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Investment Opportunities in Afghanistan's Oil and Gas Sectors

Office of Energy and Environmental Industries

Since 2002, the Islamic Republic of Afghanistan has taken gradual steps toward opening its upstream oil and gas sector to foreign investment. The U.S. Department of Commerce; other U.S. agencies, such as the U.S. Trade and Development Agency and U.S. Geological Survey; and World Bank consultants have provided various forms of in-country assistance to the Ministry of Mines and Industry (MMI) and the Afghan Gas Company.

Much of the work during the past three years has been geared toward assessing the extent of the country's oil and natural gas resource base, prioritizing the next steps for development of the oil and gas sector, assisting in the development of sectoral legislation, laying the groundwork for possible U.S.-funded geophysical surveys, assessing the country's oil and gas demand, and helping the MMI prepare for an international oil and gas licensing round. Although progress has been made in many of these areas, hurdles still remain to creating a competitive commercial environment that is conducive to attracting foreign investment.



Afghanistan's simple refining operations use underground retorts. Oil products are sold locally.

The first oil exploration in Afghanistan included geological surveys by U.S. companies in the mid-1920s. It was not until the Soviet era, however, that exploration efforts resulted in the discovery of about 15 oil and gas fields in northern Afghanistan. Beginning in 1968, Afghanistan exported sizable volumes of gas to the Soviet Union through a 100-kilometer pipeline. By the early 1980s, Afghanistan also had developed a domestic gas market, which comprised a gas-fired power plant, a fertilizer plant, and a gas distribu-

tion system near Mazar-i-Sharif. Afghanistan currently needs a variety of upstream and downstream investment. Depletion of reserves at producing gas fields has led to a need for modern reservoir management capabilities, well rehabilitation, infill drilling, and the development of several non-producing gas fields. Increasing gas output is essential to boosting fertilizer production, a key product of the local economy that is critical to reducing expensive imports and ensuring Afghanistan's self-sufficiency. Afghanistan has only one

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Regulatory Reform Set to Move Hazardous Waste Markets

by *Maximo Diaz*

Environmental Technologies

U.S. Environmental Protection Agency

U.S. Department of Commerce Science and Technology Fellow, 2004–2005

The Office of Solid Waste in the U.S. Environmental Protection Agency (EPA) is taking action on deregulatory action on certain rules. Three of its initiatives have the potential to significantly affect domestic solid and hazardous waste markets.

On June 14, 2005, EPA promulgated a rule amending a variety of Resource Conservation and Recovery Act (RCRA) requirements for solid waste testing and monitoring and a testing requirement under Clean Air Act regulations for hazardous waste combustors. These amendments allow industry more flexibility when conducting RCRA-related sampling and analysis. According to EPA, the changes are “to make it easier and more cost effective to comply with RCRA regulations by allowing more flexibility in [testing] method selection and use” (*Federal Register*, 70, no. 113, June 14, 2005).

In the second initiative, EPA plans to modify the definition of solid waste by November 2006 to increase recycling and to conserve resources. The expected changes will make it easier to recycle more than 1 million tons of hazardous waste and to recover metals, solvents, and other usable materials worth nearly \$1 billion. EPA estimates that most of the materials

affected by this proposal are generated by the following industries: inorganic chemicals, plastic materials and resins, pharmaceutical preparations, cyclic crudes and intermediates (specialty chemicals), industrial organic chemicals, secondary smelting of nonferrous metals, plating and polishing, and printed circuit boards. These expected changes represent potential savings of \$178 million a year at more than 1,700 plants nationwide.

Finally, EPA is considering a rule change regarding F019 waste under RCRA that would deregulate sludge generated during the conversion coating of aluminum parts. The rule change would exempt certain categories of sludges from the strict disposal guidelines that would otherwise be required.

“Conversion coating” is a metal finishing process that involves the application of a coating to a base metal to increase protection from corrosion. The sludge generated in this process is usually classified as hazardous waste, therefore making it subject to strict disposal requirements. However, that classification inhibits the broader use of aluminum in industrial processes where it might be beneficial. The automobile manufacturing industry has opposed the existing EPA



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Sixth U.S.-China Oil and Gas Industry Forum

by Sarah Lopp
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Energy Team

The sixth U.S.-China Oil and Gas Industry Forum (OGIF) was held in New Orleans June 27–29, where participants successfully continued the bilateral energy dialogue that was established by the first OGIF in 1998. The U.S. Department of Commerce, the U.S. Department of Energy, and the Chinese National Development and Reform Commission (NDRC) co-sponsored the forum along with the U.S. energy industry.

