.
- 4.5 The responsibility and expenses for the transport of equipment and materials from the United States by plane or ship to an authorized port of entry in the Republic of Korea convenient to the ultimate destination, as well as responsibility for safekeeping and insurance en route, shall rest with DOE.
- 4.6 The responsibility and expenses for the transport of equipment and materials from the Republic of Korea by plane or ship to an authorized port of entry in the United States convenient to the ultimate destination, as well as responsibility for safekeeping and insurance en route, shall rest with MOST.
- 4.7 Equipment provided pursuant to this Arrangement for use in joint activities shall be considered to be scientific, not having a commercial character, and each Party shall make its best effort to obtain duty free entry.

ARTICLE 5

The following provisions shall apply concerning assignments and exchanges of personnel under this Arrangement:

- 5.1 Whenever an assignment or exchange of personnel is contemplated, each Party shall select personnel with skills and competence necessary to conduct the activities planned under this Arrangement. Each such exchange of personnel shall be mutually agreed to in advance by an exchange of letters between the Parties, referencing this Arrangement and its pertinent intellectual property provisions.
- 5.2 Each Party shall be responsible for the salaries, insurance, and allowances to be paid to its staff or its contractors.
- 5.3 Each Party shall pay for the travel and living expenses of its staff or its contractors while on assignment to the host Party, unless otherwise agreed.
- 5.4 Each Party shall arrange for accommodations for the other Party's staff or its contractors (and their families) on a mutually agreeable, reciprocal basis.

- 5.5 Each Party shall provide all necessary assistance to the staff of the other Party or its contractors with respect to administrative formalities.
- 5.6 The staff of each Party or its contractors shall conform to the general and special rules of work and safety regulations in force at the host establishment.

ARTICLE 6

The treatment of intellectual property created or furnished in the course of the cooperative activities under this Arrangement shall be governed by Annex I to the Agreement.

ARTICLE 7

The treatment of information and equipment requiring protection in the interest of national defense or foreign relations shall be governed by Annex II to the Agreement.

ARTICLE 8

Unless otherwise agreed, all costs resulting from cooperation pursuant to this Arrangement shall be the responsibility of the Party that incurs them. The ability of the Parties to carry out their obligations is subject to the appropriation of funds and to the laws and regulations applicable to the Parties.

ARTICLE 9

- 9.1 All information or equipment transmitted by one Party to the other Party under this Arrangement shall be appropriate and accurate to the best knowledge and belief of the transmitting Party; but neither Party warrants the appropriateness of equipment nor its suitability for any particular use or application by either Party or by any third party.
- 9.2 Information or equipment developed jointly by the Parties shall be appropriate and accurate to the best knowledge and belief of both Parties.

ARTICLE 10

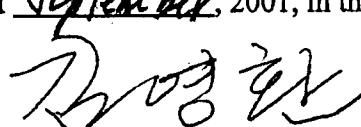
All questions related to the interpretation or application of this Arrangement shall be settled by the Parties by mutual agreement.

ARTICLE 11

- 11.1 This Arrangement shall enter into force upon the date of last signature and shall remain in force for five (5) years. This Arrangement shall be renewed automatically for further additional 5-year periods unless either Party notifies the other in writing at least six (6) months prior to the expiration of the first five-year period or any succeeding five-year period of its intent to terminate the Arrangement.
- 11.2 The Parties may amend this Arrangement by mutual written agreement.
- 11.3 This Arrangement may be terminated upon one (1) year's advance notification in writing by either Party. Such termination shall be without prejudice to any rights and interests which may have accrued under this Arrangement to either Party up to the date of termination.
- 11.4 All joint efforts and experiments not completed at the expiration or termination of this Arrangement may continue until their completion under the terms of this Arrangement.

DONE in duplicate at Vienna, on this 17 day of September, 2001, in the English language.


FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA:


FOR THE MINISTRY OF SCIENCE AND
TECHNOLOGY OF THE REPUBLIC OF
KOREA:

15



EUROPEAN COMMISSION

**TECHNICAL EXCHANGE AND COOPERATION ARRANGEMENT
BETWEEN
THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA
AND
THE EUROPEAN ATOMIC ENERGY COMMUNITY
AS REPRESENTED BY
THE COMMISSION OF THE EUROPEAN COMMUNITIES
IN THE FIELD OF
NUCLEAR-RELATED TECHNOLOGY RESEARCH AND DEVELOPMENT**

Whereas, the Department of Energy of the United States of America (USDOE) and the European Atomic Energy Community (EURATOM), represented by the Commission of the European Communities, hereinafter referred to as the "Parties";

Recognising there is a mutual interest to broaden co-operation in the field of nuclear related technology research and development; and

Desiring to ensure the safe development, maintenance, and life of nuclear reactors, the disposal of civilian radioactive waste and the nuclear fuel cycle on an international basis;

HEREBY AGREE AS FOLLOWS:

ARTICLE 1 - OBJECTIVE

The objective of this Technical Arrangement is to establish a framework for co-operation between the Parties in the field of nuclear-related technology research and development based upon mutual benefit. The co-operation is intended to occur in specific areas where the programs of the Parties complement one another as well as those in which comparability exists.

ARTICLE 2 - AREAS OF COOPERATION

The Parties desire to co-operate in those areas listed in Annex A. Other areas may be added by mutual written agreement of the Parties.

ARTICLE 3 - FORMS OF COOPERATION

Forms of co-operation under this Technical Arrangement may include, but are not limited to, the following:

- (1) The execution of joint programs and co-operative research projects, such as those involving a division of activities between the Parties, including the use of test facilities and/or computer programs sponsored by either Party.
- (2) The use by one Party of facilities which are owned by the other Party or in which research is being sponsored by the other Party.
- (3) Visits by scientists, engineers, specialist teams, individuals, professional staff, post doctorate and university staff for agreed upon periods of time in order to participate in experiments, analysis, design and other research and development activities at existing and new research centres, laboratories, engineering offices and other facilities and enterprises of each of the Parties or its associated organisations or contractors.
- (4) Possible temporary assignment of personnel of one Party, or its contractors, to the laboratory or facilities owned by the other Party or in which it sponsors research.
- (5) Meetings of various forms to discuss and exchange information on scientific and technological aspects of general or specific subjects in the areas listed in Annex A, and to identify additional co-operative actions which may be usefully undertaken.

- (6) Exchange and provision of information and data on scientific and technical activities, developments, practices and results, and on program policies and plans including exchange of proprietary information on the terms and conditions in accordance with Article 5.
- (7) Exchange and provision of samples, materials and equipment for experiments, testing and evaluation in accordance with Articles 10 and 11.
- (8) Other specific forms of collaboration may be added by mutual written agreement of the Parties.

ARTICLE 4 - MANAGEMENT

- (1) As a first step, this Technical Arrangement provides for the establishment of a DOE/EU Nuclear Technology Research and Development Steering Committee where expert groups will be established in areas of co-operation identified in Annex A.
- (2) To supervise the execution of this Technical Arrangement, each Party shall name a Principal Co-ordinator. The Principal Co-ordinators, who lead the Steering Committee noted in Article 4.1, shall meet each year, alternately in the United States and the European Community, or at such other times and places as agreed.
- (3) At their meetings, the Principal Co-ordinators shall evaluate the status of co-operation under this Technical Arrangement. This evaluation may include a review of the past year's activities and accomplishments under this Technical Arrangement, a review of the activities planned for the coming year within each of the various areas of co-operation listed in Annex A, an assessment of the balances of exchanges under this Technical Arrangement within each of the areas of co-operation listed in Annex A, and a consideration of measures required to correct any imbalances. In addition, the Principal Co-ordinators shall consider and act on any major new proposals for co-operation.
- (4) The activities referred to in Articles 3.1 and 3.2 will be defined and listed on action sheets. New co-operative projects can be defined and added to these action sheets after approval by the Principal Co-ordinators. The action sheets will specify the tasks to be undertaken, the time schedule, and the resources committed by each Party.
- (5) Day-to-day management of the co-operation under this Technical Arrangement shall be carried out by Technical Co-ordinators designated by the Principal Co-ordinators. The Technical Co-ordinators shall agree on specific details of co-operation in the technical areas listed in Annex A within policy guidelines established by the Principal Co-ordinators. The Technical Co-ordinators shall be responsible for working contacts between the Parties in their respective areas of co-operation.

ARTICLE 5 - AVAILABILITY AND DISSEMINATION OF INFORMATION

- (1) Subject to applicable laws and regulations and to its obligations to third parties, as well as to the provisions of this Technical Arrangement, each Party and its designees will undertake to make freely available to the other Party and its designee any information at its disposal which is required for the execution of this Technical Arrangement.

- (2) The Parties support the widest possible dissemination of information which they have the right to disclose, either in their possession or available to them and which is either developed jointly or intended to be provided or exchanged pursuant to this Technical Arrangement, subject to the need to protect undisclosed documentary information and intellectual property arising under this Technical Arrangement.

ARTICLE 6 - COSTS

- (1) Except as otherwise specifically agreed upon in writing by the Parties, all costs arising in the implementation of this Technical Arrangement will be borne by the Party that incurs them.
- (2) The ability of the Parties to carry out their obligations is subject to the availability of appropriated funds.

ARTICLE 7 - INTELLECTUAL PROPERTY RIGHTS

Rights related to any form of intellectual property arising under this Technical Arrangement shall be allocated in conformity with the rules and procedures set out in the Intellectual Property Rights Annex (Annex B) which is an integral parts of this Technical Arrangement.

ARTICLE 8 - DISCLAIMER

Information given by one Party to the other Party under this Technical Arrangement will be accurate to the best knowledge and belief of the Party giving it, but neither Party gives any warranty as to the accuracy of such information or will have any responsibility for the consequences of any use to which such information may be put by the other Party or by any third party.

ARTICLE 9 - EXCHANGE OF PERSONNEL

Unless otherwise agreed in writing, the following provisions shall apply concerning assignments and exchanges of personnel under this Technical Arrangement:

- (1) Each Party may, at its own expense, and subject to agreement of the other Party, observe test activities and analytical work of the other Party. Such observation may be accomplished by short-term visits or by the assignment of personnel, subject to the prior agreement of the receiving Party on each occasion.
- (2) Whenever an assignment or exchange of personnel is contemplated under this Technical Arrangement, each Party shall select qualified staff for assignment to the other Party to conduct the activities planned under this Technical Arrangement. Each such exchange of personnel shall be mutually agreed in advance by an exchange of letters between the Parties, referencing this Technical Arrangement and its pertinent intellectual property provisions.
- (3) Each Party shall be responsible for the salaries, insurance, and allowances to be paid to its staff or contractors.

- (4) Each Party shall pay for the travel and living expenses of its staff while on assignment to the host Party, unless otherwise agreed.
- (5) Each Party shall arrange for accommodations for the other Party's assigned staff or its contractors (and their families) on a mutually agreeable reciprocal basis.
- (6) The host Party shall provide all necessary assistance to the assigned staff or its contractors (and their families) of the other Party regarding administrative formalities.
- (7) The staff of each Party and its contractors shall be subject to the general and special rules of work and safety regulations in force at the host establishment.

ARTICLE 10 - EQUIPMENT

Unless otherwise agreed in writing, the following provisions shall apply to the provision of equipment by one Party to the other Party under this Technical Arrangement:

- (1) The sending Party shall supply to the other Party as soon as possible a detailed list of the equipment to be provided, together with the associated specifications and technical and informational documentation.
- (2) The equipment, spare parts, and documentation supplied by the sending Party shall remain the property of the sending Party and shall be returned to the sending Party upon completion of the mutually agreed upon activity unless otherwise agreed.
- (3) The host establishment shall provide the necessary premises and shelter for the equipment, and shall provide for electric power, water and gas, as appropriate, in accordance with all technical requirements, which shall be as mutually agreed upon by the Parties.
- (4) The sending Party, or its designee(s), shall be responsible for expenses, safekeeping and insurance during the transport of the material from the original location in the country, or its establishments in the case of Euratom, of the sending Party to the place of entry in the country of the receiving Party, or its establishments in the case of Euratom. If the sending Party elects to have the material returned, the sending Party shall be responsible for expenses, safekeeping, and insurance during the transport of the material from the original point of entry in the country of the receiving Party, or its establishment in the case of Euratom, to the final destination in the country of the sending Party, or its establishment in the case of Euratom.
- (5) The receiving Party, or its designee(s), shall be responsible for expenses, safekeeping, and insurance during the transport of the material from the place of entry in the country of the receiving Party, or its establishments in the case of Euratom, to the final destination in the country of the receiving Party, or its establishments in the case of Euratom. If the sending Party elects to have the material returned, the receiving Party shall be responsible for expenses, safekeeping, and insurance during the transport of the material from the final destination in the country of the receiving Party, or its establishment in the case of Euratom, to the original point of entry in the country of the receiving Party, or its establishment in the case of Euratom.

- (6) The equipment provided by the sending Party for carrying out mutually agreed-upon activities shall be considered to be scientific, not having a commercial character.

ARTICLE 11 - SAMPLES AND MATERIALS

Unless otherwise agreed in writing, the following provisions shall apply to the transportation and use of samples and materials under this Technical Arrangement:

- (1) Unless otherwise agreed by the Parties prior to delivery, samples and materials provided by the sending Party to the receiving Party shall be used for experiments, testing and evaluation and shall not be returned to the sending Party.
- (2) Where one Party requests that a sample or material be provided by the other Party, the Party making the request shall bear all costs and expenses associated with the transportation of the sample or material from the location of the sending Party to the final destination.
- (3) Each Party shall promptly disclose to the other Party all information arising from the examination or testing of samples or materials exchanged under this Technical Arrangement. Proprietary information, as defined in Annex B, section III., which was developed prior to or outside the scope of this Technical Arrangement, shall remain proprietary information even though it is contained in the results of an examination or testing of samples or materials. Such information shall be identified as proprietary by the Party asserting its proprietary nature as soon as possible after disclosure of all information arising from the examination or testing is made to such Party and the other Party shall be immediately advised of that identification. All information identified as proprietary shall be controlled as provided under Annex B, section III. It is further understood and agreed that one Party providing samples or materials to the other Party may also provide a partial or complete list of the types of information which will arise from the examination or testing of such samples or materials and which is proprietary information as defined in Annex B, section III, and all such proprietary information is to be controlled as set out in Annex B. section III.

ARTICLE 12 - GENERAL PROVISIONS

- (1) Collaboration and activities under this Technical Arrangement shall be subject to the applicable laws and regulations, policies and programs of the Parties.
- (2) All questions or disputes related to the interpretation or implementation of this Technical Arrangement shall be settled by the Parties by mutual agreement.

Annex A

Areas of Co-operation

A – NUCLEAR ENERGY RESEARCH, INCLUDING INNOVATIVE OR REVISITED REACTOR CONCEPTS

- new reactor design (proliferation resistant reactors, high efficiency reactors, low power reactors, economics, safety, instrumentation, concepts to improve performance and operation, simplify the design, enhance safety and reduce cost, reduction in the construction cost), including: high temperature reactors, fast neutron reactors, small and/or other reactor concepts
- fundamental nuclear science (material, chemical and computational science)

B - PLANT LIFE EXTENTION AND MANAGEMENT (PLANT MODERNIZATION) & OPTIMIZATION

- management of the long-term effects of nuclear plant component aging (steam generators, reactor pressure vessel and internals, cables, piping, pumps, valves)
- optimization of nuclear power plant generation capacity (digital I&C upgrades, advanced sensor technologies, advanced monitoring, diagnostics and control systems)
- preventing damage to reactor cores
- plant performance
- probabilistic safety assessment (PSA level 1)
- human performance (man-machine interface and organization of safety)
- multiphase thermal-hydraulics and coupling with neutronics

C – ACCELERATOR TRANSMUTATION OF WASTE (ATW)

- lifetimes of material and components
- reliability and availability of the ATW system
- operational safety of the ATW system (consistent with regulatory requirements)
- degree of partitioning and separation achievable for uranium, transuranics and long lived fission products produced)
- spallation target and Pb-Bi coolant loop

D - INTEGRITY OF REACTOR COMPONENTS

- non-destructive testing (e.g., holography; acoustic emission gamma, X-ray, ultrasonic and eddy current testing)
- validation of inspection methods including in-service inspection and risk-informed approaches

- critical industrial component testing and evaluation
- high-temperature corrosion, and creep fatigue
- aged materials characteristics (including irradiation testing at the High Flux Reactor(HFR))
- early fault diagnosis
- behaviour of materials under dynamic loading
- seismic resistance

E - SEVERE ACCIDENTS MANAGEMENT AND REACTOR CONTAINMENT PERFORMANCE

- analytical investigations on in-vessel phenomena (e.g., core degradation, FCI, corium relocation, lower head load, fission product and hydrogen releases)
- analytical investigations on ex-vessel phenomena (e.g., corium spreading and cooling, hydrogen dispersion and burns)
- fission products behaviour (release, transport, deposition and resuspension in circuit components, deposition in containment, chemistry)
- leak tightness of concrete structures
- PSA Level 2

F - FUELS

- advanced nuclear fuel development
- nuclear fuel behaviour (including high burn-up effects on fuel pin thermomechanical properties, behaviour in transients, consequences for waste)
- new fuel cycle concepts
- revisited fuel cycle concepts (e.g., thorium fuel cycle)

G - HIGH LEVEL WASTE MANAGEMENT

- management strategies
- deep geological disposal (e.g., repository technology, long-term behavior of repository components, performance assessment studies)
- partitioning and transmutation (aqueous and dry separation technologies, preparation of irradiation targets)
- behaviour of spent fuel under conditions of long term storage
- radiotoxicity

- basic actinides research
- accelerator driven systems (ADS)

H – ISOTOPE DEVELOPMENT WITH NUCLEAR MEDICINE APPLICATIONS

- isotopes production and availability
- radio-isotope research
- boron neutrons capture therapy
- alpha-emitting isotopes
- training

I - URANIUM PROGRAMMES

- highly enriched uranium equipment shutdown and inventory disposition
- maintenance of leased and non-leased facilities including corrective actions and nuclear safety
- pre-existing liabilities
- depleted uranium hexafluoride cylinders and maintenance
- depleted uranium hexafluoride conversion and management project

J - RADIOPROTECTION

- radiobiology
- epidemiology
- dosimetry
- radioecology
- emergency Management
- risk Assessment and Management

Annex B

Intellectual Property Rights

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this Technical Arrangement and relevant project agreements. The Parties agree to notify one another in a timely fashion of any inventions or copyrighted works arising under this Technical Arrangement and to seek protection for such intellectual property in a timely fashion. Rights to such intellectual property shall be allocated as provided in this Annex.

1. SCOPE

- (1) This Annex is applicable to all co-operative activities undertaken by the Parties or their participants pursuant to this Technical Arrangement, except as otherwise specifically agreed by the Parties.
- (2) For purposes of this Technical Arrangement, "intellectual property" shall have the meaning found in Article 2 of the Convention Establishing the World Intellectual Property Organisation, done at Stockholm, July 14, 1967.
- (3) This Annex addresses the allocation of rights, interests, and royalties between the Parties or their participants. Each Party shall ensure that the other Party or its participants can obtain the rights to intellectual property allocated in accordance with this Annex. This Annex does not otherwise alter or prejudice the allocation between a Party and its nationals, which shall be determined by that Party's laws and practices.
- (4) Disputes concerning intellectual property arising under this Technical Arrangement should be resolved through discussions between the relevant participants, or, if necessary, the Parties. Upon mutual agreement of the Parties, the participants may submit a dispute to an arbitral tribunal for binding arbitration. Unless the participants agree otherwise in writing, the arbitration rules of UNCITRAL shall govern.
- (5) Termination or expiration of this Technical Arrangement shall not affect rights or obligations under this Annex.

