

DOE Offers \$60 Million to Spur Industry Engagement in Global Nuclear Energy Partnership

The U.S. Department of Energy (DOE) Deputy Secretary Clay Sell announced in early May that DOE will provide up to \$60 million, over two years (FY'07-'08), to engage industry experts in the conceptual design of the initial nuclear fuel recycling center and advanced recycling reactor as part of President Bush's Global Nuclear Energy Partnership (GNEP). Studies from this Funding Opportunity Announcement (FOA) will include scope, schedule, and cost information of the proposed facilities and will also identify technological needs that will be used to inform, and effectively and efficiently implement, GNEP's research and development (R&D) activities.

"Nuclear energy is a safe, environmentally sensitive, and affordable way to meet the world's growing need for base-load electricity," Sell said; "By further engaging engineering and design experts in the nuclear industry, we can spur radical development of new nuclear recycling technologies that are more proliferation-resistant and economically attractive."

Sell announced the FOA while addressing the United States Energy Association in Washington, DC on May 9th. The FOA seeks applicants to provide conceptual design studies, technology roadmaps, and business and communications plans essential to GNEP's initial development. In conjunction with the conceptual design studies, the recipients of funding will also develop technology development roadmaps to describe the state of the current technology, perform a technology "gap" analysis, and define the

methods and plans to acquire technology needed to achieve the GNEP goals. The business plans will address how the market may facilitate DOE plans to develop and commercialize the advanced fuel cycle technologies and facilities. The communications plans will address the dissemination of scientific, technical, and practical information relating to nuclear energy and closing the nuclear fuel cycle.

DOE will use the information and recommendations provided by these studies, as well as other information and analyses, to assist in evaluating the development and deployment of proposed activities under GNEP, and to inform a Secretarial decision on the path forward for GNEP.

This FOA is comprised of \$15 million from DOE's FY'07 Spend Plan, and \$45 million from FY'08, subject to appropriation from Congress. Three to six awards are expected to be determined later this year.

GNEP is part of President Bush's Advanced Energy Initiative and seeks to develop worldwide consensus on enabling expanded use of safe, clean, and affordable nuclear energy to meet growing electricity demand. This will use a nuclear fuel cycle that enhances energy security, while promoting non-proliferation.

In a separate event, U.S. Secretary of Energy Samuel W. Bodman announced on May 21st that DOE and senior energy officials from some of the world's leading economies issued a joint statement in support of the Global Nuclear Energy Partnership and nuclear energy cooperation. Chair Ma Kai of the People's Republic of China (National Development and Reform

Commission); Chair Alain Bugat of France (Commissariat à l'Énergie Atomique); Minister Sanae Takaichi of Japan (Minister of State for Okinawa and Northern Territories Affairs, Science and Technology Policy, Innovation, Gender Equality, Social Affairs and Food Safety); Deputy Director Nikolay Spasskiy of the Russian Federation (Federal Atomic Energy Agency); and Bodman participated in the DOE-hosted ministerial meeting. The United Kingdom and the International Atomic Energy Agency also participated as observers to the ministerial.

In addition to providing overviews on each country's national and international nuclear energy policies in relation to GNEP, senior officials are also moving forward on topics considered crucial to GNEP's development. The topics include: infrastructure development needs for countries considering nuclear power; development of advanced fuel cycle and safeguards technology; establishment of reliable fuel services; spent fuel management; and building the partnership and next steps to pursue this major global initiative.

EU Seventh Framework Program Aggressively Pursues International Research Collaboration

In an increasingly interdependent world, all countries face common challenges, like climate change, loss of biodiversity, and desertification. The need for a joint effort, for international cooperation, is therefore evident, according to the European Union (EU). As concerns research, the EU has already demonstrated the benefits of pan-European collabora-

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India Constitutes Council on Climate Change

Prime Minister Manmohan Singh of India has created a high-level advisory group on climate change issues. The Council will coordinate national action plans for assessment, adaptation, and mitigation of climate change. It will advise the government on proactive measures that can be taken by India to deal with the challenge of climate change. It will also facilitate inter-ministerial coordination and guide policy in relevant areas. The Council consists of non-government members and government representatives, including the ministers of External Affairs, Finance, Environment & Forests, Agriculture, Water Resources, and Science & Technology.

tion, not least in the area of environment, and with the Seventh Framework Program (FP7), European research is still more open to third countries.

International cooperation ranges from increased researcher mobility (where European researchers work abroad or vice versa) to large-scale international collaboration efforts like the ITER nuclear fusion project. It is growing in scale, as the benefits of greater collaboration become apparent. Environmental research is a good example of this, since many environmental challenges, like desertification, are replicated across the world, according to the EU. By combining research teams from across the world specialized in desertification, new data and scientific solutions can more easily be found, said the EU.