OGIF is a public-private sector partnership, with U.S. and Chinese representation from industry and government designed to encourage dialogue and address challenges facing U.S. and Chinese energy industries. Historically, OGIF has focused on the exploration and development (that is, the upstream) sector of the oil and gas industry. The United States and China alternate hosting the forum. The fifth OGIF was held in Beijing in April 2004.

This year's event provided U.S. industry with access to key Chinese energy policy-makers from NDRC, Sinochem Corporation, CNOOC, PetroChina, China United Coal Bed Methane Corporation, and Sinopec. Industry representatives felt that, as a result of OGIF, they had a much better understanding of China's views on foreign investment in its oil and gas industry. As a result, U.S. industry's ability to make key trade and investment decisions in China will be enhanced. U.S. Department of Energy Deputy Secretary Clay Sell and U.S. Department of Commerce Acting Deputy Secretary David Sampson delivered welcoming remarks that emphasized the importance of a U.S.-China partnership in the global energy market.

The keynote speech, "China's Energy and Oil and Gas Policy in the New Era," was given by the vice chairman of China's NDRC, Zhang

Guobao. He stressed China's desire to attract foreign investment in its energy sector as well as its need for technology and a skilled workforce.

The agenda covered topics such as technology; market development; health, safety, and environment (HSE); and the government's role in the energy industry and U.S.-China energy cooperation. The following are some of the key points from the forum's sessions:

- For China to develop and market natural gas, it must increase access to pipelines to bring gas to the market and stabilize prices through transparent market mechanisms.
- China needs technology and training to address deepwater challenges related to projecting and generating seismic data, protecting equipment, securing deepwater platforms, and limiting environmental impact.
- China is making energy efficiency and conservation top priorities, particularly in the transportation

ETTAC Meeting Held in Chicago

The Office of Energy and Environmental Industries (OEEI) held a meeting of the Environmental Technologies Trade Advisory Committee (ETTAC) in Chicago, Illinois, on May 20, 2005. The focus of the meeting was an extensive discussion of World Trade Organization approaches to liberalize trade of environmental goods and services. In

addition, ETTAC members received presentations on the Chicago Climate Exchange, the Environmental Law and Policy Center, and the Great Lakes Protection Fund. On May 19, before the ETTAC meeting, OEEI co-hosted a business roundtable discussion to let companies in the Chicago area exchange information on, and experiences in, the international mar-

ket. The next ETTAC meeting is scheduled for September 16, 2005, in Washington, D.C.

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classification on the grounds that it inhibits the production of lighter-weight vehicles.

The F019 hazardous waste listing originally was developed to address the chemical conversion coating of aluminum in which hexavalent chromium and complex cyanides were used instead of zinc. The listing, however, is not appropriate for nonhazardous wastewater treatment sludges generated by some

industrial activities (automobile manufacturing, for example), for which zinc phosphate is used to conversion coat aluminum.

For additional information on regulatory rule changes regarding RCRA solid waste testing and monitoring requirements, contact Kim Kirkland of EPA at (703) 308-8855 or Kirkland.Kim@epa.gov. For more information on regulatory changes to the definition of solid waste, contact David Fagan of EPA

at (703) 308-0603 or Fagan.David@epa.gov. For more on the deregulation of aluminum sludge wastes, contact James Michael of EPA at (703) 308-8610 or Michael.James@epa.gov.

For more information on solid and hazardous waste markets, contact Susan Simon of the Office of Energy and Environmental Industries at (202) 482-0713 or susan.simon@mail.doc.gov.

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sector.

- Four risks of investing in large energy projects in China include the changing regulatory environment, lack of engineering talent in the workforce, intellectual property protection, and subcontractor or vendor equipment failures.
- The Chinese government has opened up its oil and gas market to foreign investors and has developed storage, transportation, and marketing systems, like the West-East pipeline.

Contacts and information exchanges at OGIF will ultimately help foster trade and investment in energy-related goods and services, encourage exploration and production, and improve dialogue between energy-producing and consuming countries.

The seventh U.S.-China Oil and

Gas Industry Forum is expected to be held in China during 2006.