2. ALLOCATION OF RIGHTS

- (1) Each Party shall be entitled to a non-exclusive, irrevocable, royalty-free license in all countries to reproduce, publicly distribute and translate scientific and technical journal articles, non-proprietary scientific reports, and books directly arising from co-operation under this Technical Arrangement. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate the names of the authors of the work unless an author explicitly declines to be named. Each Party or its participants shall have the right to review a translation prior to public distribution.

- (2) Rights to all forms of intellectual property, other than those rights described in section II.A above, shall be allocated as follows:
- (i) Visiting researchers, for example, scientists visiting primarily in furtherance of their education, shall receive intellectual property rights under arrangements with their host institutions. In addition, each visiting researcher named as an inventor shall be entitled to awards, bonuses, benefits, or any other rewards, in accordance with the policies of the host institution.
 - (ii)(a) For intellectual property which is or may be created during joint research, the Parties or their participants shall jointly develop a technology management plan. The technology management plan shall consider the relative contributions of the Parties and their participants, the benefits of licensing by territory or for fields of use, requirements imposed by the Parties' domestic laws, and other factors deemed appropriate.
 - (ii)(b) If the Parties or their participants did not agree to a joint technology management plan in the initial research co-operation agreement and cannot reach an agreement within a reasonable time, not to exceed six months, from the time a Party becomes aware of the creation or likely creation of the intellectual property in question as a result of the joint research, the Parties or their participants shall resolve the matter in accordance with the provisions of section I.D. Pending resolution of the matter, such intellectual property shall be owned jointly by the Parties or their participants, but shall be commercially exploited (including product development) only by mutual agreement.
 - (ii)(c) "Joint research" means research that is implemented with financial support from one or both Parties and that involves collaboration by participants from both EURATOM and the United States of America and is designated as joint research in writing by the Parties or their scientific and technological organisations and agencies, or in the case where there is funding by only one Party, by that Party and the participants in that project.
 - (ii)(d) In the event that either Party believes that a particular joint research project under this Technical Arrangement has led or will lead to the creation or furnishing of a type of intellectual property that it protects but is not protected throughout the territory of the other Party, the Parties shall immediately hold discussions to determine the allocation of the rights to the said intellectual property. The joint activities in question will be suspended during the discussions, unless otherwise agreed by the Parties thereto. If no agreement can be reached within a three-month period from the date of the request for discussions, co-operation on the project in question will be suspended or terminated at the request of either Party.

3. PROPRIETARY INFORMATION

In the event that information identified in a timely fashion as proprietary is furnished or created under the Technical Arrangement, each Party and its participants shall protect such information in accordance with applicable laws, regulations, and administrative practices. Without prior written consent, none of the Parties shall disclose any proprietary information except to employees, government personnel, and prime and subcontractors.

Such disclosures shall be for use only within the terms of their permits or licenses with the Parties or the scope of work of their contracts with the Parties and in work relating to the subject matter of the information so disseminated. The Parties shall impose, or shall have imposed, through appropriate arrangements such as research contracts, grant documents, technology management plans, etc, an obligation on all participants receiving such information to keep it confidential.

If one of the Parties becomes aware that, under its laws or regulations, it will be, or may reasonably be expected to become, unable to meet the non-disclosure provisions, it shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action. Information may be identified as proprietary if it is secret in the sense that it is not, as a body or in the precise configuration or assembly of its components, generally known or readily accessible by lawful means; has actual or potential commercial value by virtue of its secrecy; has been subject to steps that were reasonable under the circumstances by the person lawfully in control, to maintain its secrecy; and not already in the possession of the recipient without an obligation concerning its confidentiality.

ARTICLE 13 - DURATION AND TERMINATION

- (1) This Technical Arrangement will enter into force upon signature and shall remain in force for a period of five (5) years. This Technical Arrangement shall be automatically extended for additional five (5) year periods unless either Party notifies the other in writing six months prior to the expiration of the first five-year period or each succeeding five-year period of its intent to terminate this Technical Arrangement.
- (2) This Technical Arrangement may be amended by mutual written agreement of the Parties.

Done in duplicate at Brussels this 6 March 2003.

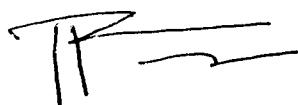
FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA:

Secretary of Energy,
Spencer Abraham.



FOR THE EUROPEAN ATOMIC ENERGY
COMMUNITY AS REPRESENTED BY
THE COMMISSION OF THE EUROPEAN
COMMUNITIES:

Commissioner,
Philippe Busquin.



16

IMPLEMENTING ARRANGEMENT
BETWEEN
THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA
AND
THE DEPARTMENT OF TRADE AND INDUSTRY OF THE UNITED KINGDOM OF
GREAT BRITAIN AND NORTHERN IRELAND
TO COOPERATE IN THE FIELD OF FOSSIL ENERGY TECHNOLOGY

WHEREAS,

The Department of Energy of the United States of America (DOE) and the Department of Trade and Industry of the United Kingdom of Great Britain and Northern Ireland (DTI), hereinafter referred to as the "Participants",

Entered into a Memorandum of Understanding on Collaboration in Energy Research and Development on November 6, 2000 (the "the MOU");

Share an interest in joint planning and exchange of information and personnel in the field of cleaner coal technology, and for exploring opportunities for expanded fossil energy utilization, including clean coal research, development, and demonstration of new technologies;

Recognize the contributions of fossil fuel technologies, including advanced materials and power systems technology development, to fostering fuel diversity, enhancing environmental protection and energy security, and expanding opportunities for international trade; and

Realize they will benefit mutually from collaboration in the deployment and use of advanced fossil fuel technologies.

The Participants have reached the following understanding:

SECTION 1 - SCOPE AND OBJECTIVE

1. In accordance with Section 4 of the MOU, the Participants establish a framework for collaboration in energy research and development in the field of advanced fossil energy technologies.

SECTION 2 - TECHNICAL AREAS OF COOPERATION

- 2.1. Technical areas for possible cooperation under this Implementing Arrangement include research, development and demonstration activities related to both base and enabling technologies, including the underlying science and engineering; crosscutting research and development activities, such as advanced materials, along with assessment of technology options and their economics. Areas of collaboration may include:
- 2.1.1. Environmentally friendly discovery, characterization, production, processing and transportation technologies for coal;
- 2.1.2. Advanced, high-efficiency power systems, including:
- gasification combined cycle systems
 - advanced pulverized coal combustion systems
 - fluidized-bed combustion systems
 - fuel cells
 - advanced gas turbines
 - hybrid systems
 - distributed generation;
- 2.1.3. Advanced process and environmental control systems for conventional and advanced power systems, including:
- fuel processing (reformers, shift reactors, membrane separations)
 - gas clean-up (ammonia [NH₃], hydrogen sulfide [H₂S], alkali, hydrogen chloride [HCl], trace elements)
 - particulates
 - sulfur oxide (SO_x)
 - nitrogen oxide (NO_x)
 - hazardous air pollutants
 - greenhouse gases
 - other waste streams;
- 2.1.4. Advanced central-station power and/or fuels production systems with very low emissions;
- 2.1.5. Sequestration options for carbon dioxide (CO₂) and other greenhouse gases from fossil fuel-based systems, including capture, storage, and utilization;
- 2.1.6. Models and systems for design, manufacture and performance of advanced power systems, including:

- component design, performance and life
 - advanced manufacturing techniques
 - virtual plant simulation, including economics
 - RAMO (reliability, availability, maintainability, and operability), control and instrumentation; and
- 2.1.7. High-quality transportation fuels and chemicals.
- 2.2. Other related technologies, such as waste minimization/utilization from fossil fuel production/use (e.g., coal combustion by-products), and systems for distributed generation (e.g., power electronics).

SECTION 3 - FORMS OF COLLABORATION

- 3.1. The Participants plan to cooperate in a manner that will facilitate joint activities and market deployment of fossil energy technologies in an environmentally responsible way. Pursuant to Section 3 of the MOU, these joint activities may include, but need not be limited to:
- 3.1.1. Consultations by the Participants' senior program officials to permit joint planning of cooperative projects for which the participating organizations agree to share the tasks, the costs, or both. Pursuant to Section 9 of the MOU, any costs arising from any direct collaboration between the Participants will be borne by the Participant that incurs them;
- 3.1.2. Joint technical evaluation of fossil energy technologies. In recognition of the worldwide role of coal, the Participants will cooperate to facilitate the application of technologies to resolve environmental and other technical issues concerning coal use;
- 3.1.3. Exchange visits to mutually agreed-upon United States and United Kingdom commercial and clean coal technology research, development, and demonstration program facilities pertaining to the technical areas and issues described in Section 2 above;
- 3.1.4. Training and internship program support for personnel in the fossil energy technologies cited in Section 2 above to strengthen related human resources and government, university, and industry laboratory infrastructure, and to facilitate joint government and industry activities;
- 3.1.5. Joint development of programs to facilitate partnerships between fossil energy sectors of the United States and the United Kingdom.

- 3.2. Other forms of cooperation may be added by written arrangement of the Participants in the form of an exchange of letters between the Lead Coordinators for the MOU.

SECTION 4 - MANAGEMENT

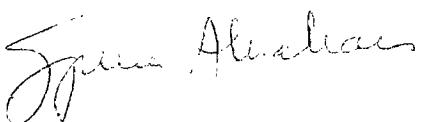
- 4.1. The Participants hereby establish a Joint Coordinating Committee for Fossil Energy Technology (JCC) to direct activities under this Implementing Arrangement. The membership of the JCC will consist of two representatives of each Participant.
- 4.2. The JCC members will meet at least annually to discuss research priorities and new initiatives, improve cost-effectiveness and reduce unnecessary duplication of effort between the Participants, and to plan the exchange of technical data, personnel, and/or samples. JCC members will meet at mutually agreed locations. The chief representative of the Participant that is hosting the meeting will chair the meeting. The JCC will coordinate its activities with the Lead Coordinators designated under Section 6 of the MOU.
- 4.3. Each task undertaken under this Implementing Arrangement will be covered by a work plan that is approved by the JCC, which will then designate Co-Project Officers for that specific task.

SECTION 5 - EFFECTIVE DATE AND TERMINATION

- 5.1. This Implementing Arrangement is subject to and governed by the MOU.
- 5.2. This Implementing Arrangement will enter into operation upon signature by the Participants and remain in operation so long as the MOU remains in operation, unless earlier terminated in accordance with Section 5.3 below.
- 5.3. The Participants may amend this Implementing Arrangement by written arrangement. Either Participant may terminate this Implementing Arrangement at any time upon 6 months written notice to the other Participant.

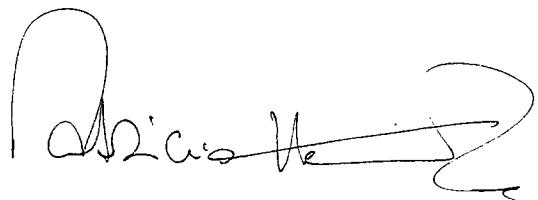
Done in duplicate

FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA:



SPENCER ABRAHAM
SECRETARY

FOR THE DEPARTMENT OF TRADE AND
INDUSTRY OF THE UNITED KINGDOM OF
GREAT BRITAIN AND NORTHERN
IRELAND:



PATRICIA HEWITT
SECRETARY OF STATE FOR TRADE AND
INDUSTRY

Date: March 10, 2003

17

**AGREEMENT FOR COOPERATION BETWEEN THE EUROPEAN ATOMIC ENERGY COMMUNITY
REPRESENTED BY THE COMMISSION OF THE EUROPEAN COMMUNITIES AND THE
DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA IN THE FIELD OF FUSION
ENERGY RESEARCH AND DEVELOPMENT**

The European Atomic Energy Community (EURATOM), represented by the Commission of the European Communities, and the Department of Energy of the United States of America (DOE), (hereinafter referred to collectively as "the Parties");

Whereas the Agreement for Cooperation in the Peaceful Uses of Nuclear Energy between the European Atomic Energy Community and the United States of America, signed at Brussels November 7, 1995, and March 29, 1996, provides for cooperation in the peaceful uses of nuclear energy, including controlled thermonuclear fusion, and, in particular, contributions towards multilateral projects;

Desiring to continue the long history of valuable collaboration between the Parties and to enhance the tradition of close and continuing cooperation in the field of fusion energy which has occurred under the Agreement in the Field of Controlled Thermonuclear Fusion (DOE-EURATOM Agreement) signed at Brussels December 15, 1986; and in multilateral frameworks, especially ITER; and

Desiring to continue to promote the development of fusion energy as a potentially environmentally acceptable, economically competitive, and virtually limitless source of energy,

HAVE AGREED AS FOLLOWS:

*Article I
Objective*

The objective of this Agreement is to continue and intensify cooperation between the Parties in the areas covered by their respective fusion programs, on the basis of mutual benefit and overall reciprocity, in order to develop the scientific understanding and technological capability underlying a fusion energy system.

*Article II
Areas of Cooperation*

The areas of cooperation under this Agreement may include the following:

1. tokamaks, including the large projects of the present generation and activities related to those of the next generation;
2. alternative lines to tokamaks;
3. magnetic fusion energy technology;
4. plasma theory and applied plasma physics;
5. program policies and plans; and
6. other areas as mutually agreed in writing.

Article III
Forms of Cooperation

1. The forms of cooperation under this Agreement may include, but are not limited to, the following:
 - a. exchange and provision of information and data on scientific and technical activities, developments, practices and results, and on program policies and plans, including exchange of undisclosed information on the terms and conditions in accordance with Articles VI and VII;
 - b. exchange of scientists, engineers and other specialists for agreed periods of time in order to participate in experiments, analysis, design and other research and development activities in accordance with Article VIII;
 - c. organization of seminars and other meetings to discuss and exchange information on agreed topics in the areas listed in Article II, and to identify cooperative actions which may be usefully undertaken in accordance with Article V;
 - d. exchange and provision of samples, materials, equipment (instruments and components) for experiments, testing and evaluation in accordance with Articles IX and X;
 - e. execution of joint studies, projects or experiments including their joint design, construction and operation;
 - f. establishment of data links; and
 - g. other specific forms of cooperation as mutually agreed in writing.
2. The Parties shall coordinate the activities, as appropriate, under this Agreement, with other international fusion research and development activities, in order to minimize duplication of effort. Nothing in this Agreement will be construed to prejudice existing or future arrangements for cooperation between the Parties.

Article IV
Coordinating Committee and Executive Secretaries

1. The Parties will establish a Coordinating Committee to coordinate and supervise the conduct of activities under this Agreement. The Coordinating Committee will consist of up to twelve (12) members, half of whom will be appointed by each Party. The Coordinating Committee will meet annually, alternately in the United States and in the European Union, or at other agreed times and places. The Head of the Delegation of the receiving Party will chair the meeting.
2. The Coordinating Committee will review the progress and plans of activities under this Agreement, and propose, coordinate and approve future cooperative activities that are within the scope of this Agreement with regard to technical merit and level of effort to ensure mutual benefit and overall reciprocity within the Agreement.

3. All decisions of the Coordinating Committee will be by unanimity. The Coordinating Committee delegation from each Party shall have one vote, to be cast by the Head of the Delegation.
4. Each Party will nominate an Executive Secretary to act on its behalf during periods between meetings of the Coordinating Committee in all matters concerning cooperation under this Agreement. The Executive Secretaries will be responsible for day-to-day management of the cooperation.

*Article V
Project Agreements*

When the Coordinating Committee agrees to undertake a cooperative activity, it will approve a Project Agreement to this Agreement and subject to its terms. Each Project Agreement shall list the participants, and include detailed provisions for implementation of the cooperative activity, including but not limited to technical scope, management, applicable decontamination responsibility, exchange of undisclosed information, exchange of equipment, treatment of intellectual property, total costs, cost-sharing and schedule, as appropriate.

*Article VI
Availability and Dissemination of Information*

1. Subject to applicable laws and regulations and to provisions of this Agreement, each Party and its designees shall undertake to make freely available to the other Party and its designees any information at its disposal which is required for the execution of this Agreement.
2. The Parties shall support the widest possible dissemination of information which they have the right to disclose, either in their possession or available to them, and which is either developed jointly or intended to be provided or exchanged pursuant to this Agreement, subject to the need to protect undisclosed information and the need to protect intellectual property arising under this Agreement.
3. Information transmitted by one Party to the other Party under this Agreement shall be accurate to the best knowledge and belief of the transmitting Party, but the transmitting Party does not warrant the suitability of the information transmitted for any particular use or application by the receiving Party or by any third party. Information developed jointly by the Parties shall be accurate to the best knowledge and belief of both Parties. Neither Party warrants the accuracy of the jointly developed information or its suitability for any particular use or application by either Party or by any third party.

*Article VII
Intellectual Property*

The protection and allocation of intellectual property created or furnished in the course of collaborative activities under this Agreement will be governed by the provisions in Annex A, which shall form an integral part of this Agreement and shall apply to all activities conducted under this Agreement.

Article VIII
Exchanges and Assignments of Personnel

The following provisions shall apply concerning exchanges or assignments of personnel under this Agreement:

1. Each Party or participant shall ensure the selection of qualified personnel with skills and competence necessary to conduct the activities planned under this Agreement. Each such exchange or assignment of personnel shall be mutually agreed in advance by an exchange of letters between the Parties or participants, referencing this Agreement and its pertinent intellectual property provisions.
2. Each Party or participant shall be responsible for the salaries, insurance, and allowances to be paid to its exchanged or assigned personnel.
3. The sending Party or participant shall pay for the travel and living expenses of its exchanged or assigned personnel staying at the host establishment, unless otherwise agreed.
4. The receiving Party or participant shall arrange for adequate accommodations for the other Party's or participant's exchanged or assigned personnel (and their families) on a mutually agreeable, reciprocal basis.
5. The receiving Party or participant shall provide all necessary assistance to the exchanged or assigned personnel of the other Party or participant regarding administrative formalities (e.g., acquiring visas).
6. Each Party or participant shall ensure that the exchanged or assigned personnel conform to the general rules of work and safety regulations in force at the host establishment.
7. Each Party or participant may, at its own expense, observe test activities and analytical work of the other Party or participant in the areas of cooperation defined in Article II. Such observation may be exercised by short-term visits or by the assignment of personnel, subject to the prior agreement of the receiving Party or participant on each occasion.

Article IX
Exchanges of Equipment, Samples, etc.

Both Parties agree that in the event equipment, instruments, samples, materials or necessary spare parts (hereinafter referred to as "the equipment, etc.") are to be exchanged, loaned or supplied by one participant to the other, the following provisions shall apply covering the shipment and use of the equipment, etc.:

1. The sending participant shall supply as soon as possible a detailed list of the equipment, etc., to be provided, with the relevant specifications and technical and informational documentation.
2. The equipment, etc. supplied by the sending participant shall remain its property and shall be returned to the sending participant on a date to be determined by the Coordinating Committee unless otherwise agreed in the project agreement referred to under article V.