Environmental research sponsored by the EU already has a good track record in international cooperation. The "Global Change and Ecosystems" program was the thematic program with the most third country research participation in FP6. It allocated more than €37 million, or 4.6% of the total budget to fund third country participants in European research teams. A good example of successful interna-

tional cooperation in the "Global Change and Ecosystems" program is the ALARM project, focused on biodiversity, which now has 200 scientists working in 67 institutions from 35 countries around the world, including 17 non-EU countries.

Lessons have also been learnt from FP6, which are now being applied in FP7. The international cooperation activities need to be better structured, through bilateral or multilateral dialogues, and the coherence will be improved along with higher predictability and visibility, said the EU.

The Seventh Framework Program (FP7) increases the emphasis on international research collaboration, seen as the best way to deal with global challenges like climate change and globalization, as well as helping developing countries to improve their research capabilities. Where FP7 differs from its predecessors is in the mainstreaming of international cooperation. The new Framework Program, besides opening all the research themes and projects to international research, integrates the specific international cooperation actions (SICAs) for collaboration with third countries into thematic programs. In

addition, research capacities are to be strengthened (through better dialogue, for example, or greater sharing of research infrastructure), and international researcher mobility encouraged.

Nikos Christoforides, in charge of International Cooperation in the area of environment at the Research DG, said the response so far has been overwhelming. Indeed FP7 could go, in theory, far beyond the FP6 record as regards allocations to foreign research teams.

Whereas the SICAs were previously specifically part of the International Cooperation program, they have now been mainstreamed and can be found in each research theme of FP7. The SICA funds are therefore tied to the theme, not to the nationality of the research team. For environmental research, €24 million has been allocated in 2007 alone to SICA projects, which are dedicated to third countries' needs and mutual interest. The SICA projects being called for in the first round include the "Integrated resource management in international co-operation partner countries" project and the "Past and future climate change impacts in the Parana-Plata river basin of South America" project.

As FP7 progresses, there will be plenty of other opportunities for third country researchers to get involved in environmental research, as well as European researchers sponsored to work overseas.

As international cooperation increases, the institutional framework for joint research becomes more important. The EU is negotiating research agreements with third country partners like China, India, and the United States. These agreements improve the institutional dialogue. They also allow both sides to open up their research capacities to each other's researchers and to coordinate their research calls. In the case of developed economies (like the United States or Japan), research institutions can participate in an FP7 project but cannot access EU funds.

The recent agreement between the European Commission and the U.S. Environmental Protection Agency (EPA) is of particular interest because it links science and policy more explicitly. The EPA is a powerful regulator in the United States, but it has only a small research capacity. Through the agreement, the EPA is able to upgrade its research capacity, thus providing more scientific bases for its policy decisions. At the same time, it allows for closer transatlantic understanding in policy analysis which in turn may bring better policy convergence in environmental policies, the EU said. □

Materials Update in Finland

Tekes, the Finnish Funding Agency for Technology and Innovation, and the Institute of Industrial Technology Evaluation and Planning (ITEP), the Korean technology financier, are arranging the first partnering event for Finnish and Korean companies on August 30th. The event will provide companies in both countries with an opportunity to find technology partners in company-driven projects. The target sectors of the cooperation between Tekes and ITEP include information and communications technology, materials and nanotechnology, and energy.

Tekes has commissioned Gaia Consulting Oy to carry out a study on the relevant research, administrative, and business actors and their roles in the field of nanosafety in Finland. According to Tekes, the development of nanotechnologies has been rapid; new materials and applications appear at a pace that leaves the knowledge on nanosafety behind. Here, nanosafety refers to the potential health, safety, environmental, and risks related to nanotechnology research, processes, products, applications, and services. The central aims of the study are to map the actors within the nanosafety field, their expertise and international linkages, and the connections of Finnish research to EU level legislation.

Finland and China have signed a strategic cooperation agreement on nanotechnology, signaling the first such European Union (EU) agreement with China. The cooperation was agreed upon in Beijing on January 25th, and followed by an official Chinese delegation visit to Helsinki, during Nanotech Northern Europe 2007 in March, an official China-EU Science and Technology Year (CESTY) event. The members of the official Chinese delegation were impressed by the high quality of nanotechnology research and development in Finland, in particular the strong focus on commercialization and industrialization. The Finland-China cooperation continues actively, with a Finnish delegation next visiting China in the summer.

"Tekes China is active in building platforms for Finnish companies and research community in China; nanotechnology is one of the fields we have worked on recently. We also promote cooperation within the EU framework," said Juho Rissanen who runs the Tekes office in Beijing. Tekes has offices in Beijing and Shanghai. China-EU relations in the area of Science and Technology have been developing rapidly in recent years and the EU 7th Framework Programme Technological Development and Demonstration Activities (2007-2013) and China's 11th Five Year Plan (2006-2010) give these relations new impetus, according to Tekes.