If you would like more information about OGIF, contact Sarah Borwick Lopp at (202) 482-3851 or via e-mail at sarah.lope@mail.doc.gov



Chinese Market for Cleaner Production Technologies Detailed in New Report

The Office of Energy and Environmental Industries recently released a report, *Cleaner Production: Export Opportunities in China*. The report highlights opportunities and risks for U.S. exporters of environmental technologies as a result of the Chinese government's efforts to fund research and development for cleaner production methods and equipment. The report is available in the "Market Research" section of the Environmental Industries Web site at www.environment.ita.doc.gov.



Only two deep-drilling rigs exist in Afghanistan. This one needs spare parts and fluids to be usable again.

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producing oil field, although several others lay fallow. Output is less than 500 barrels per day and is used locally. The country's oil production potential and demand, though, could support construction of a topping plant with a capacity of up to 10,000 barrels per day.

In the longer term, Afghanistan's potential as an exploration frontier may be the biggest draw for foreign investors. Gas resources found in the similar geology of southeastern Turkmenistan are about 20 times the volume of gas found to date in Afghanistan. With the Soviet-era pipeline to Turkmenistan intact, a

method is readily available for exporting gas and generating revenues to fund additional upstream work. The expansion of the country's gas-fired power generation capacity—needed especially in Kabul—also could provide a way to monetize gas resources.

For information on general investment issues and specific business opportunities, contact the U.S. Department of Commerce's Afghanistan Investment and Reconstruction Task Force at (202) 482-1812, or e-mail questions to AfghanInfo@ita.doc.gov. For more information on Afghanistan's energy sector, contact Paul Hueper at (202) 482-8153 or e-mail him at Paul.Hueper@mail.doc.gov.

U.S.-China JCCT Work Plan Approved

In early July, the Office of Energy and Environmental Industries (OEEI) and China's State Environmental Protection Administration (SEPA) finalized a comprehensive agreement to advance commercial interaction in environmental technologies between the two countries. The work plan for the Environment Subgroup of the U.S.-China Joint Commission on Commerce and Trade (JCCT) features 24 capacity-building, business development, and information-sharing activities. The plan is designed to strengthen U.S.-China cooperative environmental relations, to enhance

the understanding of both countries' environmental issues and programs, and to promote the commercial interests of U.S. environmental companies. U.S. Department of Commerce Deputy Assistant Secretary for Manufacturing Joseph Bogosian and SEPA Deputy Director General Tang signed the work plan agreement. The Environment Subgroup promotes trade to China in this critical sector; implements initiatives for the World Summit on Sustainable Development and the President's National Energy Policy; and advances U.S. leadership in water resources management, clean

industrial production, and climate change control. For more information on U.S.-China JCCT activities, contact Susan Simon of OEEI at (202) 482-0713 or susan.simon@mail.doc.gov.

Overview of U.S. Environmental Export Data

by Marc A. Lemmond
Office of Energy and Environmental Industries
Environmental Industries Team

U.S. exports of environmental technologies products were approximately \$29.7 billion in 2004. That figure represents an increase of approximately 14 percent over such exports in 2003. Export levels are highest for goods in the instrumentation and analysis and water and wastewater equipment subsectors.

In 2004, U.S. exports in instrumentation and analysis reached approximately \$14 billion; water and wastewater equipment exports totaled approximately \$10 billion (see Table 1).

U.S. renewable energy equipment exports grew by 32 percent from

2003 to 2004, faster than exports in any other environmental technology subsector. Water and wastewater equipment exports grew by approximately 15 percent in that same period.

Table 1. U.S. Environmental and Technologies Sector Exports, 2002–2004

(selected subsectors, Harmonized Tariff Schedule items, millions of U. S. dollars)

Subsector	2002	2003	2004	2003–2004 Growth (percent)
Renewable energy	758.3	789.1	1,043.0	32.1
Water and wastewater	7,577.0	8,644.0	9,940.0	15.0
Instrumentation and analysis	12,184.1	12,506.2	14,191.5	13.5
Air pollution control	2,890.0	3,069.0	3,334.4	8.7
Solid or hazardous waste	397.7	402.0	430.7	7.1

Source: U. S. International Trade Commission. Figures have been rounded.

Geographically, U.S. exports of environmental technologies went mostly to our North American trading partners, Canada and Mexico (see Table 2). Japan and Germany are also strong export markets for manufacturers of U.S. environmental technologies. Although these markets have been relatively constant, a new entrant to the top five export markets for U.S. environmental technologies illustrates the dramatic growth of one developing country market—China.