3. The equipment, etc. shall be brought into operation at the host establishment only by mutual agreement between the participants.
4. The receiving participant shall provide the necessary premises for the equipment, etc. and shall provide for electrical power, water, gas, etc., in accordance with technical requirements, which shall be mutually agreed.

Article X
General Provisions

1. Each Party shall conduct the activities provided for in this Agreement subject to its applicable laws and regulations, and shall provide resources subject to the availability of appropriated funds.
2. Unless otherwise specifically agreed in writing by the Parties within the framework of the Coordinating Committee, all costs resulting from cooperation under this Agreement shall be borne by the Party that incurs them.
3. All questions of interpretation or implementation relating to the Agreement arising during its term shall be resolved by agreement of the Parties.
4. This Agreement shall apply in so far as EURATOM is concerned, to the territories to which the Treaty establishing EURATOM applies and to the territories of the countries participating in the EURATOM fusion program as fully associated third States.

Article XI
Duration, Amendment and Termination

1. This Agreement shall enter into force upon the latter date of signature and shall remain in force for five (5) years. Unless one of the Parties notifies the other Party in writing of its intention to terminate this Agreement at least six months before its expiration, this Agreement shall be extended automatically for an additional five (5) years.
2. This Agreement may be amended by written agreement of the Parties.
3. All joint efforts and experiments not completed at the termination or expiration of this Agreement may be continued until their completion under the terms of this Agreement.
4. This Agreement and any Project Agreement hereunder may be terminated at any time at the discretion of either Party upon six (6) months' advance notification in writing by the Party seeking to terminate the Agreement or Project Agreement. Such termination shall be without prejudice to the rights that may have accrued under this Agreement or Project Agreement to either Party up to the date of the termination.

POR EL DEPARTAMENTO DE ENERGÍA, POR Y EN
NOMBRE DEL GOBIERNO DE LOS ESTADOS
UNIDOS DE AMERICA

FUR DAS DEPARTMENT OF ENERGY FÜR UND IM
NAMEN DER REGIERUNG DER VEREINIGTEN
STAATEN

FOR AMERIKAS FORENEDE STATER
ENERGIMINISTERIUM OG PA DERES REGERINGS
VEGNE

AMERIKAN YHDYSVALTOJEN
ENERGIAMINISTERIÖN JA AMERIKAN
YHDYSVALTOJEN HALLITUksen PUOLESTA

POUR LE DOE, AU NOM ET POUR LE COMPTE DU
GOUVERNEMENT DES ETATS-UNIS
D'AMERIQUE

I-IA TO YHOYPI-EIO ΕΝΕΡΓΕΙΑΣ ΚΑΙ ΕΞ
ΟΝΟΜΑΤΟC THC KYΒEPNHCHC TΩN HNOMENON
ΠΟΛΙΤΕΙΩN THC AMEPIKHC

FOR THE DEPARTMENT OF ENERGY FOR AND
ON BEHALF OF THE GOVERNMENT OF THE
UNITED STATES OF AMERICA

PER IL DIPARTIMENTO DELL'ENERGIA IN NOME
E PER CONTO DEL GOVERNO DEGLI STATI UNITI
D'AMERICA

VOOR HET DEPARTMENT OF ENERGY VOOR EN
NAMENS DE REGERING VAN DE VERENIGDE
STATEN VAN AMERIKA

PELO DEPARTMENT OF ENERGY EM NOME E
POR CONTA DO GOVERNO DOS ESTADOS
UNIDOS DA AMERICA

FÖR ENERGIDEPARTEMENTET FÖR AMERIKAS
FÖRENTA STATERS REGERING OCH PA DESS
VÄGNAR

POR LA COMUNIDAD EUROPEA DE LA ENERGÍA
ATÓMICA, REPRESENTADA POR LA COMISIÓN DE LAS
COMUNIDADES EUROPEAS

FUR DIE EUROPÄISCHE ATOMGEMEINSCHAFT,
VERTRETEREN DURCH DIE KOMMISSION DER
EUROPÄISCHEN GEMEINSCHAFTEN

FOR DET EUROPÆISKE ATOMENERGIFÆLLESSKAB,
REPRÆSENTERET VED KOMMISSIONEN FOR DE
EUROPÆISKE FÆLLESSKABER

EUROOPAN YHTEISÖJEN KOMISSION EDUSTAMAN
EUROOPAN ATOMIENERGIAYHTEISÖN PUOLESTA

POUR LA COMMUNAUTE EUROPÉENNE DE L'ENERGIE
ATOMIQUE, REPRÉSENTÉE PAR LA COMMISSION DES
COMMUNAUTES EUROPÉENNES

I-IA THN ΕΥΡΩΠΑΪΚΗ KOIΝΟΤΗΤΑ ATOMIKΗΣ
ΕΝΕΡΓΕΙΑΣ EKPROΣΩΠΟΥΜΕΝΗ AΠΟ THN ENITRONH
TΩN EΥΡΩΠΑΪΚΩN KOINOTHTRN

FOR THE EUROPEAN ATOMIC ENERGY COMMUNITY
REPRESENTED BY THE COMMISSION OF THE EUROPEAN
COMMUNITIES

PER LA COMUNITÀ EUROPEA DELL'ENERGIA ATOMICICA
RAPPRESENTATA DALLA COMMISSIONE DELLE
COMUNITÀ EUROPEE

VOOR DE EUROPESE GEMEENSCHAP VOOR
ATOOMENERGIE VERTEGENWOORDIGD DOOR DE
COMMISSIE VAN DE EUROPESE GEMEENSCHAPPEN

PELA COMUNIDADE EUROPEIA DA ENERGIA ATÓMICA.
REPRESENTADA PELA COMISSÃO DAS COMUNIDADES
EUROPEIAS

PA EUROPEiska ATOMENERGIGEMENSKAPENS VÄGNAR
FÖRETRÄDD AV EUROPEiska GEMENSKAPERNAS
KOMMISSION

Miembro de la Comisión
Medlem af Kommissionen
Mitglied der Kommission
Mέλος της Επιτροπής
Member of the Commission
Membre de la Commission
Membro della Commissione
Lid van de Commissie
Membro da Comissão
Komission jäsen
Ledamot av kommissionen

ANNEX A

INTELLECTUAL PROPERTY RIGHTS

Rights to intellectual property created or furnished under this Agreement shall be allocated as follows:

I. Application

This Annex is applicable to all cooperative activities undertaken pursuant to this Agreement, except as otherwise specifically agreed.

II. Ownership, Allocation and Exercise of Rights

- A. For purposes of this Agreement "Intellectual Property" shall have the meaning found in Article 2 of the Convention establishing the World Intellectual Property Organization, done at Stockholm, 14 July 1967.
- B. This Annex addresses the allocation of rights, interests and royalties between the Parties and participants. Each Party shall ensure that the other Party may obtain the rights to intellectual property allocated to it in accordance with this Annex. This Annex does not otherwise alter or prejudice the allocation between a Party and its nationals, which shall be determined by that Party's laws and practices.
- C. Termination or expiry of this Agreement shall not affect rights or obligations under this Annex.
- D. (1) In the case of cooperative activities between the Parties, intellectual property arising from joint research, i.e., research supported by both Parties, shall be treated in a Technology Management Plan (TMP) according to the following principles:
 - (a) The Parties shall notify each other within a reasonable time of any intellectual property rights arising under this Agreement (or relevant implementing arrangements).
 - (b) Unless otherwise agreed, rights and interests in intellectual property created during joint research shall be exploitable by either Party without territorial restriction.
 - (c) Each Party shall seek protection for the intellectual property to which it obtains rights and interests under the TMP in a timely fashion.
 - (d) Each Party shall have a non-exclusive, irrevocable, royalty-free license to use any intellectual property arising under this Agreement for research and development purposes only.
 - (e) Visiting researchers shall receive intellectual property rights and royalty shares earned by the host institutions from licensing of such intellectual property rights under the policies of the host institutions.
- (2) In all other cases, to the extent required by its laws and regulations, each Party shall require all its participants to enter into specific agreements concerning

the implementation of joint research and the respective rights and obligations of the participants. With respect to intellectual property, the agreements will normally address, among other things, ownership, protection, user rights for research and development purposes, exploitation and dissemination, including arrangements for joint publication, the rights and obligations of visiting researchers and dispute settlement procedures. The agreements may also address foreground and background information, licensing and deliverables.

- E. While maintaining the conditions of competition in areas affected by this Agreement, each Party shall endeavor to ensure that rights acquired pursuant to this Agreement and arrangements made under it are exercised in such a way as to encourage, in particular, (i) the use of information created, or otherwise made available, under this Agreement and its dissemination insofar as this is in accordance both with the conditions set out in this Agreement, the provisions of Section IV hereof and any rules which may be in force under the Parties' domestic laws governing treatment of sensitive or confidential information in the nuclear field, and (ii) the adoption and implementation of international standards.

III. Copyright Works

Consistent with the terms of this Agreement, copyright belonging to the Parties or to participants shall be accorded treatment consistent with the Agreement on Trade-Related Aspects of Intellectual Property Rights administered by the World Trade Organization.

IV. Scientific Literary Works

Subject to the treatment provided for undisclosed information in Section V, the following procedures shall apply:

- A. Each Party shall be entitled to a non-exclusive, irrevocable, royalty-free license in all countries to translate, reproduce and publicly distribute information contained in scientific and technical journals, articles, reports, books, or other media, directly arising from joint research pursuant to this Agreement by or on behalf of the Parties.
- B. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate the names of the authors of the work unless an author explicitly declines to be named. They shall also bear a clearly visible acknowledgment of the cooperative support of the Parties.

V. Undisclosed Information

A. Documentary Undisclosed Information

1. Each Party and the participants shall identify at the earliest possible moment the information that they wish to remain undisclosed in relation to this Agreement, taking account, *inter alia*, of the following criteria:

– the information is secret in the sense that it is not, as a body or in the precise configuration or assembly of its components, generally known or readily accessible by lawful means;

- the information has actual or potential commercial value by virtue of its secrecy; and
- the information has been subject to steps that were reasonable under the circumstances by the person lawfully in control, to maintain its secrecy.

The Parties or the participants may in certain cases agree that, unless otherwise indicated, parts or all of the information provided, exchanged or created in the course of joint research pursuant to this Agreement may not be disclosed.

2. Each Party or participant shall ensure that undisclosed information under this Agreement and its ensuant privileged nature is readily recognizable as such by the other Party or participant, for example, by means of an appropriate marking or restrictive legend. This also applies to any reproduction of the said information, in whole or in part.

A Party or participant receiving undisclosed information pursuant to such agreement shall respect the privileged nature thereof. These limitations shall automatically terminate when this information is disclosed by the owner without restriction.

3. Undisclosed information communicated under this Agreement may be disseminated by the receiving Party or participant to persons employed by the receiving Party or participant including its contractors, and other concerned departments of the Party or participant authorized for the specific purposes of the joint research under way, provided that any undisclosed information so disseminated shall be protected to the extent provided by each Party's laws and regulations and shall be readily recognizable as such, as set out above.

B. Non-Documentary Undisclosed Information

Non-documentary undisclosed or other confidential or privileged information provided in seminars and other meetings arranged under the Agreement, or information arising from the attachment of staff, use of facilities, or joint projects, will be treated by the Parties or their designees according to the principles specified for documentary information in this Agreement, provided, however, that the recipient of such undisclosed or other confidential or privileged information has been made aware in writing of the confidential character of the information communicated not later than the time such a communication is made.

C. Control

Each Party shall endeavor to ensure that undisclosed information received by it under this Agreement shall be controlled as provided herein. If one of the Parties becomes aware that it will be, or may be reasonably expected to become, unable to meet the non-dissemination provisions of paragraphs A and B above, it shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

VI. Dispute Settlement and New Types and Unforeseen Intellectual Property

- A. Disputes between the Parties concerning intellectual property shall be resolved in accordance with Article 12 of the Agreement for Cooperation in the Peaceful Uses of Nuclear Energy between the European Atomic Energy Community and the United States of America.
- B. In the event either Party or a participant concludes that a new type of intellectual property not covered in a TMP or agreement between participants may result from a cooperative activity undertaken pursuant to this Agreement, or if other unforeseen difficulties arise, the Parties shall enter into immediate discussions with the object of assuring that the protection, exploitation and dissemination of the intellectual property in question are adequately provided for in their respective territories.

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EUROPEAN COMMISSION

**Amendment
to the
Implementing Agreement
between the Department of Energy of the United States of America
and the European Commission,
for
Non-nuclear Energy Scientific and Technological Cooperation
relating to
Cooperation in the Area of Fuel Cells**

Whereas:

The Department of Energy of the United States of America (DOE) and the European Commission (EC), hereinafter referred to as the "Sides";

Noting that the Agreement for Scientific and Technological Cooperation between the United States of America and the European Commission ("the Sides"), signed on December 5, 1997, (S&T Agreement) supports cooperation in a wide range of areas of research and development;

Having signed an Implementing Agreement for Cooperation in Non-Nuclear Energy Scientific and Technological Cooperation on May 14, 2001, that is subject to, and governed by the S&T Agreement; and

Believing that the Sides continue to have capabilities which can assist each other in their effort to advance the status of research and development;

It is hereby agreed to amend the Implementing Agreement as follows:

1. The Sides agree to designate the existing Section 1 as paragraph 1 and to add the following new paragraphs to Section 1 of the Implementing Agreement, as follows:

The Sides agree to establish a framework for collaboration in the field of fuel cell technology, in transportation and stationary applications. The areas of mutual interest between the Sides are as follows:

- "a. Transportation demos, including fueling infrastructure;
- b. Auxiliary Power Units (APUs);
- c. Codes and standards including fuel infrastructure, vehicles, and APU's;
- d. Fuel choice studies and socio-economic and environmental assessment (environmental technology assessment) of critical materials availability for low temperature fuel cells;
- e. Solid Oxide Fuel Cells (SOFC) and high temperature fuel cell hybrid systems;
- f. Support Studies, including socio-economic assessment of critical rare earth materials for high temperature fuel cells;
- g. Direct methanol and Polymer Electrolyte Membrane (PEM) fuel cells for transportation and stationary applications".

2. The sides agree to add the following new paragraphs to Section 3 of the Implementing Arrangement, as follows:

"d . The supervision of the execution of cooperation under Section 1, paragraph 2 will be carried out in accordance with this Section. Lead Coordinators of each Side shall name a Technical Coordinator. The European Commission shall name one Technical Coordinator representing DG Research, DG Energy and Transport and the Joint Research Centre.

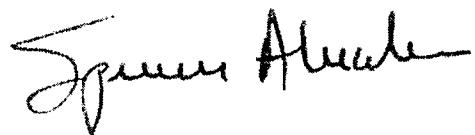
e . The Technical Coordinators of both Sides shall meet at least once a year, preferably alternatively in the United States and Europe or at such other times and places as jointly agreed, the hosting Side providing organisation and secretariat of the meetings.

f . At their meetings, the Technical Coordinators shall evaluate the status of co-operation under Section 1, paragraph 2. This evaluation shall include a review of the past year's activities and accomplishments, a review of the activities planned for the coming year within each of the areas of cooperation mentioned and consideration of measures required to correct any imbalances.

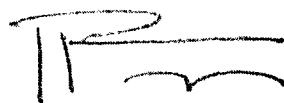
g . The Technical Coordinators shall provide an annual report on the status of cooperation under Section 1, paragraph 2 to the Lead Coordinators of the Steering Group at the anniversary date of signature of this Amendment".

Done in duplicate in the English language at Brussels this 16 day of June, 2003.

FOR THE DEPARTMENT OF ENERGY
THE UNITED STATES OF AMERICA

A handwritten signature in black ink that appears to read "Spencer Abraham".

FOR THE EUROPEAN COMMISSION OF

A handwritten signature in black ink that appears to read "T. R. M." or "Thierry Mariani".

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**AGREEMENT
BETWEEN**
**THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA
AND**
**THE MINISTRY OF SCIENCE AND TECHNOLOGY OF
THE FEDERATIVE REPUBLIC OF BRAZIL**
CONCERNING COOPERATION IN NUCLEAR ENERGY

The Department of Energy of the United States of America (DOE) and the Ministry of Science and Technology of the Federative Republic of Brazil, hereinafter referred to as the "Parties";

Desiring to further improve the close co-operation in the development and applications of nuclear energy for peaceful purposes, in conformity with the Agreement for Cooperation between the Government of the United States of America and the Government of the Federative Republic of Brazil Concerning Peaceful Uses of Nuclear Energy, signed 14 October 1997;

Sharing an interest in developing advanced concepts and scientific breakthroughs in nuclear fission and reactor technology to address and overcome the principal technical, societal, and economic obstacles to the expanded peaceful use of nuclear energy;

Seeking to promote and maintain nuclear science and engineering infrastructure in the Parties' respective countries to sustain the capabilities necessary for the development and use of nuclear energy;

Desiring to promote the exchange of scientific and technological information, and collaborative research and development (R&D) between U.S. and Brazilian agencies and research organizations focused on advanced technologies for improving nuclear power systems; and

Noting that the DOE proposes to engage in cooperative nuclear research and development activities under this Agreement as part of its International Nuclear Energy Research Initiative (I-NERI), whose goal is to undertake, through bilateral agreements between DOE and international counterpart governmental entities, R&D to develop safe, cost effective, proliferation-resistant, and sustainable nuclear technologies to meet future global energy needs;

HEREBY AGREE AS FOLLOWS:

**ARTICLE 1
Purpose**

The objective of this Agreement is to establish a framework for collaboration between the Parties for research and development of advanced nuclear technologies. The Parties shall conduct such collaboration on the basis of mutual benefit, equality and reciprocity.

ARTICLE 2 **Areas of Cooperation**

The areas of R&D cooperation under this Agreement may include, but are not limited to, the following:

1. Advanced reactor developments for future-generation nuclear energy systems;
2. Advanced reactor fuel and reactor fuel cycle-integration;
3. Life management and upgrading of current operating reactors;
4. Advanced fuel and material irradiation and use of experimental facilities;
5. Environmental and safety issues related to new reactor and fuel cycle technologies; and
6. Fundamental areas of nuclear engineering and science.

ARTICLE 3 **Forms of Cooperation**

The forms of cooperation under this Agreement may include, but are not limited to, the following:

1. Exchange of materials, instruments, components and equipment for testing;
2. Competitive selection and funding, under DOE's I-NERI, of collaborative R&D activities in advanced nuclear energy technology;
3. Exchange of personnel for participation in agreed research, development, demonstration, analysis, design, experimental, and training activities;
4. Joint projects in the form of experiments, tests, design analysis, or other technical collaborative activity; and
5. Joint funding of specific projects which may be undertaken either by the Parties, or in connection with other persons in a manner agreed to by the Coordinators (Article 4).

ARTICLE 4

Management

1. Each Party shall designate a Coordinator to supervise the implementation of this Agreement. As mutually agreed, the Coordinators shall meet periodically to evaluate all aspects of the cooperation under this Agreement. These meetings shall be held alternately in the United States and Brazil, unless otherwise agreed.
2. The Coordinators shall approve and monitor all cooperative activities to be carried out under this Agreement.
3. The Coordinators may establish separate subcommittees in any of the areas of cooperation to facilitate implementation of projects undertaken under this Agreement.
4. The Coordinators shall review and evaluate any proposed activities and the status of cooperation under this Agreement. The Coordinators shall give appropriate guidance and directions to the subcommittees and the project managers responsible for activities undertaken under this Agreement. If requested, the Coordinators may advise the Parties regarding future cooperative activities under this Agreement.

