



## PROMOTING TECHNOLOGY IN THE OIL AND GAS SECTOR

The U.S. Trade and Development Agency (USTDA) is aggressively pursuing energy projects that help meet important overseas development objectives and represent significant investment and export potential for U.S. firms. Since the agency's creation in 1981, USTDA has provided nearly \$130 million in support of oil and gas exploration, refining and petrochemicals, and pipeline and storage projects, with U.S. exports valued at over \$4.7 billion.

USTDA advances economic development and U.S. commercial interests in developing and middle-income countries. USTDA's strategic use of foreign assistance funds to support sound investment policy and decision-making in host countries creates an enabling environment for trade, investment and sustainable economic development. In carrying out its mission, USTDA gives emphasis to economic sectors that may benefit from U.S. exports.

Recent USTDA activities in the oil and gas sector include:

### East Asia

U.S. – China Gas Training – USTDA approved \$450,000 to support a public-private initiative to enhance cooperation in the development of China's natural gas sector. The training covers topics in gas sector technology, regulation, and markets/finance/pricing including production, transport, import, distribution and consumption of natural gas. The initiative also showcases U.S. equipment vendors and service providers in the gas industry. The U.S. Energy Association was selected to organize the training.

### Europe and Eurasia

Azerbaijan Gas Transit – USTDA provided \$88,746 to fund training on international norms in gas transit agreements for Government of Azerbaijan officials. In addition to the training, the funds will be used to review potential gas transit projects for additional USTDA funding. Appropriate Energy Management, Inc. is coordinating the training.

Turkmenistan Oil and Gas Training – USTDA is providing \$785,445 to fund training for officials from the Turkmenistan State Agency for the Management and Use of Hydrocarbon Resources on oil and gas regulation and production sharing agreements. The training will provide the officials with the tools they need to properly regulate the licensing of offshore hydrocarbon resources. Koeppen, Elliott, & Associates, Ltd. of Washington, DC, is coordinating the training.

Turkey Underground Natural Gas Storage Project – USTDA is providing \$562,761 to Calik Enerji, a private Turkish firm, to partially fund a feasibility study on an underground natural gas storage facility in southern Turkey. Universal Enco, Inc. is performing the study.

Ukraine Coal Bed Methane (CBM) – USTDA is providing \$586,214 to the Donetsk Regional Government Administration in Ukraine to partially fund a study on the development of natural gas from CBM in the Donetsk region of Ukraine to reduce the country's dependence on foreign energy, and enable Ukraine to redirect savings to investment in other areas of the economy. Advanced Resources International, Inc. of Arlington, VA, is performing the study.

Regional Trans-Caspian Oil and Gas Pipelines – USTDA is providing \$1.7 million to the State Oil Company of the Republic of Azerbaijan (SOCAR) to fund a feasibility study on the construction of oil and gas pipelines across the Caspian Sea from Kazakhstan to Azerbaijan. SOCAR will competitively select a U.S. company to perform the study.

### Latin America and the Caribbean

Brazil Natural Gas Regulatory Policies - A USTDA-sponsored orientation visit in November 2007 introduced Brazilian regulators from ANP to the U.S. regulatory framework governing liquefied natural gas (LNG), natural gas storage, and oil and gas pipeline operational security. Strengthening the regulatory framework aims to foster continued innovation, increase technology transfer, encourage the entrance of new market players, and benefit consumers in terms of affordability, quality, and safety.

Colombia Pipeline Safety and Security – This \$500,000 feasibility study for Ecopetrol S.A. will focus on improving the safety, security, and integrity of Colombia's hydrocarbon pipeline system. The project will reduce losses and environmental hazards related to the transport of petroleum and petroleum products.

Colombia Barrancabermeja Refinery Modernization – A \$600,000 grant to Ecopetrol S.A. is helping to develop a master plan to modernize Colombia's largest oil refinery. The project will allow Ecopetrol S.A. to meet Colombia's forecasted demand for petroleum products.

Guatemala Energy Security and Natural Resources Geographical Information System (GIS) – This \$454,440 technical assistance grant to Guatemala's Ministry of Energy and Mines (MEM) will develop a national GIS for the energy and mining sectors to enhance the regulatory capacity of MEM and improve the investment environment for hydrocarbon and mineral resource development.

Peru Geochemical Database and Petroleum Systems – This \$561,800 technical assistance grant is supporting the development of an integrated geochemical database and the definition of petroleum systems in Peru's hydrocarbon-bearing sedimentary basins. PERUPETRO S.A., the Peruvian government agency responsible for the promotion of private investment in the hydrocarbons sector, will utilize the

technical assistance to set the stage for new exploration and investment opportunities.