In 2004, U.S. exporters sold approximately \$1.7 billion in environmental equipment to China, representing an increase of 47 percent over 2003. The rate of growth is even more dramatic when the period from 2002 to 2004 is considered: over that two-year period U.S. environmental technology exports to China grew by about 125 percent. That rate means that China has moved ahead of the United Kingdom and South Korea to become the fifth largest market for U.S. exports of environmental

technologies products. This rapid rate of growth reflects China's booming economy, the compliance work it has been doing in conjunction with becoming a member of the World Trade Organization (WTO) in 2001, and similar work China is doing to prepare for the August 2008 Olympic games in Beijing.

Table 2. U.S. Environmental Technologies Export Markets, 2002–2004

(2004 rank order, domestic exports, FAS value, millions of U.S. dollars)

Rank	Country	2002	2003	2004	2002-2004 Growth (percent)
1	Canada	5,469.3	6,006.0	6,269.9	15
2	Mexico	3,596.2	3,871.2	4,213.1	17
3	Japan	1,827.1	1,960.2	2,252.0	23
4	Germany	1,258.2	1,427.8	1,740.0	38
5	China	754.3	1,151.9	1,694.1	125

FAS = free alongside ship

Source: U.S. International Trade Commission. Figures have been rounded.

UPCOMING EVENTS

Envirotec China

July 13–16, 2005
Shanghai, China
Contact: Susan Simon
Tel: (202) 482-0713
E-mail: susan.simon@mail.doc.gov
Web site:
www.psc2005.com/watertech_envirotech.htm

Afriwater 2005

August 10–12, 2005
Gauteng, South Africa
Contact: Jacky Mokgawa,
Exhibitions for Africa
Tel: +27-11-886-3734
E-mail: jackym@exhibitafrica.co.za
Web site: www.afriwater.co.za

Water Asia 2005

September 13–15, 2005
New Delhi, India
Contact: Marc Lemmond
Tel: (202) 482-3889
E-mail: marc.lemmond@mail.doc.gov
Web site: www.waterasia2005.com

Environmental Technologies Trade Advisory Committee (ETTAC) Meeting

September 16, 2005
Washington, D.C.
Contact: Joseph Ayoub
Tel: (202) 482-0313
E-mail: joseph.ayoub@mail.doc.gov
Web site:
www.environment.ita.doc.gov

Aquatech Asia 2005

October 6–8 2005
Bangkok, Thailand
Contact: Marc Lemmond
Tel: (202) 482-3889
E-mail: marc.lemmond@mail.doc.gov
Web site: <http://show-info.nl/aquatechasia2005/e>

Enviro-Pro Mexico

October 12–14, 2005
Mexico City, Mexico
Contact: Ellen Bohon
Tel: (202) 482-0359
E-mail: ellen.bohon@mail.doc.gov
Web site:
<http://ejkrause.com/enviropro/>

WEFTEC 2005

October 29–November 2, 2005
Washington, D.C.
Contact: Ellen Bohon
Tel: (202) 482-0359
E-mail: ellen.bohon@mail.doc.gov
Web site: www.wef.org

2005 Clean Coal and Power Conference

November 21–22, 2005
Washington, D.C.
Contact: Aaron Brickman
Tel: (202) 482-1889
E-mail: aaron.brickman@mail.doc.gov
Web site:
<http://fossil.energy.gov/news/events/cleancoal/index.html>

Business Development Mission to Central America

October 16–22, 2005
Guatemala, Honduras, El Salvador
Contact: Ellen Bohon
Tel: (202) 482-0359
E-mail: ellen.bohon@mail.doc.gov
Web site:
<http://www.buyusa.gov/centralamerica/en/caftamissionhome.html>

International Programs Highlight of AWWA Conference

The Office of Energy and Environmental Industries (OEEI) hosted an extensive international program for U.S. companies at the annual conference and exhibition of the American Water Works Association (AWWA) in San Francisco this past June 11–15. Activities included a technical seminar called “Business Opportunities in China’s Water Market” and a training event for the domestic and overseas commercial specialists in the environmental sector. Support for delegations of foreign buyers from 17 countries was provided by the Department of Commerce’s International Buyer Program, to help facilitate more than 150 business meetings between buyers and U.S. exhibitors. OEEI will host a similar international program in 2006 at AWWA’s conference in San Antonio, Texas. That program will include a session focusing on Opportunities in Latin American Water Markets. For information on the 2006 conference, visit AWWA’s Web site at www.awwa.org/ace06.