ARTICLE 5

Additional Organizations

The Parties shall encourage the participation of other organizations in the cooperative activities under this Agreement, at their own expense and on such conditions, consistent with the terms of this Agreement, as the Parties shall agree: government agencies, universities, science and research centers, private sector firms and other institutions of the Parties, and institutions of third parties or international organizations.

ARTICLE 6

Annexes

Cooperative activities under this Agreement may be undertaken by the Parties or by laboratories or contractors of the Parties. Each cooperative activity that may involve the sharing of costs or that may give rise to intellectual property shall be described in writing in an Annex to this Agreement. Such Annexes shall contain detailed procedures for the implementation of the cooperative activity, including but not limited to technical scope, management, cost-sharing, as appropriate. Each Annex shall be subject to and shall refer to this Agreement.

ARTICLE 7 **Exchange of Personnel**

The following provisions shall apply concerning exchanges of personnel under this Agreement:

1. Whenever an exchange of personnel is contemplated, each Party shall ensure the selection of personnel with the skills and competence necessary to conduct the activities planned under this Agreement. Each such exchange of personnel shall be agreed in advance by an exchange of letters between the Parties, referencing this Agreement and its pertinent intellectual property provisions.
2. Each Party shall be responsible for the salaries, insurance, and allowances to be paid to its staff or contractors.
3. Each Party shall pay for the travel and living expenses of its staff or contractors staying at the establishment of the host Party, unless otherwise agreed.
4. Each Party shall help locate adequate accommodations for the other Party's staff or contractors (and their families) on a mutually agreeable, reciprocal basis.
5. Each Party shall provide all necessary assistance to the staff or contractors of the other Party as regards administrative formalities, such as assistance in making travel arrangements.
6. The staff and contractors of each Party shall conform to the general rules of work and safety regulations in force at the host establishment.

ARTICLE 8 **Exchange of Equipment**

The following provisions shall apply concerning exchanges of equipment under this Agreement.

1. By mutual arrangement, a Party may provide equipment to be utilized in a joint activity. In such cases, the sending Party shall supply, as soon as possible, a detailed list of the equipment to be provided, together with the relevant specifications and appropriate technical documentation related to the use, maintenance, and repair of the equipment.
2. Title to the equipment and necessary spare parts supplied for use in joint activities shall remain in the sending Party, and the property shall be returned to the sending Party upon completion of the joint activity, unless otherwise agreed.

3. Equipment provided under this Agreement shall be brought into operation at the host establishment only by agreement of the Parties.
4. The host establishment shall provide the necessary premises for the equipment, shall provide for utilities such as electric power, water, and gas, and normally shall provide materials to be tested, in accordance with agreed technical requirements.
5. Responsibility for expenses, safekeeping and insurance during the transport of equipment from the original location in the country of the sending Party to the place of entry in the country of the receiving Party shall rest with the sending Party. If the sending Party elects to have the equipment returned, it shall be responsible for expenses, safekeeping, and insurance during the transport of the equipment from the original port of entry in the country of the receiving Party to the final destination in the country of the sending Party.
6. Responsibility for expenses, safekeeping, and insurance during the transport of equipment from the place of entry in the country of the receiving Party to the final destination in the country of the receiving Party shall rest with the receiving Party. If the sending Party elects to have the equipment returned, the receiving Party shall be responsible for expenses, safekeeping and insurance during the transport of the equipment from the final destination in the country of the receiving Party to the original point of entry in the country of the receiving Party.
7. Equipment provided under this Agreement for use in joint activities shall be considered to be scientific, not having a commercial character, and each Party shall make its best effort to obtain duty free entry.

ARTICLE 9 **Samples and Materials**

Unless otherwise agreed in writing, the following provisions shall apply to the transportation and use of samples and materials provided by one Party to the other Party under this Agreement:

1. All samples and materials provided by the sending Party to the receiving Party shall remain the property of the sending Party, and shall be returned to the sending Party upon completion of the mutually agreed upon activity, unless otherwise agreed.
2. Where one Party requests that a sample or material be provided by the other Party, the Party making the request shall bear all costs and expenses associated with the transportation of the sample or material from the location of the sending Party to its final destination.

3. Each Party shall promptly disclose to the other Party all information arising from the examination or testing of samples or materials exchanged under this Agreement. The Parties agree that business-confidential information (as defined in Section 3. of Annex I attached to this Agreement), which was developed prior to or outside the scope of this Agreement, shall remain business-confidential even though it is contained in the results of an examination or testing of samples or materials. Such information shall be identified as business-confidential by the Party asserting its business-confidential nature as soon as possible after disclosure of all information arising from the examination or testing is made to such Party and the other Party shall be immediately advised of that identification. All information identified as business-confidential shall be controlled as provided in Section 3. of Annex I.
4. It is further understood and agreed that a Party providing samples or materials to the other Party may also provide a partial or complete list of the types of information arising from the examination or testing of such samples or materials and which is business-confidential as defined in Section 3. of Annex I. All such business-confidential information is to be controlled as set out in Section 3. of that Annex.

ARTICLE 10

Transfer of Information and Equipment

1. All information or equipment transmitted by one Party to the other Party under this Agreement and any related Project Annex shall be appropriate, accurate, and to the highest standards to the best knowledge and belief of the transmitting Party, but the transmitting Party does not warrant the suitability of the information or equipment transmitted for any particular use or application by the receiving Party or any third party. Information or equipment developed jointly by the Parties shall be appropriate and accurate to the best knowledge and belief of both Parties. Neither Party warrants the accuracy of the jointly developed information or the appropriateness of equipment nor its suitability for any particular use or application by either Party or by any third party.
2. The Parties may exchange, as agreed on a mutually beneficial basis, scientific and technical information, documents and results of research and development of work carried out under this Agreement. Such information shall be limited to that which the Parties have the right to disclose, either in their possession or available to them, relating to the types of cooperation described in Article 2.
3. Seminar proceedings and reports of joint activities carried out under this Agreement shall be made available for publication as joint publications, as agreed by the Parties.
4. The Parties agree that information developed and exchanged under this Agreement should be given wide distribution. Except as provided in Section 3 of Annex I to this

Agreement, such information may be made available to the public by either Party through customary channels and in accordance with normal procedures of the Parties.

ARTICLE 11

Intellectual Property and Business-Confidential Information

The protection and allocation of intellectual property, and the treatment of business-confidential information, shall be governed by Annex I to this Agreement, which is attached to and constitutes an integral part of this Agreement.

ARTICLE 12

General Provisions

1. Unless otherwise agreed, all costs resulting from cooperation carried out under this Agreement shall be the responsibility of the Party that incurs them.
2. Each Party shall conduct the activities provided for in this Agreement in accordance with its applicable laws and regulations, and subject to the availability of appropriated funds, personnel, and other resources.
3. Each Party shall use its best efforts to obtain all required permits and licenses as necessary for the implementation of this Agreement.
4. Any dispute concerning the interpretation or application of this Agreement shall be settled by consultations between the Parties.

ARTICLE 13

Duration, Amendment and Termination

1. This Agreement shall enter into force upon signature, remain in force for 5 years (subject to Article 13.3), and be automatically renewed for further 5-year periods unless either Party notifies the other in writing 3 months prior to the expiration of the first 5-year period, or a succeeding 5-year period, of its intent to terminate the Agreement.
2. This Agreement may be amended by written agreement of the Parties.
3. This Agreement may be terminated upon 3 months advance notification in writing by either Party to the other Party.
4. All joint efforts and experiments not completed at the expiration or termination of this Agreement may be continued until their completion under the terms of this Agreement.

D
DONE at Washington, in duplicate, this 20th day of June 2003, in the English and Portuguese languages, each text being equally authentic.

**FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF
AMERICA:**

Spencer Abraham

**FOR THE MINISTRY OF SCIENCE AND
TECHNOLOGY OF THE FEDERATIVE
REPUBLIC OF BRAZIL:**

Willy Wm Vaz

ANNEX I **INTELLECTUAL PROPERTY**

Pursuant to Article 11 of this Agreement:

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this Agreement and relevant Annexes. The Parties agree to notify one another in a timely fashion of any inventions or copyrighted works arising under this Agreement, and seek protection for such intellectual property in a timely fashion. Rights to such intellectual property shall be allocated as provided in this Annex.

1. SCOPE

A. This Annex is applicable to all cooperative activities undertaken pursuant to this Agreement, except as otherwise specifically agreed by the Parties or their designees.

B. For purposes of this Agreement, "intellectual property" shall have the meaning found in Article 2 of the Convention Establishing the World Intellectual Property Organization, done at Stockholm, July 14, 1967.

C. This Annex addresses the allocation of rights and interests between the Parties. Each Party shall ensure that the other Party can obtain the rights to intellectual property allocated in accordance with this Annex, by obtaining those rights from its own participants through contracts or other legal means, if necessary. This Annex does not otherwise alter or prejudice the allocation between a Party and its nationals, which shall be determined by that Party's laws and practices.

D. Disputes concerning intellectual property arising under this Agreement should be resolved through discussions between the concerned participating institutions or, if necessary, the Parties or their designees. Upon mutual agreement of the Parties, a dispute shall be submitted to an arbitral tribunal for binding arbitration in accordance with the applicable rules of international law. Unless the Parties or their designees agree otherwise in writing, the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL) shall govern.

E. Termination or expiration of this Agreement shall not affect rights or obligations under this Annex.

2. ALLOCATION OF RIGHTS

A. Each Party shall be entitled to a non-exclusive, irrevocable, royalty-free license in all countries to translate, reproduce, and publicly distribute scientific and technical journal

articles, reports, and books directly arising from cooperation under this Agreement. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate the names of the authors of the work unless an author explicitly declines to be named.

B. Rights to all forms of intellectual property, other than those rights described in Paragraph 2.A. above, shall be allocated as follows:

1. Visiting researchers, for example, scientists visiting primarily in furtherance of their education, shall receive intellectual property rights under the policies of the host institution. In addition, each visiting researcher named as an inventor or author shall be entitled to national treatment with regard to awards, bonuses, benefits, or any other rewards, in accordance with the policies of the host institution.

2. (a) For intellectual property created during joint research, for example, when the Parties, participating institutions, or participating personnel have agreed in advance on the scope of work, each Party shall be entitled to obtain all rights and interests in its own country. Rights and interests in third countries will be negotiated in Annexes on a case-by-case basis. If research is not designated as "joint research" in the relevant Annex, rights to intellectual property arising from the research will be allocated in accordance with paragraph 2.B.1. above. In addition, each person named as inventor or author shall be entitled to national treatment with regard to awards, bonuses, benefits, or any other rewards in accordance with the policies of the participating institutions.

(b) Notwithstanding paragraph 2.B.2. (a) above, if a type of intellectual property is available under the laws of one Party but not the other Party, the Party whose laws provide for this type of protection shall be entitled to all rights and interests worldwide. Persons named as inventors or authors of the intellectual property shall nonetheless be entitled to national treatment with regard to awards, bonuses, benefits, or any other rewards in accordance with the policies of the participating institution of the Party obtaining rights.

3. BUSINESS-CONFIDENTIAL INFORMATION

In the event that information identified in a timely fashion as business-confidential is furnished or created under this Agreement, each Party and its participants shall protect such information in accordance with applicable laws, regulations, and administrative practices. Information may be identified as "business-confidential" if a person having the information may derive an economic benefit from it or may obtain a competitive advantage over those who do not have it, the information is not generally known or publicly available from other sources, and the owner has not previously made the information available without imposing in a timely manner an obligation to keep it confidential.

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Annex VI
to the Memorandum of Understanding
Between
The Department of Energy of the United States of America
and
The Ministry of Science and Technology of the Republic of Korea
for a Cooperative Laboratory Relationship
On a
Collaborative Project Supporting
Research and Development in the Field of
Innovative Fuel Cycles

Whereas the Department of Energy of the United States of America (DOE) and the Ministry of Science and Technology of the Republic of Korea (MOST) are parties to the Memorandum of Understanding for a Cooperative Laboratory Relationship of June 14, 1996, as extended and amended (hereafter referred to as the "MOU"); and

Whereas representatives of DOE's Office of Nuclear Energy, Science and Technology and MOST's Atomic Energy Bureau have identified common interests in innovative fuel cycles that are cleaner, more efficient, less waste-intensive, and more proliferation-resistant; and

Whereas DOE proposes to cooperate with MOST in recycle/transmutation technologies involving pyroprocessing as a fuel conditioning method that reduces waste streams and enhances proliferation resistance, consistent with U.S. nonproliferation policy and nuclear energy development interests; and

Whereas the Republic of Korea has committed itself to achieve self-reliance in advanced nuclear energy systems and proliferation-resistant nuclear fuel cycle technologies through comprehensive and systematic nuclear energy research and development;

The DOE and MOST (hereinafter referred to as the "Parties") hereby agree to initiate collaborative projects in the areas of Innovative Fuel Cycles, as authorized under Articles II.A.1. and III.E. and F. of the MOU.

I. Principals

- A. DOE's Office of Nuclear Energy, Science and Technology.**
- B. MOST's Atomic Energy Bureau.**

II. Principles

- A. This Annex is subject to the MOU and to the condition that, unless otherwise expressly agreed, the cooperation contemplated under this Annex shall be limited to those activities that do not involve the use of irradiated source material or any special nuclear material.
- B. The implementation of this Annex is subject to the availability of appropriated funds and personnel, and Principals shall carry out their responsibilities subject to the applicable laws and regulations of the Parties' respective countries.

III. Projects

- A. The Parties may establish such projects related to innovative fuel cycles as they agree in writing and/or at an annual meeting of the U.S.-Republic of Korea Joint Standing Committee on Nuclear Energy Cooperation (hereafter referred to as the "JSCNEC".)
- B. The Parties' agreement on any project may take the form of a contract between the participating organizations from each side.
- C. With the Parties' agreement, additional organizations from either Party's country or from third countries may be invited to join a project, subject to such terms and conditions as the Parties may specify.
- D. Sensitive Nuclear Technology, as defined by U.S. regulations at 10 CFR Part 810, is specifically excluded from bilateral research under this Annex.

IV. Responsibilities

- A. Each Party shall designate a Technical Coordinator for each project. Each Technical Coordinator will be responsible for his side's project activities including, but not limited to, evaluating technical issues, promoting timely completion of assigned tasks and reporting to his Principal on the project's progress and status.
- B. The Parties shall (unless otherwise agreed) convene in annual technical information exchange meetings, held in both countries on an alternating basis and timed to coincide with the annual meetings of the JSCNEC where practicable, for the purpose of exchanging reports on progress in the agreed collaborative initiatives. Regardless of whether any annual technical information exchange meeting coincides with the annual meeting of the JSCNEC, the DOE and MOST Technical Coordinators for each project will submit a joint report detailing progress made under this Annex to each annual meeting of the JSCNEC.

V. Information and Intellectual Property

Dissemination, use and protection of information used or generated in the activities conducted pursuant to this Annex, and the allocation of rights in intellectual property arising in the course of such activities shall be governed by the provisions set forth in the Agreement Relating to Scientific and Technical Cooperation between the Government of the United States of America and the Government of the Republic of Korea of July 2, 1999.

VI. Duration and Termination

- A. This Annex shall enter into force upon signature, and shall remain in force for five years or until termination of the MOU, whichever occurs first. This Annex may be amended or extended by written agreement of the Parties.
- B. In the event of termination of the MOU or this Annex, activities undertaken under this Annex but not completed at the time of such termination may continue until their completion. However, no new activities may be initiated unless the Parties enter into a new written agreement.
- C. The Annex may be terminated at any time at the discretion of either Party, on six months' advance notification in writing by the Party seeking to terminate it.

Done at _____, this 15th day of September, 2003, in duplicate, in the English language.

FOR THE DEPARTMENT OF ENERGY OF
THE UNITED STATES OF AMERICA:

Spencer Abraham

FOR THE MINISTRY OF SCIENCE AND
TECHNOLOGY OF THE REPUBLIC OF
KOREA:

Hakoon Park

21

September 16, 2003

STATEMENT OF INTENT

The Secretary of the U.S. Department of Energy (DOE) and the Chairman of the China Atomic Energy Authority (CAEA) affirm with satisfaction the recent understandings reached on exchange of nonproliferation assurances required for transfers and mutual exchanges of nuclear technology.

With the exchange of diplomatic notes between the U.S. Embassy in Beijing and China's Ministry of Foreign Affairs that state the understandings, we declare our intent to implement them effectively and efficiently, and with all necessary resources of our respective organizations.

The understandings establish a process for determining what nuclear technologies require government-to-government nonproliferation assurances and set forth procedures for exchange of the assurances.

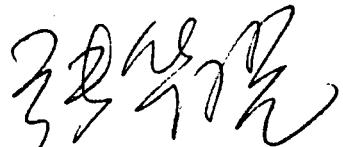
Once nuclear technology proposed for transfer is determined to require nonproliferation assurances, the government of the recipient country will commit to ensuring it will be used exclusively for peaceful purposes and not for any military or nuclear explosive purpose and that transferred technology or items derived therefrom will not be retransferred without the prior consent of the government of the supplier country.

Further, the term limits on DOE authorizations for U.S. nuclear vendors to support China's nuclear power program will be extended, when so requested by CAEA for an individual contract.

In addition, reciprocal nonproliferation assurances will be exchanged when required for joint U.S.-Chinese projects. The first reciprocal assurances are to enable collaboration between Massachusetts Institute of Technology's Department of Nuclear Engineering (MIT/NED) and Tsinghua University's Institute of Nuclear Energy Technology (TU/IINET) on a Modular High Temperature Gas Pebble Bed Reactor (MPBR).

The understandings hold the promise of expanded U.S.-Chinese nuclear cooperation and commerce, at the same time strengthening the international nuclear nonproliferation regime. We express our commitment to realizing that promise.


Spencer Abraham
Secretary
U.S. Department of Energy


Zhang Hua-zhu
Chairman
China Atomic Energy Authority

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**MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA
AND
THE DEPARTMENT OF INDUSTRY, TOURISM AND RESOURCES
OF THE COMMONWEALTH OF AUSTRALIA
ON COOPERATION IN THE ENERGY SECTOR**

The Department of Energy of the United States of America and the Department of Industry, Tourism and Resources of the Commonwealth of Australia (hereinafter referred to as the Participants),

NOTING past cooperation between the Department of Energy of the United States of America and the Department of Primary Industries and Energy of the Commonwealth of Australia under a Memorandum of Understanding on collaboration in energy research and development signed April 11, 1988, for a ten-year period through April 10, 1998,

DESIRING to establish a framework for cooperation on energy matters and to develop and strengthen bilateral cooperation in areas of mutual interest in the energy sector, including enhancing policy consultation, facilitating bilateral energy trade and investment and advancing energy technology policies to promote research, development and deployment of innovative energy technologies, and

HAVING mutual interest in creating an attractive climate for domestic and foreign private capital investment in the energy sector of their respective countries, and in encouraging partnerships among the business sectors of both countries in the exploration, development and processing of energy resources, products, services and technologies,

Have reached the following understandings:

1. The Participants propose to initiate collaboration as follows:
 - (A) Bringing together senior policy officials, industry leaders and technical experts through regular consultations and organizing and participating in workshops and seminars on mutually determined topics;
 - (B) Exchanging experts and sharing information on current and future trends in the energy sector, energy regulations and policies, including barriers to energy trade and investment, financial issues related to emerging technologies, and technical guidance to advance energy technology development and deployment;
 - (C) Encouraging the development of corporate partnerships, joint ventures, licensing and the transfer of technologies, tools and equipment between organizations in the

United States and Australia, and large scale long-term public-private sector cooperation to advance energy technology and infrastructure development; and

(D) Engaging in additional forms of cooperation, as may be mutually determined by the Participants.