### **Middle East and North Africa**

Algeria Oil Spill Response and Port Security - This USTDA-sponsored orientation visit familiarized Algerian officials with U.S. policy and practices in the area of oil spill response and port security. The delegation was also exposed to U.S. technology, including state-of-the-art containment and cleanup equipment and gamma-ray scanners and transportation security technology for port applications. Delegates met U.S. suppliers, national associations, and federal agencies such as Environmental Protection Agency, Department of Homeland Security and the U.S. Coast Guard.

Iraqi Oil Training - USTDA is funding a \$2.5 million multifaceted training program for the Iraqi Ministry of Oil on management, technical/engineering, and human resources development. The training responds to specific needs identified by the Ministry of Oil, and will provide critical knowledge transfer and establish long-term relationships between the U.S. and Iraqi oil and gas industry public and private sector representatives.

### **South and Southeast Asia**

East Timor Petroleum Sector Directorate - USTDA provided a \$462,825 technical assistance grant to the Government of East Timor to assist in the establishment of a directorate responsible for fiscal and regulatory control of the petroleum sector. Gaffney Cline and Associates of Houston, TX, provided the technical assistance.

India Oil and Gas Refinery Modernization - USTDA funded a successful mission for representatives from India's major oil refineries to visit the United States in early 2007. The visit familiarized participants with U.S. expertise and equipment in downstream oil and gas manufacturing as they prepared to undertake a number of refinery modernization projects.

Thailand LNG Receiving Terminal - USTDA provided \$667,000 to analyze a proposed LNG Receiving Terminal for PTT Public Company Limited. The study helped to determine the terminal's most appropriate location, the technology, and the required level of investment for the project. PACE Global Energy Services, LLC conducted the study.

India Sohagpur CBM - A USTDA grant to Reliance Industries Limited (RIL), a private Indian company, in the amount of \$506,000 is partially funding assistance on the development of the Sohagpur CBM project, the first commercial CBM project in India. The grant is assisting RIL in assessing the market and gas infrastructure requirements for the commercial development of particular concession blocks. Preliminary investments of some \$50 million in the project have produced some \$20 million in U.S. exports.

Sri Lanka Oil and Gas Regulations - USTDA is providing a \$474,000 grant to assist the Ministry of Petroleum and

Petroleum Resources Development in developing regulations for the country's nascent oil and gas industry. The grant will help Sri Lanka transition from a consumer-driven to a production-oriented oil and gas regulatory structure, based on the Sri Lankan government's plans to open up promising offshore oil and gas blocks for exploration and development. The USTDA-funded assistance will also help to establish the organizational structure of the regulatory authority.

Vietnam Blocks B and 52 Gas Pipeline Project - USTDA approved a \$591,000 grant to PetroVietnam (PVN) to investigate the financial, technical and environmental options for developing a gas pipeline from the Gulf of Thailand to Vietnam's Mekong Delta region. This work directly supported Chevron's efforts to establish a joint venture with PVN and other private sector partners on pipeline construction. USTDA's involvement helped address important project risk elements, provided formal structure to a complicated public-private partnership, and allowed for a neutral, third party to conduct the investment analysis. Fluor Transworld Services, Inc. was selected to conduct the study.

### **Sub-Saharan Africa**

Botswana CBM - USTDA provided \$525,000 to the Botswana Development Corporation to partially fund a study on the capture and processing of CBM from coalfields in eastern Botswana to meet growing domestic and regional demand for a low-cost, clean, and efficient fuel for power plants and industrial processes. Advanced Resources International, Inc. conducted the USTDA-funded study.

Nigeria Liquefied Petroleum Gas (LPG) Sector Policy and Regulatory Framework - A \$562,000 grant to the Office of the Presidential Advisor in Petroleum and Energy Matters is funding technical assistance in the restructuring of the LPG sector in Nigeria. If priced, regulated, and distributed appropriately, it is believed that LPG will become a dominant household fuel source in Nigeria. Nexant, Inc was competitively selected to provide the assistance.

Rwanda-Burundi Pipeline Capacity Market Analysis Phase I - USTDA approved \$150,603 to fund a study on the Rwanda-Burundi Pipeline. The study seeks to establish the feasibility of extending an oil pipeline from Kampala, Uganda to Bujumbura, Burundi. The first phase will focus on a market analysis of oil products in the two countries. It will also include an assessment of the required size of the pipeline extension. Science Applications International Corporation was selected to provide this assistance.

South Africa Transnet New Multi Products Pipeline - The South African transportation conglomerate Transnet is developing an 800 km multi-product refined fuels pipeline that will take fuel from Durban to Gauteng (the major industrial region between Johannesburg and Tshwane). A USTDA-sponsored orientation visit in June 2006 introduced officials from Transnet, the Department of Public Enterprises, the Department of Minerals and Energy, and the National Energy Regulator to U.S. operational models and the U.S. regulatory framework for refined fuels pipelines.