2. Where collaboration may lead to the creation of intellectual property, the Participants will consult with each other and make appropriate arrangements for the protection and allocation of such intellectual property.

3. A High Level Group on Energy Cooperation and Innovation, co-chaired by a representative from each Participant and composed of representatives from each Participant's government, research bodies and industry, will be established to ensure the effective implementation of this Memorandum of Understanding and will meet periodically as mutually determined. Each Participant will appoint a Principal Coordinator to coordinate activities under this Memorandum of Understanding.

4. This Memorandum of Understanding is not intended to create legally binding obligations between the Participants. The ability of the Participants to undertake the activities contemplated by the Memorandum of Understanding is subject to the availability of appropriated funds.

5. The collaboration contemplated by this Memorandum of Understanding may commence upon signature.

6. The terms of this Memorandum of Understanding may be altered at any time by mutual consent in writing. If either Participant desires to terminate its activities under this Memorandum of Understanding, it will give three (3) months written notice to the other Participant.

Signed at Washington

this 10TH day of November, 2003.

**FOR THE DEPARTMENT OF
ENERGY OF THE UNITED
STATES OF AMERICA:**

Spencer Abraham

**FOR THE DEPARTMENT OF INDUSTRY,
TOURISM AND RESOURCES OF THE
COMMONWEALTH OF AUSTRALIA:**

Cheryl Carter

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AGREEMENT
BETWEEN
THE DEPARTMENT OF ENERGY OF THE
UNITED STATES OF AMERICA AND
THE RUSSIAN ACADEMY OF SCIENCES
TO EXTEND THE

"Memorandum of Understanding between the Department of Energy of the United States of America and the Russian Academy of Sciences on Cooperation in Science and Technology" signed March 24, 1999

The Department of Energy of the United States of America and the Russian Academy of Sciences (hereafter referred to as the "Parties"),

Having regard to the Memorandum of Understanding between the Department of Energy of the United States of America and the Russian Academy of Sciences on Cooperation in Science and Technology signed March 24, 1999 (hereinafter "the MOU"),

Noting the highly valuable and successful scientific cooperation between the two Parties during the past five years under the MOU,

Desiring to continue joint projects within the framework of the MOU to strengthen the scientific and technological potential of the Parties,

Noting that Paragraph 1 of Article VII of the MOU provides for the extension of the MOU by written agreement of the Parties,

Have agreed as follows:

The term of the MOU is extended for five years until March 24, 2009, unless terminated prior to this date in accordance with Paragraph 3, Article VII of the MOU.

This Agreement shall enter into force upon signature.

Done at Washington this 2 day of December 2003

FOR THE DEPARTMENT
OF ENERGY

Spencer Abraham

FOR THE RUSSIAN ACADEMY
OF SCIENCES

H. L. Dobrovol'skii

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**JOINT STATEMENT OF INTENT
BETWEEN
THE MINISTRY OF ECONOMY, TRADE AND INDUSTRY OF JAPAN
AND
THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA
CONCERNING
SCIENTIFIC AND TECHNOLOGICAL COOPERATION
IN THE AREA OF HYDROGEN AND FUEL CELLS**

The Department of Energy of the United States of America and the Ministry of Economy, Trade and Industry of Japan (hereinafter referred to as the "Participants");

NOTING the Agreement between the Government of the United States and the Government of Japan on Cooperation in Research and Development in Energy and Related Fields, signed at Washington on May 2, 1979, as extended and amended;

NOTING further the Terms of Reference of the International Partnership for the Hydrogen Economy of November 20, 2003;

SHARING an interest in pursuing pre-competitive research and development (R&D) in the field of fuel cell and hydrogen technologies; and

RECOGNIZING the contribution such R&D can make to the development of a hydrogen economy and to cost-effective technologies to meet future global energy needs,

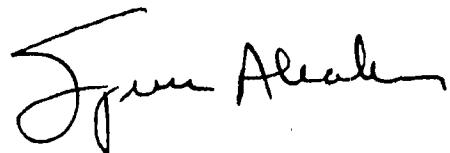
Hereby declare their intentions as follows:

1. The Participants intend to consider conclusion of an appropriate written arrangement for R&D cooperation in fuel cell technology and hydrogen production, storage and infrastructure technologies.
2. Following signature of this Joint Statement, the Participants intend to:
 - (A) Bring together cognizant officials and technical experts, including private sectors, to organize and participate in workshops and seminars on mutually determined topics in the area of fuel cells and hydrogen production, storage, and transport technologies;
 - (B) Exchange experts and share information on current policies, technological programs and developments in the area of fuel cells and hydrogen, including recommendations for common codes, standards and regulations and requirements to develop hydrogen fueling infrastructure; and

- (C) Participate in additional activities, as may be decided upon by mutual consent.
3. This Joint Statement is not intended to create legally binding obligations between the Participants.
 4. Both Participants share the recognition that the Participants' ability to undertake the activities contemplated by the Joint Statement is subject to the availability of appropriated funds.
 5. The Participants intend that the collaboration contemplated by this Joint Statement may commence upon signature. The terms of the Joint Statement may be altered at any time in writing. If either Participant desires to terminate its activities under this Joint Statement, it is to give 30 days' written notice to the other Participant.

Signed at Tokyo in duplicate this ^{8th} day of January, 2004.

**FOR THE DEPARTMENT OF
ENERGY OF THE UNITED
STATES OF AMERICA:**



**FOR THE MINISTRY OF ECONOMY,
TRADE AND INDUSTRY OF
JAPAN:**



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PROTOCOL

FOR COOPERATION IN CLEAN ENERGY TECHNOLOGIES FOR THE 2008 SUMMER OLYMPIC GAMES IN BEIJING

The Department of Energy of the United States of America (DOE) and the Ministry of Science and Technology (MOST) of the People's Republic of China (China), on behalf of and considering the scientific and technological interests of the Beijing Municipal People's Government (BMPG), hereinafter referred to as the "Parties,"

Noting the Agreement between the Government of the United States of America and the Government of the People's Republic of China on Cooperation in Science and Technology signed at Washington on January 31, 1979, as amended and extended, hereinafter referred to as the "Science and Technology Agreement";

Noting that under the Science and Technology Agreement, DOE program offices and research laboratories have performed cooperative research, development, and deployment activities in areas of mutual interest in energy science and technology with ministries and other instrumentalities of China;

Noting that China will host the 2008 Summer Olympic Games in Beijing and that in preparation, both the national and municipal governments, BMPG in particular, of China intend to use clean energy technologies to improve Beijing's environmental quality to an acceptable level by 2008 and to present the event as a magnificent "high-tech" sports meet;

Noting that a Statement of Intent between DOE and the BMPG was signed on September 10, 2002, with a focus on assisting BMPG to develop clean energy technologies and energy and environmental policies in preparation for the 2008 Summer Olympic Games;

Noting that China's lead national agency, MOST, and the Beijing Municipal Science and Technology Commission (BMSTC), a component of BMPG, intend to cooperate with DOE on this event;

Noting that DOE sponsored a series of projects for the 1996 Summer Olympic Games that demonstrated advanced energy efficiency and renewable energy technologies; and provided for the 2002 Olympic Winter Games recommendations for the use of clean energy technologies in areas of buildings, transportation systems and power systems; and

Noting DOE's desire to assist MOST and BMSTC to develop clean energy technology and energy and environmental policies in preparation for the 2008 Summer Olympic Games and to promote cooperation in clean energy development and utilization for the Parties' mutual benefit;

Have agreed as follows:

ARTICLE 1 OBJECTIVE

- A. The objective of cooperation under this Protocol is to promote MOST's and BMPG's use of clean energy technologies as well as to provide technical assistance to MOST and BMPG in energy and environmental policy and planning for the 2008 Summer Olympic Games.
- B. This Protocol is subject to and governed by the Science and Technology Agreement. In the event of any conflict between the terms of the Science and Technology Agreement and this Protocol, the Science and Technology Agreement shall govern.

ARTICLE 2 AREAS FOR COOPERATION

Technological cooperation under this Protocol may include, but is not limited to, the following areas:

- A. Clean coal;
- B. Natural gas;
- C. New and renewable energy;
- D. Distributed combined heating/cooling and power systems;
- E. Energy efficient building technologies, including building design, rating systems, solar, and geothermal energy applications;
- F. Alternative fuel vehicles;
- G. Urban transportation systems, including a broad range of public transportation issues and technologies; and
- H. Other areas in alignment with the missions of both DOE and MOST.

ARTICLE 3 FORMS OF COOPERATION

Cooperative activities undertaken pursuant to this Protocol may include, but are not limited to, the following:

- A. Exchange of technical information and data on science and technical activities and methods and results of research and development;
- B. Exchange visits concerning the design and implementation of clean energy technologies including operational procedures, management and oversight, policy analysis, technology transfer and commercialization;

- C. Organization of, and participation in, technological demonstrations and seminars and other meetings on specific mutually agreed topics;
- D. Exchange of information concerning commercialization and market potentials;
- E. Joint projects in which the Parties agree to share the work and costs; and
- F. Such other cooperation as may be agreed by the Parties, in advance, in writing.

ARTICLE 4 PROJECT ANNEXES

The Parties shall execute a Project Annex for each joint project that they agree to undertake pursuant to this Protocol. Each Project Annex, which shall be subject to this Protocol, shall contain provisions covering technical scope, management, total costs, cost sharing and schedule, as appropriate.

ARTICLE 5 MANAGEMENT

- A. Each Party shall designate one Principal Coordinator to supervise activities under this Protocol. The Principal Coordinators shall consult with each other at least annually to evaluate the status of cooperation under this Protocol. This evaluation will include review of the achievements, problems, and effectiveness of activities under this Protocol. When necessary, the Principal Coordinators shall meet to consider matters related to the implementation of this Protocol. Such meetings shall be held alternately in the United States and China.
- B. Subject to the prior approval of the Parties, the Principal Coordinators may appoint Project Coordinators to manage specific cooperative activities initiated under this Protocol and to establish and maintain working contacts at the staff level.

ARTICLE 6 ASSIGNMENT OF STAFF

The following provisions shall apply to assignment of staff:

- A. Each Party shall ensure that qualified staff are selected for assignment to the other Party. Each assignment of staff shall be the subject of a separate exchange of letters between the participating institutions.

- B. Each Party shall be responsible for its staff's salaries, insurance, and allowances, and for the travel and living expenses of its staff while on assignment to the receiving Party unless otherwise agreed, in advance and in writing, by the Parties.
- C. The receiving Party shall provide all necessary assistance to the visiting staff and their families as regards administrative formalities such as assistance in locating suitable accommodations and making travel arrangements.
- D. The sending Party shall ensure that its staff conform to the general and special rules of work and safety regulations in force at the establishment of the receiving Party, unless otherwise agreed in a separate assignment agreement.

ARTICLE 7 **ADDITIONAL ORGANIZATIONS**

Each Party may invite other government agencies and organizations and private organizations in their respective countries to participate in cooperative activities under this Protocol, at their own expense, and subject to such terms and conditions as the Parties may specify. Such organizations may become a signatory to project annexes to this Protocol upon written agreement of both Parties.

ARTICLE 8 **INTELLECTUAL PROPERTY AND BUSINESS-CONFIDENTIAL INFORMATION**

The protection of intellectual property, allocation of rights to such intellectual property and the use of business-confidential information obtained in the course of cooperative activities under this Protocol shall be governed by Annex I to the Science and Technology Agreement.

ARTICLE 9 **AVAILABLE INFORMATION**

- A. Each Party shall make available to the other technical information that is: (1) relevant to or necessary for projects under this Protocol; and (2) either in the Party's possession or available to it, and which it has the right to disclose.
- B. Any scientific and technical information provided by one Party to the other Party pursuant to this Protocol shall be accurate to the best of the providing Party's knowledge and belief; however, neither Party warrants the suitability of the information for any particular use or application by the receiving Party or any third party.

- C. The application or use of any scientific and technical information developed and exchanged under this Protocol is to be given wide distribution. Such information, except as provided in Annex 1 to the Science and Technology Agreement, may be made available to the public by either Party through customary channels and in accordance with normal procedures of that Party.

ARTICLE 10 SECURITY OBLIGATIONS

Both Parties agree that no information or equipment requiring protection in the interest of national defense or foreign relations and classified in accordance with its applicable national laws and regulations shall be provided under this Protocol. In the event that information or equipment which is known or believed to require such protection is identified in the course of cooperative activities pursuant to this Protocol, it shall be brought immediately to the attention of the appropriate officials and the Parties shall consult to identify appropriate security measures to be agreed upon by the Parties in writing and applied to this information and equipment and shall, if appropriate, amend this Protocol to incorporate such measures.

The transfer of unclassified export-controlled information or equipment between the Parties shall be in accordance with the relevant laws and regulations of each Party. If either Party deems it necessary, detailed provisions for the prevention of unauthorized transfer or retransfer of such information or equipment shall be incorporated into the Project Annexes. Such information or equipment shall be marked to identify it as export-controlled, and the Parties shall consult to identify appropriate restrictions or other requirements regarding the transfer of this information or equipment.

ARTICLE 11 COSTS

Unless otherwise agreed in writing, costs resulting from activities under this Protocol shall be the responsibility of the Party that incurs them.

ARTICLE 12 APPLICABLE LAW

Each Party shall conduct the activities provided for in this Protocol subject to its applicable laws and regulations, and shall provide resources subject to the availability of personnel and appropriated funds.

ARTICLE 13 DISPUTES

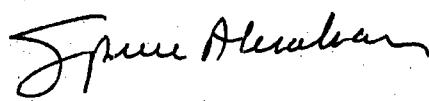
Any disputes concerning the interpretation or application of this Protocol shall be settled by consultation between the Parties.

ARTICLE 14 GENERAL PROVISIONS

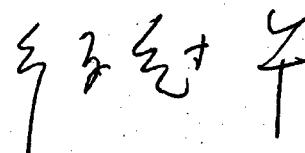
- A. This Protocol shall enter into force upon signature and shall remain in force for six years or as long as the Science and Technology Agreement remains in force, whichever is shorter.
- B. This Protocol may be extended for additional periods by written agreement of the Parties, so long as the Science and Technology Agreement remains in force.
- C. This Protocol may be amended by written agreement of the Parties.
- D. Either Party may terminate this Protocol at any time upon six (6) months advance written notice to the other Party. Such termination shall be without prejudice to the rights that may have accrued to either Party under Annex I to the Science and Technology Agreement up to the date of termination.

DONE at Beijing, this 12th day of January, 2004, in duplicate, in the English and Chinese languages, each text being equally authentic.

FOR THE DEPARTMENT OF
ENERGY OF THE UNITED STATES
OF AMERICA:



FOR THE MINISTRY OF
SCIENCE AND TECHNOLOGY
OF THE PEOPLE'S REPUBLIC OF
CHINA:



REPRESENTATIVE OF THE
BEIJING MUNICIPAL PEOPLE'S
GOVERNMENT OF THE
PEOPLE'S REPUBLIC OF CHINA:



26

**STATEMENT OF INTENT BETWEEN
THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND
THE CHINA ATOMIC ENERGY AUTHORITY
OF THE PEOPLE'S REPUBLIC OF CHINA
CONCERNING COOPERATION IN THE FIELDS OF PEACEFUL USE OF
NUCLEAR ENERGY AND NUCLEAR NON-PROLIFERATION AND
COUNTER-TERRORISM**

The United States Department of Energy (DOE) and the China Atomic Energy Authority of the People's Republic of China (CAEA)

Recognizing the Agreement for Cooperation Between the Government of the United States of America and the Government of the People's Republic of China Concerning the Peaceful Uses of Nuclear Energy, and the Agreement between DOE and State Development Planning Commission (now the National Development and Reform Commission) on Cooperation Concerning Peaceful Uses of Nuclear Technologies were signed on July 23, 1985 and June 29, 1998 respectively;

Recognizing the commitment of both of our governments to promote strengthened cooperation and partnership between the United States of America and the People's Republic of China in preventing nuclear proliferation and nuclear terrorism;

Recalling the Leaders' Declaration following the 2003 Asia-Pacific Economic Cooperation summit, which called on participating governments to eliminate the severe and growing danger posed by the proliferation of weapons of mass destruction and their means for delivery by strengthening international non-proliferation regimes, adopting and enforcing effective export controls, and taking other legitimate and appropriate measures against proliferation;

Recognizing the steps taken by the People's Republic of China to strengthen its national system of non-proliferation export controls, as outlined in the "white paper" released by the State Council on December 3, 2003, as well as the ongoing cooperation between DOE and CAEA to support international safeguards and nuclear security programs of the International Atomic Energy Agency;

Noting the accomplishments of Note Exchange on Government Assurance of Nuclear Technology Transfer between two countries on September 15, 2003 and the Statement of Intent on the Implementation of Government Assurance of Nuclear Technology Transfer between DOE and CAEA, signed on September 16, 2003;

Being convinced of the continuing international requirement to improve security over nuclear and radioactive materials and nuclear facilities and to prevent trafficking in such materials and related dual-use items;

State their intent, consistent with their respective national laws and regulations, to pursue cooperation with each other and collaborative efforts with the IAEA in the following areas:

1) Peaceful use of energy:

- Nuclear reactors technology and nuclear application technologies: including cooperation on reactor design and safety of nuclear power plants, nuclear fuel and materials;
- Nuclear emergency management and safety: development of cooperative exchanges and programs on national emergency policies, plans and procedures regarding radiological emergencies and related nuclear accidents.

2) Non-Proliferation:

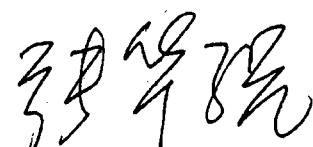
- Export control: development of cooperative exchanges and programs on the licensing of nuclear materials, equipment, technology and related dual-use items, and identifying nuclear and nuclear-related dual-use exports;
- International nuclear safeguards and physical protection: collaboration with the International Atomic Energy Agency to improve international safeguards and security of nuclear material, to include regional training anticipated to be conducted in May 2004 in Beijing, as well as consultations, information exchanges and training to improve physical protection practices and strengthen international safeguards; and
- Radioactive Source Security: development of cooperative exchanges on ways to seek to reduce security risks posed by radioactive sources and materials.

Signed at BEIJING this 12th day of January, 2004, in duplicate, in the English and Chinese languages.

THE DEPARTMENT OF ENERGY OF
THE UNITED STATES OF AMERICA



THE CHINA ATOMIC ENERGY
AUTHORITY OF THE
PEOPLE'S REPUBLIC OF
CHINA



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MEMORANDUM OF UNDERSTANDING

among

**THE PHILIPPINE DEPARTMENT OF ENERGY,
THE UNITED STATES DEPARTMENT OF ENERGY,
and the
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT**

for the

Sustainable Energy Development Program

WHEREAS, the Government of the Republic of the Philippines (GRP) and the Government of the United States of America (USG) have been partners in pursuing sustainable energy development through various bilateral programs and projects over the years;

WHEREAS, the United States Agency for International Development (USAID), an agency of the USG, provided \$3 million in grant funds through the United States Department of Energy (USDOE), also an agency of the USG, for activities undertaken in the Philippines from fiscal years 1996 to 2003 to establish and implement the Sustainable Energy Development Program;

WHEREAS, the Sustainable Energy Development Program supports programs of the GRP on power sector reform, increased energy efficiency, rural electrification for improved economic growth and poverty alleviation, and the expanded use of cleaner and renewable fuels in the energy and transport sectors to improve air quality and avoid greenhouse gas emissions; and

WHEREAS, USAID, USDOE and the Philippine Department of Energy (PDOE), an agency of the GRP, wish to enter into this Memorandum of Understanding (MOU) to confirm and further their cooperation in the energy sector through activities carried out under the Sustainable Energy Development Program.

NOW, THEREFORE, USAID, USDOE, and the PDOE (hereinafter collectively referred to as the Signatories) hereby set forth their understanding to continue bilateral cooperation in the energy sector through the Sustainable Energy Development Program, as follows:

1. USAID and USDOE intend to provide continued support for the PDOE and other energy sector entities in the effective and transparent implementation of the Electricity Power Industry Reform Act. This support is intended to assist in the development of fair and open competition in the electricity market and

the improved capacities of the PDOE and other energy sector entities to carry out their roles in the restructured energy sector.

2. USAID and USDOE propose to expand assistance to the PDOE in the promotion of cleaner and indigenous fuels such as renewable energy and natural gas. Technical assistance aims to support existing projects of USAID and PDOE for the establishment of sustainable renewable energy systems, especially for remote rural communities of former rebel combatants, and encourage more private sector investments and community participation. Technical assistance also aims to support the development of appropriate policies and the expansion of the market for cleaner fuels like natural gas in power generation and other downstream applications such as transport and commercial uses.
3. The Signatories contemplate further collaboration with relevant government agencies, private sector entities and civil society groups in the Philippines to support activities aimed at reducing air pollution and avoiding greenhouse gas emissions from the energy and transport sectors. Key strategies include support for proper maintenance programs, testing and monitoring, expanded use of cleaner alternative fuels, and stronger stakeholder participation through a comprehensive information and education campaign.
4. The Signatories encourage and intend to strengthen mutually agreeable partnerships between and among the public and private sectors to pursue the foregoing activities and objectives. These partnerships include, but are not limited to, the US Energy Association, the Philippine Departments of Environment and Natural Resources, Transportation and Communication, Finance and Health, the American and Philippine Chambers of Commerce, companies, industry associations and civil society organizations.
5. USAID intends to make available additional funding of \$3.5 million for fiscal years 2004 to 2006 to support the activities described herein for the Sustainable Energy Development Program in the Philippines, bringing total available funding for the Program to \$6.5 million for the period of 1996 to 2006. This MOU does not constitute an obligation of new funds or a promise to obligate funds.
6. PDOE intends to facilitate the execution of the activities contemplated herein and as decided by the Signatories, including assistance for obtaining appropriate visas for visiting technical experts and resources to support the tax-exempt and duty-free status of commodities that may be imported and used for these activities, it being the understanding of the Signatories that the assistance provided by USAID through USDOE and otherwise hereunder for the Sustainable Energy Development Program is to be free from any taxation or fees under the laws in effect in the Philippines. PDOE may also provide, in

cash and/or in-kind, contributions to fund or supplement funding of total estimated activity costs.

7. Other implementation matters may be mutually decided by the Signatories. Two or all of the Signatories, as appropriate to the implementation matter at issue, may also use jointly agreed upon letters to confirm their mutual understanding with respect to implementation of this MOU.

Signed at Manila, in triplicate, this 13th day of January 2004.

FOR THE PHILIPPINE
DEPARTMENT OF ENERGY

Vincent S. Perez
Vincent S. Perez
Secretary

FOR THE UNITED STATES
DEPARTMENT OF ENERGY

Spencer Abraham
Spencer Abraham
Secretary

FOR THE UNITED STATES
AGENCY FOR INTERNATIONAL DEVELOPMENT

Michael J. Yates
Michael J. Yates
Mission Director, USAID Philippines

- Witnessed by -

Alberto Romulo
Alberto Romulo
Executive Secretary
Office of the President

Francis Ricciardone
Francis Ricciardone
Ambassador
American Embassy, Manila

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MEMORANDUM OF COOPERATION BETWEEN THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA AND THE MINISTRY OF MINES AND ENERGY OF THE FEDERATIVE REPUBLIC OF BRAZIL FOR COOPERATION IN HYDROGEN ENERGY TECHONOLOGY

The Department of Energy of the United States of America and the Ministry of Mines and Energy of the Federative Republic of Brazil (hereinafter referred to as the Participants),

Recognizing the joint statement issued by President George W. Bush and President Luiz Inácio Lula da Silva, in June, 2003, affirming the mutual interest of the United States and Brazil in energy security, economic prosperity, and environmental protection;

Recognizing that the Participants signed a Memorandum of Understanding in June 2003, establishing a mechanism for consultations on energy cooperation, and for exchanging ideas and information on energy issues and technologies that are of mutual interest, particularly hydrogen energy; and

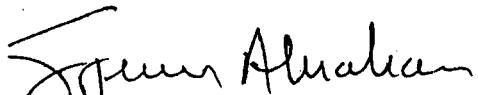
Noting that the United States and Brazil are two of the founding partners of the International Partnership for the Hydrogen Economy (IPHE) which is a multilateral forum organized to advance hydrogen research, development and deployment activities with the purpose of accelerating the transition to a global hydrogen energy economy

Have reached the following understanding:

The Participants, together with the United States Agency for International Development and a Brazilian financial agency to be nominated, intend to create a joint team to undertake a collaborative effort to advance hydrogen sector research, development and deployment activities, both bilaterally and multilaterally. This team will consult regularly to identify common areas of interaction on specific points of their respective roadmaps that cover future hydrogen production, storage, transport, distribution, end-use technology, safety codes and standards.

The Participants may call upon, as they deem appropriate, other government agencies, academic institutions and the private sector for the development of agreed cooperation efforts in the areas mentioned above.

Signed in the English and Portuguese languages, in Brasilia, on April 19th, 2004.



For the Department of Energy
of the United States of America



For the Ministry of Mines and Energy
of the Federative Republic of Brazil

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REPORT TO SECRETARY SPENCER ABRAHAM AND MINISTER DILMA ROUSSEFF ON THE STATUS OF U.S.-BRAZIL COOPERATION IN ENERGY

BACKGROUND

The United States and Brazil signed an Implementing Arrangement (IA) for cooperation in energy technology on October 14, 1997. The IA named the U.S. Department of Energy (DOE) and the Ministry of Mines and Energy of the Federative Republic of Brazil (MME) as the Executive Bodies of the IA. Three annexes to the IA were also signed on the same date: Annex I, for cooperation in the field of coal and power systems; Annex II, for cooperation in the field of renewable energy; and Annex III, for cooperation in the field of energy efficiency. The IA stipulated that DOE and MME, each names one Coordinator to supervise all cooperative activities, and to assess opportunities for expanding bilateral cooperation. Furthermore, the Coordinators may establish subcommittees to facilitate the implementation of projects initiated under the IA.

Having a mutual interest in expanding the collaboration provided for under the 1997 Implementing Arrangement to energy issues that are relevant to both countries, Secretary Abraham and Minister Rousseff signed a Memorandum of Understanding (MOU) between DOE and MME on June 20, 2003, for the establishment of a mechanism for consultations on energy cooperation. In addition to continuing collaboration in energy science and technology, the MOU established a mechanism for consultations on other energy issues of mutual interest such as energy planning and energy analysis, and energy trade and investment. The MOU also called for DOE and MME to each name a "Focal Point" to coordinate the ministerial meetings and the bilateral cooperation.

COORDINATION OF FUTURE ENERGY CONSULTATIONS/ENERGY COOPERATION

Secretary Abraham and Minister Rousseff will each designate a Focal Point at DOE and MME, respectively; to coordinate the implementation of the activities stipulated in the June 2003, MOU, including the preparation of the regular meetings of the energy consultations. These Focal Points also will act as the "Coordinators" of the 1997 Implementing Arrangement and will coordinate, approve and monitor all energy technology cooperation under the Implementing Arrangement, and will assess opportunities for expanding the cooperation.

ACCOMPLISHMENTS

The International Partnership on Hydrogen Economy (IPHE)

The United States and Brazil were two of the founding members of the IPHE which has been established to provide a mechanism for partner countries to efficiently organize, evaluate and coordinate multinational research, development and deployment programs that advance the transition to a global hydrogen economy. Minister Rousseff participated in the IPHE Ministerial meetings in Washington, D.C. from November 19-21, 2003, and

signed, on behalf of Brazil, the IPHE Terms of Reference. Secretary Abraham signed on behalf of the United States. These Terms of Reference have established the IPHE operating structure that includes a Steering Committee, and an Implementation and Liaison Committee. DOE representative is a Co-Chair of the Steering Committee, and MME representative is the Vice Chair of the Planning and Liaison Committee.

Hydrogen Roadmap

As part of the MOU signed in June 2003, DOE and MME agreed to exchange information on energy issues and technologies of mutual interest, including hydrogen technologies. Furthermore, Secretary Abraham and Minister Rousseff agreed to undertake a collaborative effort to advance hydrogen sector research, development and deployment activities, both bilaterally and multilaterally. This effort includes the establishment of a joint team of U.S. and Brazilian officials and experts, including representatives from the private sector and academic institutions, to consult regularly and identify common areas of interaction on specific points of their respective roadmaps that cover future hydrogen production, storage, transfer, end-use technologies, safety codes and standards, and outreach/communication efforts. This joint effort was launched on April 19, 2004, and is led by DOE and the U.S. Agency for International Development on the U.S. side, and MME on the Brazilian side. Secretary Abraham and Minister Rousseff signed a Memorandum of Cooperation on April 19, 2004, establishing this bilateral cooperation on hydrogen technology.

Carbon Sequestration Leadership Forum (CSLF)

The United States and Brazil were two of the founding members of the Carbon Sequestration Leadership Forum established in June, 2003 to facilitate the development of technologies for carbon dioxide separation, capture, transport and storage in underground geologic formations. Secretary Abraham signed the Charter establishing the CSLF on behalf of the United States, and Minister Rousseff signed on behalf of Brazil. The CSLF will allow the leveraging of international resources through information sharing and joint participation in projects that aim at stabilization of greenhouse gas levels in the atmosphere and securing sustainable energy for the future.

The CSLF is convening an Ad-Hoc group of experts in Salvador, Brazil, on August 20, 2004, to finalize the draft technical roadmap and recommendations of proposed projects for the Melbourne, Australia Ministerial meeting on September 13-15, 2004.

Biomass/Biodiesel Cooperation

In consultation with MME, DOE has initiated a joint study in collaboration with a number of Brazilian experts to assess the feasibility of joint projects with Brazil for the production of bio-diesel fuels. The study will involve U.S. and Brazilian private sectors and financial institutions, and will assess the benefits to Brazil such as the reduction in oil imports, the development of rural areas with sustainable, locally grown energy base, and the positive environmental benefits. In addition, on April 19, 2004, Secretary Abraham

and Minister Rousseff agreed to organize a joint Biomass/Bio-diesel workshop in Brazil in the coming months. The workshop will bring technical experts, private sector representatives and financial institutions from both countries together to review the status of the biomass/bio-diesel technologies and to identify collaborative opportunities for commercial deployment as well as for technology development.

Energy Information Exchange

DOE sent representation from the Energy Information Administration (EIA) to MME in September 2003, to exchange views on energy data collection and forecasting and how energy information contributes to energy planning and analysis. The two sides agreed on the need to develop a Memorandum of Understanding between EIA and the appropriate agency under MME for the exchange of energy information. EIA will work together with MME during the coming months to develop such a Memorandum of Understanding.

Regulatory Exchange

DOE sent a delegation from the Federal Energy Regulatory Commission (FERC), led by a FERC Commissioner, to Brazil to meet with the National Electrical Energy Agency (ANEEL). The purpose of the visit was to exchange experiences and practices as energy regulators. No next steps are planned at this time in this field.

Offshore Permitting Regulation

Representatives from DOE's Office of Fossil Energy visited Brazil in December, 2003, and met with MME staff and representatives of the Brazilian Environmental Licensing Agency (IBAMA), the National Petroleum Agency (ANP), Petrobras and the Brazilian Institute of Petroleum (IBP) to exchange views and experiences on regulatory policies practiced in both countries in the oil sector. No next steps are planned at this time. DOE will be ready to continue these exchanges, if MME so wishes, and will include other US Government agencies, such as EPA and Department of Interior, in such exchanges.

Energy Investment Symposium

DOE and MME co-hosted an Energy Investment Symposium on November 21, 2003, in Washington, D.C. Minister Rousseff participated in the symposium and was accompanied by the Presidents of Electrobras and Petrobras, and the Director General of ANEEL and ANP, and a member of the Brazilian Congress. The Brazilian delegation presented Brazil's new electric power model and recent developments in Brazil's oil and gas industry and exchanged views with U.S. companies invested in Brazil. DOE and MME will continue to explore ways to address energy investment issues through future public/private sector dialogues.

Coal and Power Systems

The United States and Brazil have had extensive collaboration in the field of coal and power systems since 1997, including

- Several conferences aimed at the utilization of Brazilian coal resources in the southern states of Rio Grande do Sul and Santa Catarina using clean and advanced power systems. These conferences included private sector representatives from both countries and private and public financial institutions.
- Joint study of a coal gasification project utilizing the site at Triunfo in Rio Grande do Sul
- Joint feasibility study, funded by the U.S. Trade Development Agency, of a \$400 million Fluidized Bed Coal plant in Brazil
- Establishment of a partnership between Brazil Southern States and the U.S. Southern States Energy Board
- A number of technology trade missions from Brazil to U.S. coal and advanced power facilities.

Cooperation in Renewable Energy

The United States and Brazil have been cooperating on renewable energy technologies since the early 1990's. This cooperation has been through DOE's National Renewable Energy Laboratory (NREL) jointly with USAID. Current work has focused on joint effort with Brazilian institutions to identify and implement cost-effective renewable-based options to support the Brazilian Government's policy of universal access to electricity and capacity building activities in the Amazon region. These joint efforts include:

- Local Partnerships and Capacity Building Activities: In 2003, NREL signed MOUs with the Federal Universities of Pará (UFPA) and Amazonas (UFAM) that provide the institutional framework for joint activities in the Amazon region's two largest states. Initial activities will include a series of training workshops in the use of NREL's analytical tools and methodologies to identify and implement least-cost rural energy options.
- Rural Energy Planning: In the state of Amazonas, NREL is working with CEAM and UFAM to conduct community-based rural electrification options analysis that will support implementation of Brazil's new universal electrification program, *Luz Para Todos* ("Lights for All"). These activities will include use of NREL's GIS-based integrated resource assessment tools and techniques to help identify least-cost energy options based on local energy resources and end-user needs. A joint workshop will be held in Golden, Colorado, in May, 2004, that will focus on integrated rural energy planning, project analysis and program development, and share experiences from rural energy development in other countries.

CONCLUSION

Secretary Abraham and Minister Rousseff have reviewed the work done thus far and agreed to continue the cooperation on the aforementioned areas of interest. The Focal Points named by Secretary Abraham and Minister Rousseff will work to maintain regular contacts between the DOE and MME working groups and explore new ways of expanding cooperative efforts.

Secretary Abraham and Minister Rousseff have approved this joint report on April 19, 2004.



For the Department of Energy of the
United States of America:



For the Ministry of Mines and Energy
of the Federative Republic of Brazil:

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**MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA
AND THE ROYAL MINISTRY OF PETROLEUM AND ENERGY OF
THE KINGDOM OF NORWAY
ON
COLLABORATION IN THE FIELD
OF
ENERGY RESEARCH, DEVELOPMENT AND DEMONSTRATION**

The Department of Energy of the United States of America and the Royal Ministry of Petroleum and Energy of the Kingdom of Norway (hereinafter referred to as the Parties);

Wishing through this Memorandum of Understanding (hereinafter referred to as the Memorandum) to enhance relations between their respective countries in the area of energy research, development and demonstration (RD&D); and

Determined to further develop cooperation in the promotion of scientific and technological activities in a broad range of energy fields, for the benefit of both Parties' countries and of the international community;

Hereby agree as follows:

1. Scope

Collaboration under this Memorandum may include, but is not limited to, the following fields:

- a. Fossil energy, including carbon sequestration, hydrogen and clean fuels, and new energy technologies;
- b. Energy efficiency;
- c. Renewable energy; and
- d. Other fields as the Parties may agree to in writing.

2. Forms of Cooperative activities

2.1 Cooperative activities under this Memorandum may be undertaken by:

- a. The Parties

or

- b. laboratories, research institutions, universities or contractors of the Parties.

2.2 Cooperative activities may include:

- a. meetings between the Parties with the aim of exchanging views on overall energy, market and technology perspectives, and jointly identifying mechanisms to foster productive and future-oriented partnerships between the public and private sectors of the United States and Norway in the field of energy RD&D;
- b. meetings and projects between firms (public and private), or between firms and laboratories, research institutions and academia aimed at identifying areas of common interest, and to explore and engage in co-operative activities to promote the acceleration of demonstration and use of state of the art technology and research-results as well as to enhance industrial relevance of scientific activities;
- c. meetings and projects between various research institutions, laboratories or academia to discuss and exchange information on scientific and technological aspects of general or specific energy RD&D subjects, and to identify research and development projects and programs that may be usefully undertaken on a cooperative basis;
- d. visits and exchanges of scientists, technical personnel and other experts on general or specific Energy RD&D subjects.

3. Project Agreements

Detailed provisions for carrying out the specified forms of cooperation, including, as appropriate, such matters as technical scope, exchange of personnel, equipment, samples and materials, exchange of proprietary information, the protection and allocation of intellectual property, management, total costs, cost sharing, and schedule, shall be subject to individual written agreements between the entities identified in Section 2.1.

4. Management

- 4.1 To supervise the cooperation under this Memorandum, each Party shall designate a Lead Co-coordinator. Each Party shall also designate a Technical Co-coordinator to assist the Lead Co-coordinator in carrying out activities under this Memorandum. In addition, the Parties shall designate an official or officials responsible for collaboration in each of the technical fields of cooperation identified in Section 1.
- 4.2 The Lead Co-coordinators shall on the behalf of the Parties or together with representatives from the Parties, meet annually, or as otherwise jointly decided, alternately in the United States or Norway. At the meetings, the Lead Co-coordinators shall evaluate the status of cooperation under this Memorandum in conjunction with the Parties. This evaluation shall include a review of the past year's activities and accomplishments, and of the activities planned for the following year within each of the technical fields of cooperation. The Technical Co-coordinators may participate in these activities at the discretion of the Lead Co-coordinators.

5. Funding

- 5.1 Unless jointly approved in writing, any cost arising from collaboration between the Parties shall be borne by the Party that incurs them.
- 5.2 Collaboration under this Memorandum shall be subject to the availability of appropriated funds.

6. General Provisions

- 6.1 Each Party shall conduct the activities provided for in this Memorandum in accordance with the laws and regulations of its respective country.
- 6.2 Any dispute concerning the interpretation or application of this Memorandum shall be settled by consultations between the Parties.

7. Term, amendment and termination of the Memorandum

- 7.1 This Memorandum shall enter into force upon signature, and remain in force for five (5) years. It shall automatically be extended for consecutive periods of five years, unless it is terminated by the Parties according to the provisions of this Memorandum.

- 7.2 Either Party may terminate the Memorandum at any time upon ninety (90) days written notice to the other Party. Termination of this Memorandum shall not affect the completion of activities initiated prior to such termination.
- 7.3 This Memorandum may be amended at any time by written agreement of the Parties.

Signed in Amsterdam, the Netherlands this 23rd day of May , 2004, in duplicate.

FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA:

James A. Halligan

FOR THE ROYAL MINISTRY OF
PETROLEUM AND ENERGY OF
THE KINGDOM OF NORWAY:

Einar Steensmo

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IMPLEMENTING ARRANGEMENT

CONCERNING IRRADIATION OF EIGHT PINS IN THE PHENIX REACTOR

under the

Agreement between

The Department of Energy of the United States of America

and

The Commissariat à l'Energie Atomique of France

For Cooperation in Advanced Nuclear Reactor Science and Technology

The Department of Energy of the United States of America (DOE) and the Commissariat à l'Energie Atomique of France (CEA), hereinafter referred to as the "Parties";

NOTING the Agreement between the Department of Energy of the United States of America and the Commissariat à l'Energie Atomique of France for Cooperation in Advanced Nuclear Reactor Science and Technology of September 18, 2000 (the "Agreement"), which includes advanced reactor materials irradiation development and testing as an area of cooperation between the Parties;

NOTING that the Parties have respectively developed research programs in the minor actinides transmutation domain, notably in the fuel sector, and that CEA is operating the PHENIX experimental reactor for this purpose;

NOTING that the Parties desire to perform an experimental irradiation project in the PHENIX experimental reactor, to test various types of fuel loaded with minor actinides under constant conditions and acquire data necessary to permit selection of the best-performing fuel prior to any qualification program;

NOTING that the Japan Atomic Energy Research Institute (JAERI), having cooperated in the past with DOE, and the European Commission's Institut des Transuraniens (ITU), having developed a similar research program, have expressed a desire to take part in the Parties' experimental irradiation project; and

NOTING the Parties' determination to collaborate on a "FUTURIX FTA" program concerning the irradiation of eight fuel elements in the PHENIX reactor;

HEREBY AGREE AS FOLLOWS:

ARTICLE 1 - DEFINITIONS

For purposes of this Implementing Arrangement, the following definitions shall apply:

COOPERATING ENTITIES: DOE, CEA, ITU, and JAERI.

DOMAIN: the transmutation of minor actinides (fuel element sector).

PROGRAM: the "FUTURIX FTA" program concerning the irradiation of eight fuel pins in the PHENIX experimental reactor as defined in the technical and financial appendix attached to this Implementing Arrangement as Appendix I and constituting an integral part hereof. The PROGRAM constitutes "joint research" within the meaning of section II-B-2 (C) of Annex I to the Agreement.

RESULTS: manufacturing data as well as analyses results pertaining to irradiated fuel pins and reference samples (not irradiated) arising from the PROGRAM, as well as data pertaining to the PHENIX experimental reactor required for RESULTS interpretation calculations.

KNOWLEDGE: all know-how, data, specifications, software or any other type of information necessary to perform the PROGRAM belonging to a Party prior to execution of the PROGRAM. A list of KNOWLEDGE is set forth in Appendix II attached to this Implementing Arrangement and constituting an integral part hereof.

ARTICLE 2 - PURPOSE

- 2.1 The purpose of this Implementing Arrangement is:
 - to set out the terms and conditions according to which the Parties will collaborate to perform the PROGRAM, and
 - to set out the rules governing the assignment of RESULTS ownership and the conditions limiting usage of same.
- 2.2 This Implementing Arrangement is subject to and governed by the Agreement. In case of any inconsistency between this Implementing Arrangement and the Agreement, the terms of the Agreement shall prevail.

ARTICLE 3 - PROGRAM FINANCIAL AND IN-KIND CONTRIBUTIONS

- 3.1 Contributions by the Parties, subject to the availability of appropriated funds, are:
 - 3.1.1 DOE contributions, after deduction of the monetary value (to be mutually agreed by the Parties) of in-kind material provided, shall consist of:
 - contribution in cash covering 50% of the following costs:
 - manufacture and test/inspection of pins, with their extensions,
 - transportation of eight pins from ITU to PHENIX, and from PHENIX to the analysis laboratories,
 - procurement, assemblies, controls, disassemblies and post-irradiation analyses necessary for the capsule, drafting the files and drawings associated with the irradiation device and CEA/PHENIX facility safety/criticality analyses,
 - irradiations (irradiation monitoring and analysis file, neutrons).
 - contribution in-kind relating to:
 - provision to ITU and CEA of a quantity of americium oxide necessary to manufacture pellets for irradiation and for the upstream R&D phase to perfect manufacturing,
 - manufacturing, transportation of pellets.
 - 3.1.2 CEA contribution shall consist of
 - contribution in cash covering 50% of the following costs:
 - manufacture and test/inspection of pins, with their extensions,
 - transportation of the 8 pins from ITU to PHENIX, and from PHENIX to the analysis laboratories,
 - procurement, assemblies, controls, disassemblies and post-irradiation analyses necessary for the capsule,

- drafting the files and drawings associated with the irradiation device and CEA/PHENIX facility safety/criticality analyses,
 - irradiations (irradiation monitoring and analysis file, neutrons).
- contribution in kind relating to:
- purification of the quantity of americium oxide necessary to manufacture pellets for irradiation and for the upstream R&D phase to perfect manufacturing,
 - manufacturing and transportation of pellets.

3.2 Potential contribution from JAERI:

The Parties expect a contribution from JAERI of 10% of the total PROGRAM cost to be made in exchange for access to all nitride-related RESULTS from the PROGRAM. The Parties also expect JAERI to make available its nitride-related data. CEA shall be responsible for securing JAERI's contribution.

This JAERI contribution shall reduce the DOE and CEA contributions in equal part.

3.3 Contribution from ITU:

CEA shall be responsible for obtaining ITU's technical contribution and be responsible for ITU's access to the RESULTS.

3.4 The provisional PROGRAM schedule, including proposed contribution schedule, is described in detail in Appendix I.

ARTICLE 4 - FINANCIAL ACCOUNTING

4.1 The Parties estimate the total cost of the six-year PROGRAM will be 6,493,037 Euros

4.1.1 Subject to Article 3.2, DOE's contribution to the PROGRAM will be payable in U.S. dollars, in 6 annual installments, within 60 days after receipt of invoices issued by CEA. Each annual invoice will be sent to DOE on the anniversary date of signature of this Implementing Arrangement and will include U.S. dollar to Euro conversion charges, at the rate given by "Banque de France" on such anniversary date, payable by DOE.

4.1.2 DOE intends to make an initial payment of 500,000 Euros within 60 days of the date that this Implementing Arrangement enters into force. All subsequent payments are subject to adjustment in accordance with Article 3.2.

4.2 DOE will pay its contribution to the PROGRAM in accordance with applicable DOE financial disbursement procedures, directed to the following payee:

CEA/CADARACHE
UG/TD
Bât.130
13108 Saint Paul lez Durance Cedex, France

Bank account :

BNP, 7 place Vendôme, 75001 Paris, France

Bank code: 30004 – branch office code: 00601 – account n°: 00021518978 – Clé RIB: 21

- 4.3 CEA shall maintain or cause to be maintained books of account, in accordance with generally accepted accounting practices, concerning PROGRAM contributions and expenditures. On an annual basis for the duration of the PROGRAM, CEA shall provide an annual financial report concerning the PROGRAM to the Steering Committee established under Article 5 of the Agreement.
- 4.4 At its sole cost, DOE shall have the right to audit the account maintained under Article 4.3 of this Implementing Arrangement. Not more than one such audit will be performed in any U.S. fiscal year.

ARTICLE 5 - MANAGEMENT

5.1 Tracking

- 5.1.1 Each Party will appoint a Contact who will be entrusted with management and continual tracking of the PROGRAM, including the exchanges of KNOWLEDGE. Each Contact will report to his/her management concerning the progress of the PROGRAM.
- 5.1.2 The Contacts will make an annual report on the progress of the PROGRAM to the Steering Committee established under Article 5 of the Agreement. If necessary to complete the PROGRAM, such financial report may include a recommendation for additional financial and/or in-kind contributions by the Parties or others.

5.2 Exchange of KNOWLEDGE

- 5.2.1 All KNOWLEDGE in the possession of the Parties necessary for the dimensioning of fuel pins, drafting of irradiation files (technical file and safety file), and interpretation of post-irradiation analysis results, will be exchanged in the form of referenced technical documents. CEA shall be responsible for obtaining ITU's and JAERI's KNOWLEDGE and providing it to DOE.
- 5.2.2 Technical documents will be circulated in the English language.

5.3 Circulation of RESULTS

- 5.3.1 Subject to the provisions of Article 3.2, all RESULTS pertaining to the manufacture of fuels, characterisation of fuels, measurements of fuel properties, dimensioning and design of the irradiation device, irradiation safety and technical studies, and the history of irradiation at post-irradiation analyses will be circulated among the COOPERATING ENTITIES in the form of technical reports.
- 5.3.2 A synthesis file covering the entire PROGRAM will be jointly drafted by the Parties upon completion of the PROGRAM.

- 5.3.3 Technical meetings of specialists will be held as often as required in order to ensure monitoring and correct performance of the PROGRAM. The location of said meetings will be jointly agreed by the Contacts. All COOPERATING ENTITIES will be routinely invited. Minutes will be drafted for all meetings.
- 5.3.4 Reports and minutes will be drafted in the English language by the main actors. The latter are designated in Table I of Appendix I.

ARTICLE 6 - INTELLECTUAL PROPERTY

- 6.1 The protection and allocation of intellectual property arising under the activities conducted under this Implementing Arrangement shall be governed by Annex I to the Agreement.
- 6.2 A technology management plan within the meaning of section II.B. of Annex I to the Agreement is set forth in Appendix III attached to this Implementing Arrangement and constituting an integral part hereof.

ARTICLE 7 - LIABILITY

Without prejudice to Article 8 of the Agreement and in its capacity as the nuclear operator, CEA shall bear the financial consequences of its liability as provided for by the law and regulations of France concerning France's implementation of the Paris Convention on Third Party Liability in the Field of Nuclear Energy of July 29, 1960, and its protocols.

ARTICLE 8 - SHUTDOWN OF THE PHENIX REACTOR

- 8.1 In the event a decision is made to shut down operation of the PHENIX reactor, CEA shall notify DOE of said decision as quickly as possible by registered letter.
- 8.2 In the event of the shutdown of the PHENIX reactor, the Parties shall consult as soon as possible on the distribution of KNOWLEDGE generated and to be generated by the PROGRAM, the disposition of material utilized in the PROGRAM, and the disposition of unspent financial contributions in the possession of CEA.

ARTICLE 9 - TERM, AMENDMENT AND TERMINATION

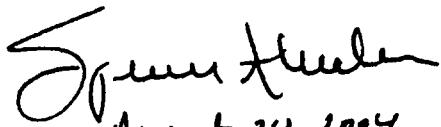
- 9.1 This Implementing Arrangement shall enter into force upon signature and shall remain in force for 6 years, so long as the Agreement remains in force. It may be amended or extended by written agreement of the Parties, so long as the Agreement remains in force..
- 9.2 In the event of budgetary restrictions, significant restructuring and/or reorientation of a Party's programs, or in the event that access to a Party's facilities is limited for any reason whatsoever, or if a Party's performance of its undertakings under this Implementing

Arrangement is prevented, limited or hindered by any other circumstance, the Parties will meet as quickly as possible in order to jointly agree to a revision of the Implementing Arrangement or its prolongation in time (to permit continuation of the PROGRAM to completion), or the early termination of the Implementing Arrangement, under conditions that are fair to the Parties.

- 9.3 The provisions set out in Article 7 shall remain in effect notwithstanding the expiration or termination of this Implementing Arrangement.
- 9.4 Either Party may terminate this Implementing Arrangement by giving 6 months written notice to the other Party.
- 9.5 Any activities not completed upon expiration or termination of this Implementing Arrangement may be continued to completion under the terms of this Implementing Arrangement

DONE in duplicate both in the English and French languages. The English version prevails.

FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA:


Date: August 24, 2004
Place: Paris, France

FOR THE COMMISSARIAT A L'ENERGIE
ATOMIQUE OF FRANCE:

Date: 24-08-2004
Place: 

APPENDIX I
TECHNICAL AND FINANCIAL APPENDIX

TECHNICAL APPENDIX:

Experimental grid

The irradiation experimental grid was commonly defined and approved by all PROGRAM participants (CEA/ITU and DOE) during the meeting of the "fuel and materials" workgroup (WG2) constituted in the framework of the CEA-DOE collaboration. Said grid comprises:

- 4 pins defined by Argonne National Laboratory (ANL) and Los Alamos National Laboratory (LANL) comprising:
 - o 1 pin of Pu-Am-Zr metallic fuel bonded with sodium,
 - o 1 pin of U-Pu-Np-Am-Zr metallic fuel bonded with sodium,
 - o 1 pin of (Pu, Am, Zr)N nitride fuel bonded with sodium,
 - o 1 pin of (U, Pu, Am, Np)N nitride fuel bonded with sodium.
- 2 pins defined by the ITU comprising:
 - 1 pin made of (Pu, Am, Zr)O₂ diluted in an inert metallic matrix (Mo⁹²) bonded with helium
 - 1 pin made of (Pu, Am)O₂ diluted in an inert metallic matrix (Mo⁹²) bonded with helium.
- 2 pins defined by the CEA:
 - o 2 pins made of (Pu, Am)O₂ diluted in a ceramic matrix (MgO) differentiated in terms of their Pu and Am content and bonded with helium.

The 8 experimental pins will be mounted in a standard Phénix irradiation device (KCI capsule) containing 19 pins. Eleven other pins, defined outside the framework of this Implementing Arrangement, will complete the device.

The pins are designed in two sections: one active leaktight 1 meter section in which the fuel is found and an inactive or "extension" section 0.80 meters long, welded to the lower part of the active pin.

Irradiation is scheduled for the two last reactor cycles, that is, insertion into the reactor planned at the end of 2006 (for a Phénix restart in mid 2003).

Technical content

The technical content covers the manufacturing, irradiation and post-irradiation analyses results of the 8 experimental pins. It covers :

1. Supply by the DOE to all manufacturers with a quantity of americium oxide necessary to perform the manufacturing process development/perfection program, R&D on new fuels (property measurements), manufacturing and control of fuel pellets for the irradiation itself.

2. Purification of the americium oxide by CEA both for its own requirements and those of ITU.
3. Manufacturing of fuel pellets: each participant will be responsible for the costs associated with the development of the pellet manufacturing process and manufacturing of its own fuel pellets in its laboratory(ies). Monitoring of manufacture by CEA is in accordance with point 8 below. Manufacturing results will be shared by all participants.
4. Transportation of pellets from CEA and DOE to ITU for cladding. This will be undertaken by the dispatching manufacturer.
5. The manufacturing of all pins by ITU, that is to say filling of pins with fuel, filling of pins with helium or sodium, welding of plugs and extensions, test/inspection of pins and all reports associated with said operations.
6. Procurement by CEA of all structures (pins, plugs, springs, head, base and body of the capsule, etc).
7. Manufacture of the capsule and irradiation device by CEA with the associated controls, including the positioning of the spacer wire on experimental pins.
8. Drafting of all contractual files under quality assurance (ISO 9001).
 - with respect to Phénix: presentation file, technical file, safety file, manufacturing report and deviation processing,
 - with respect to manufacturers: specifications and drawings.All the files and reports will be written by CEA, with the exception of the manufacturing reports which will be written by each manufacturer. In the context of file requirements, participants' KNOWLEDGE associated with their national programs will be exchanged.
9. Transportation of pins from ITU to the Phénix plant.
10. Irradiation in the Phénix reactor.
11. Transportation of irradiated pins from the Phénix plant to participants' post-irradiation analyses laboratories (CEA, DOE and ITU).
12. Results of post-irradiation analyses for all pins irradiated in participating laboratories. Analyses results will be shared by all participants.

DISTRIBUTION OF TASKS

TABLE N°1: DISTRIBUTION OF THE WORKLEAD BETWEEN THE CO-OPERATING ENTITIES

Action	Actor
PELLETS	
Provision to CEA of americium oxide for ITU and CEA requirements (transportation included)	DOE
Purification of americium oxide for ITU and CEA requirements	CEA
Transportation of purified americium oxide for ITU requirements	CEA
Manufacture of metallic fuel pellets	DOE
Manufacture of nitridure fuel pellets	DOE
Manufacture of (U, Pu, Am)O ₂ fuel pellets	ITU
Manufacture of cermet oxide fuel pellets	ITU
Manufacture of cerce oxide fuel pellets	CEA
Transportation of DOE pellets to ITU	DOE
Transportation of CEA pellets to ITU	CEA
PINS	
Procurement of structures and delivery to ITU	CEA
Manufacturing and control of 8 pins	ITU
Welding and control of 8 extensions	ITU
Transportation of pins to the Phénix reactor	ITU
CAPSULE	
Procurement of structures	CEA
Manufacturing, Assembly and Controls	CEA
IRRADIATION FILE	
Presentation, technical, safety files, specifications and plans	CEA
Manufacturing, quality assurance and monitoring of suppliers	CEA
CEU/Phénix facility criticality and safety	CEA
IRRADIATION IN PHENIX	
Analysis of irradiation files	CEA
Irradiation and irradiation monitoring	CEA
WASTE MANAGEMENT	
Management of DOE and ITU fuel wastes	DOE and ITU
Management of CEA fuel wastes	CEA

KEY DATES

- Handing over of the technical file to Phénix : February 2005
- Acceptance testing of pellets : January 2006
- Insertion into reactor : November 2006
- Removal from reactor : November 2008
- Post-irradiation analyses from 2009

This schedule is dependent on Phénix operation and may be revised.

FINANCIAL APPENDIX

Table No. 2 provides estimate of the PROGRAM cost, broken down by task and the distribution of costs between the Parties.

TABLE N°2:PROGRAMME COST ESTIMATE IN EUROS

TASKS	Amount	Investment amount	Distribution of costs
PELLETS			
Pellet manufacturing			Outside the scope of the Agreement
Pellet transportation US to ITU and CEA to ITU			
Provision of AmO ₂ and shipment			100% DOE
AmO ₂ purification (CEA-ITU)			100% CEA
PINS			
Manufacturing and controls (8 short pins)	464 000	60 000	50% DOE 50% CEA
Manufacturing and controls with extensions	128 000		50% DOE 50% CEA
Transportation ITU to PHENIX	125 000		50% DOE 50% CEA
CAPSULE			
Procurement	1 000 000		50% DOE 50% CEA
Assembly, controls, disassembly and post-irradiation analyses	62 917	186 480	50% DOE 50% CEA
FILES			
Presentation, technical, safety, specification and drawings	1 501 093		50% DOE 50% CEA
Manufacturing	1 500 353		50% DOE 50% CEA
CEI Phénix (safety and criticality)	59 994		50% DOE 50% CEA
IRRADIATION			
Irradiation monitoring and analysis file	445 200		50% DOE 50% CEA
Neutrons	810 000		50% DOE 50% CEA
Transportation to analysis laboratories	150 000		50% DOE 50% CEA

Total amounts	6 246 557	246 480
CEA contribution	3 123 278,5	123 240
DOE contribution	3 123 278,5	123 240

Overall estimated total: 6 493 037 Euros

Table No. 3 provides the schedule for estimate of expenditure and distribution of expenditure between the Parties.

TABLE N°3 : ESTIMATE OF EXPENDITURE SCHEDULE IN EUROS

	2003	2004	2005	2006	2007	2008	Task amount	Undertaking
PINS:								
Manufacturing and controls with extensions (8 pins)	60 000,00	167 000,00	167 000,00	130 000,00			524 000,00	50% DOE 50% CEA
Controls and extensions		15 000,00	75 000,00	38 000,00			128 000,00	50% DOE 50% CEA
Pin transportation to Phénix				125 000,00			125 000,00	50% DOE 50% CEA
CAPSULE:								
Procurement	500 000,00	250 000,00	250 000,00				1 000 000,00	50% DOE 50% CEA
Manufacturing, assembly and controls		30 730,00	155 750,00	62 917,00			249 397,00	50% DOE 50% CEA
FILES:								
Presentation, safety and specifications	303 757,00	568 304,00	314 516,00	314 516,00			1 501 093,00	50% DOE 50% CEA
Manufacturing, quality assurance and supplier monitoring	483 000,00	572 250,00	222 551,50	222 551,50			1 500 353,00	50% DOE 50% CEA
Criticality and safety				59 994,00			59 994,00	50% DOE 50% CEA
PHENIX IRRADIATION:								
File analysis	69 400,00	198 900,00	39 250,00	73 450,00	64 200,00		445 200,00	50% DOE 50% CEA
Irradiation					405 000,00	405 000,00	810 000,00	50% DOE 50% CEA
Pin transportation						150 000,00	150 000,00	50% DOE 50% CEA
Total	1 416 157,00	1 802 184,00	1 224 067,50	1 026 428,50	469 200,00	555 000,00	6 493 037,00	

APPENDIX II

LIST OF KNOWLEDGE

KNOWLEDGE exchange pertains to:

1. Fuel and pin specifications and manufacturing procedures relevant to the fabrication of fuels for the FUTURIX-FTA experiment and including the R&D phase on fabrication process optimisation,
2. The characteristics and physico-chemical properties of new and irradiated FUTURIX-FTA fuels or simulants (fuels whose composition is close to that of FUTURIX-FTA fuels, the behavior of which may be likened to or extrapolated from that of FUTURIX-FTA fuels), required for the fuel modelling and design studies of the FUTURIX-FTA pins,
3. Laws and behavioral models concerning FUTURIX-FTA fuels or their simulants under irradiation in normal operation, incident and accident modes, required for the mandatory technical and safety files,
4. Post-irradiation examination performed on FUTURIX-FTA fuels or their simulants, interpretation of examination results, and fuel modelling performed with the codes developed by each participant.

APPENDIX III TECHNOLOGY MANAGEMENT PLAN

Ownership rights

Each Party shall remain the owner of KNOWLEDGE, whether patented or not, that it held prior to execution of the Implementing Arrangement.

RESULTS, other than inventions, arising from the PROGRAM shall be construed as owned by the Party creating the RESULTS. However, each Party may use or reproduce said RESULTS without the consent of the other Party. With respect to publication or disclosure of said RESULTS, except for manufacturing data, any such RESULTS delivered to one Party shall be subject to the unlimited right to publish or disclose such RESULTS for any purpose.

For inventions, i.e., subject matter that is or may be patentable, the Parties shall jointly agree to an equitable allocation of rights and responsibilities within a reasonable time from the time a Party becomes aware of the creation of an invention, taking into account the relative contributions of the Parties and other COOPERATING ENTITIES, and other factors deemed appropriate.

Usage of RESULTS

Each Party, and the other COOPERATING ENTITIES, will have the right to make use of RESULTS, patented or not, obtained within the framework of the PROGRAM for its own research requirements free of cost.

The industrial and commercial usage of RESULTS, patented or not, may be performed through transfer of license or licenses to third parties.

Licenses may be transferred by a Party or any third party designated by the latter. The licensee and main license terms and conditions should be established in consideration of market conditions and the joint interest of the Parties.

A

**MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA
AND
THE NATIONAL DEVELOPMENT AND REFORM COMMISSION
OF THE PEOPLE'S REPUBLIC OF CHINA**

ON BILATERAL ENERGY POLICY DIALOGUE

Whereas, the Department of Energy of the United States of America and the National Development and Reform Commission of the People's Republic of China (hereinafter referred to as the "Participating Agencies"), have on-going exchanges of views and expertise under the Peaceful Uses of Nuclear Technologies Agreement, and the Oil and Gas Industry Forum;

Whereas, bilateral collaboration has been carried out in High Energy Physics, Nuclear Physics, Fossil Energy, Energy Efficiency and Renewable Energy, and Energy Information; and

Whereas, the United States and the People's Republic of China recognize that they face similar energy challenges, and that energy policy decisions by one country can have implications for the other in the context of the global energy market;

The Participating Agencies have reached the following understanding:

ARTICLE I

The Participating Agencies intend to form an Energy Policy Working Group (hereinafter referred to as the "Working Group") to conduct energy policy dialogues between the United States and the People's Republic of China. The purpose of the Working Group is to enhance the understanding of energy issues, to promote the exchange of information on energy policies and technologies, and to review and develop cooperative activities on energy-related topics of mutual interest.

ARTICLE II

The objectives of the Working Group include dialogues on:

- A) Facilitating exchange of information on energy security;

- B) Discussing energy policies and strategies, such as regulatory development and reform;
- C) Exchanging views on energy efficiency, conservation and related environmental policies of both countries;
- D) Exchanging views on energy technology deployment options and collaborative technology activities, including cooperation on carbon sequestration, hydrogen economy, renewable energy, nuclear, oil and gas, and clean coal; and
- E) Other topics as mutually agreed.

ARTICLE III

For the purposes of promoting closer contacts and mutually beneficial dialogues, the arrangements for the Working Group's meetings should be as follows:

- A) Participants in the dialogues may include representatives from other entities of the United States of America and the People's Republic of China as the Participating Agencies deem appropriate for the agenda for the dialogues; and
- B) Each Participating Agency should appoint an administrative secretary who should make preparations for the dialogues and communicate with the Participating Agencies between dialogues.

ARTICLE IV

The Working Group should be guided by the following procedures:

- A) Dialogues should be held on a regular basis, alternately in the United States of America and in the People's Republic of China;
- B) Special meetings of the Working Group may be held as determined by the Participating Agencies;
- C) The time of dialogues and other meetings should be determined at least one month in advance following consultations between the Participating Agencies;
- D) The agendas for all meetings should be determined by the Participating Agencies; and
- E) It is intended that the participants from both sides will be responsible for their own travel and lodging expenses. The Participating Agency hosting the meeting should be responsible and pay the costs for arrangements

associated with the meeting, including local transportation.

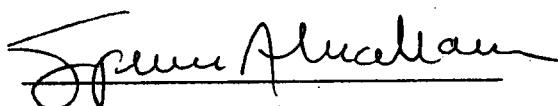
ARTICLE V

The Participating Agencies should conduct dialogues in accordance with applicable laws and regulations of their respective countries and subject to the availability of funds and other resources.

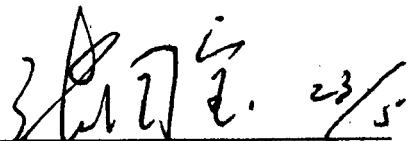
ARTICLE VI

Cooperation under this Memorandum of Understanding (Memorandum) may commence upon signature. Revisions to this Memorandum may be suggested in writing by the Participating Agencies at any time. If one Participating Agency wishes to terminate its participation in this Memorandum, it should provide 90 days' advance notice in writing to the other Participating Agency.

Signed at AMSTERDAM, this 23rd day of MAY, 2004,
in duplicate, in the English and Chinese languages.



FOR THE DEPARTMENT OF
ENERGY OF THE UNITED
STATES OF AMERICA:



FOR THE NATIONAL DEVELOPMENT
AND REFORM COMMISSION OF THE
PEOPLE'S REPUBLIC OF CHINA:

B

CHARTER FOR THE CARBON SEQUESTRATION LEADERSHIP FORUM (CSLF): A CARBON CAPTURE AND STORAGE TECHNOLOGY INITIATIVE

The undersigned national governmental entities (collectively the "Members") set forth the following Terms of Reference for the Carbon Sequestration Leadership Forum (CSLF), a framework for international cooperation in research and development for the separation, capture, transportation and storage of carbon dioxide. The CSLF will seek to realize the promise of carbon capture and storage over the coming decades, making it commercially competitive and environmentally safe.

1. Purpose of the CSLF

To facilitate the development of improved cost-effective technologies for the separation and capture of carbon dioxide for its transport and long-term safe storage; to make these technologies broadly available internationally; and to identify and address wider issues relating to carbon capture and storage. This could include promoting the appropriate technical, political, and regulatory environments for the development of such technology.

2. Function of the CSLF

The CSLF will seek to:

- 2.1 Identify key obstacles to achieving improved technological capacity
- 2.2 Identify potential areas of multilateral collaborations on carbon separation, capture, transport and storage technologies
- 2.3 Foster collaborative research, development, and demonstration (RD&D) projects reflecting Members' priorities
- 2.4 Identify potential issues relating to the treatment of intellectual property
- 2.5 Establish guidelines for the collaborations and reporting of their results
- 2.6 Assess regularly the progress of collaborative R&D projects and make recommendations on the direction of such projects
- 2.7 Establish and regularly assess an inventory of the potential areas of needed research
- 2.8 Organize collaboration with all sectors of the international research community, including industry, academia, government and non-government organizations; the CSLF is also intended to complement ongoing international cooperation in this area

- 2.9 Develop strategies to address issues of public perception
- 2.10 Conduct such other activities to advance achievement of the CSLF's purpose as the Members may determine

3. Organization of the CSLF

- 3.1 A Policy Group and a Technical Group will be formed. Unless otherwise determined by consensus of the Members, each Member will make up to two appointments to the Policy Group and up to two appointments to the Technical Group. Other individuals may attend the Policy Group and Technical Group meetings as deemed necessary by the appointed representatives.
- 3.2 The Policy Group will govern the overall framework and policies of the CSLF, periodically review the program of collaborative projects, and provide direction to the Secretariat. The Group should meet at least once a year, at times and places to be determined by its appointed representatives. All decisions of the Group will be made by consensus of the Members.
- 3.3 The Technical Group will report to the Policy Group. The Technical Group will meet as often as necessary to review the progress of collaborative projects, identify promising directions for the research, and make recommendations to the Policy Group on needed actions.
- 3.4 The CSLF will meet at such times and places as determined by the Policy Group.
- 3.5 The principal coordinator of the CSLF's communications and activities will be the CSLF Secretariat. The Secretariat will: (1) organize the meetings of the CSLF and its sub-groups, (2) arrange special activities such as teleconferences and workshops, (3) receive and forward new membership requests to the Policy Group, (4) coordinate communications with regard to CSLF activities and their status, (5) act as a clearing house of information for the CSLF, (6) maintain procedures for key functions that are approved by the Policy Group, and (7) perform such other tasks as the Policy Group directs. The focus of the Secretariat will be administrative. The Secretariat will not act on matters of substance except as specifically instructed by the Policy Group.
- 3.6 The Secretariat may, as required, use the services of personnel employed by the Members and made available to the Secretariat. Unless otherwise agreed, such personnel will be remunerated by their respective employers and will remain subject to their employers' conditions of employment.
- 3.7 The U.S. Department of Energy will act as the CSLF Secretariat unless otherwise decided by consensus of the Members.

- 3.8 Each Member will individually determine the nature of its participation in the CSLF activities.

4. Membership

- 4.1 This Charter, which is administrative in nature, does not create any legally binding obligations between or among its Members. Each Member will conduct the activities contemplated by this Charter in accordance with the laws under which it operates and the international instruments to which it is a party.
- 4.2 The CSLF is open to other national governmental entities and its membership will be decided by the Policy Group.
- 4.3 Technical and other experts from within and without CSLF Member organizations may participate in R&D projects conducted under the auspices of the CSLF. These projects may be initiated either by the Policy Group or the Technical Group.

5. Funding

Unless otherwise determined by the Members, any costs arising from the activities contemplated by this Charter will be borne by the Member that incurs them. Each Member's participation in CSLF activities is subject to the availability of funds, personnel and other resources.

6. Open Research and Intellectual Property

- 6.1 To the extent practicable, the R&D fostered by the CSLF should be open and non-proprietary.
- 6.2 The protection and allocation of intellectual property, and the treatment of proprietary information, generated in R&D collaborations under CSLF auspices will be defined by implementing arrangements.

7. Commencement, Extension, Modification, Withdrawal, and Termination

7.1 Commencement and Modification

- 7.1.1 This Charter will commence on June 25, 2003 and will continue for 10 years unless extended or terminated.
- 7.1.2 This Charter may be modified in writing at any time by unanimous consent of all Members.

7.2 Extension, Withdrawal and Termination

- 7.2.1 By written arrangement, the Members may extend this Charter for additional periods.
- 7.2.2 A Member may withdraw from membership in the CSLF by giving written notice to the other Members 90 days prior to its anticipated withdrawal. The Members may, by unanimous consent, terminate this Charter by written arrangement at any time.

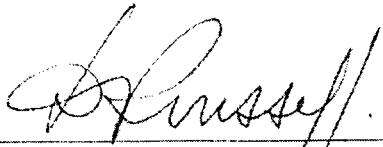
Charter of the
CARBON SEQUESTRATION LEADERSHIP FORUM



Vice-President of the European Commission

DATE:

Charter of the
CARBON SEQUESTRATION LEADERSHIP FORUM



For the Ministry of Mines and Energy
of the Federative Republic of Brazil

DATE:

Charter of the
CARBON SEQUESTRATION LEADERSHIP FORUM



For the Ministry of Mines and Energy
of the Federative Republic of Brazil

DATE:

Charter of the

CARBON SEQUESTRATION LEADERSHIP FORUM

Done at Washington, DC this 25th day of June, 2003

For the Department of Industry, Tourism, and Resources of Australia

For Natural Resources Canada

For the Ministry of Mines and Energy of the Government of Colombia

For the Ministry of Power of the Government of India

For the Ministry of Economy, Trade, and Industry of the Japanese Government

For the Ministry of Petroleum and Energy of the Kingdom of Norway

For the Ministry of Minerals and Energy of the Republic of South Africa

For the Department of Energy of the United States of America

For the Ministry of Mines and Energy of the Federative Republic of Brazil

Representative of the Government of the People's Republic of China

Vice-President of the European Commission



For the Ministry of Productive Activities of the Government of Italy

For the Secretariat of Energy of the United Mexican States

For the Ministry of Economic Development and Trade of the Government of Russia

For the Department of Trade and Industry of the United Kingdom of Great Britain and Northern Ireland

Charter of the

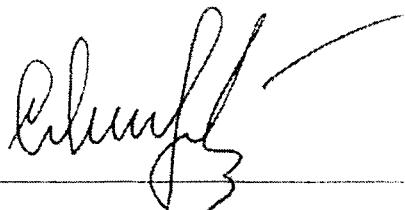
CARBON SEQUESTRATION LEADERSHIP FORUM

For the Department of Trade and Industry
of the United Kingdom of Great Britain and Northern Ireland

R3E

DATE: 26 June

Charter of the
CARBON SEQUESTRATION LEADERSHIP FORUM



For the Ministry of Industry, Science and Technology
of the Russian Federation

DATE:

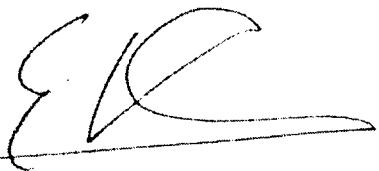
Charter of the
CARBON SEQUESTRATION LEADERSHIP FORUM

Bjørt Skjelbred

For the Ministry of Petroleum and
Energy of Norway

DATE:

Charter of the
CARBON SEQUESTRATION LEADERSHIP FORUM



For the Secretariat of Energy
of the United Mexican States

DATE:

Charter of the
CARBON SEQUESTRATION LEADERSHIP FORUM

For the Ministry of Economy, Trade and Industry
of the Government of Japan

DATE:

2001/10/25

Charter of the
CARBON SEQUESTRATION LEADERSHIP FORUM

山田 信

For the Ministry of Foreign Affairs
of the Government of Japan

DATE: June 25, 2003

Charter of the

CARBON SEQUESTRATION LEADERSHIP FORUM

Mario Volpini

For the Ministry of Productive Activities
of the Government of Italy

DATE:

Charter of the

CARBON SEQUESTRATION LEADERSHIP FORUM

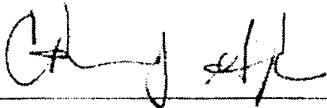
For the Ministry of Power
of the Government of India

Akash

DATE: 25/6/2003

Charter of the

CARBON SEQUESTRATION LEADERSHIP FORUM



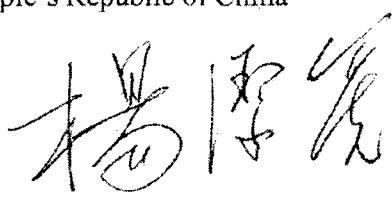
For the Ministry of Mines and Energy
of the Government of Colombia

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Charter of the
CARBON SEQUESTRATION LEADERSHIP FORUM

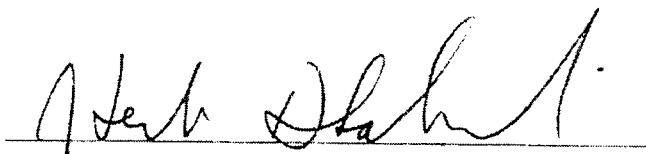
Representative of the Government
of the People's Republic of China

DATE:



2003年6月25日

Charter of the
CARBON SEQUESTRATION LEADERSHIP FORUM



For the Department of Natural
Resources of Canada

DATE:

Charter of the
CARBON SEQUESTRATION LEADERSHIP FORUM

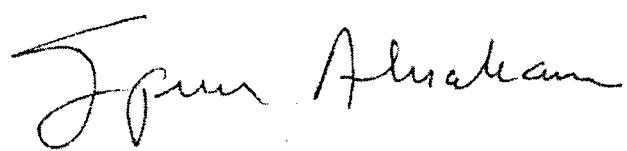


For the Department of Industry, Tourism and Resources
of Australia

DATE:

Charter of the
CARBON SEQUESTRATION LEADERSHIP FORUM

For the Department of Energy
of the United States of America



DATE: