



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.

In carrying out its mission, USTDA advances economic development and U.S. commercial interests in developing and middle-income countries. The agency funds various forms of technical assistance, early investment analysis, training, orientation visits and business workshops that support the development of a modern infrastructure and a fair and open trading environment.

Recent USTDA activities in the oil and gas sector include:

East Asia

U.S. – China Gas Training – USTDA provided \$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, markets/finance/pricing, and regulation. 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 - Updated

Georgia Coal Bed Methane / Coal Mine Methane – USTDA is providing \$540,000 to the Georgian International Energy Corporation to examine the possibility of recovering methane from coal seams, active coal mines, and abandoned coal mines in the Tkibuli-Shaori Coal Basin. Advanced Resources International of Fairfax, VA, is conducting the study.

Azerbaijan Trans-Caspian Oil and Gas Pipelines – USTDA is providing \$1.7 million to the State Oil Company of the Republic of Azerbaijan (SOCAR) to determine the feasibility of constructing oil and gas pipelines across the Caspian Sea from Kazakhstan to Azerbaijan. KBR, Inc. of Houston, TX, is conducting the study.

Turkey Underground Natural Gas Storage – USTDA is providing \$562,761 to Calik Enerji, a private Turkish firm, to partially fund a study on an underground natural gas storage facility. Universal Ensco of Houston, TX, is performing the study.

Turkmenistan Oil and Gas – USTDA provided \$785,445 to train 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 gave the officials the tools needed to properly regulate the licensing of offshore hydrocarbon resources. Koeppen, Elliott & Associates, Ltd. of Washington, DC, coordinated the training.

Latin America and the Caribbean

Brazil Marginal Oil Fields – USTDA sponsored an orientation visit to the United States for Brazilian officials to evaluate the U.S. regulatory framework governing marginal oil fields and to become familiar with U.S. companies active in this industry.

Colombia Pipeline Safety and Security – USTDA provided \$500,000 to fund a study for Ecopetrol S.A. 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 – A \$600,000 grant to Ecopetrol S.A. is helping to develop a master plan to modernize Colombia's largest oil refinery to meet forecasted demand for petroleum products.

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

Peru Geochemical Database and Petroleum Systems – A \$561,800 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. will utilize the assistance to set the stage for new exploration and investment opportunities.

Middle East and North Africa

Algeria Oil Spill Response and Port Security – USTDA sponsored an orientation visit to the United States to 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.

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

Morocco Upstream Petroleum and Mineral Development - USTDA provided \$331,581 to the Office National des Hydrocarbures et des Mines (ONHYM) to increase investment in Morocco's hydrocarbon and mineral resources through the preparation of data packages for potential exploration partners and investors, and in arranging promotional industry road shows and meetings in the United States. The assistance builds on two previously funded USTDA activities with ONHYM.

South and Southeast Asia

Cambodia Oil and Gas Resource Management - USTDA is funding a \$361,000 training program and orientation visit to the United States to strengthen the capacity of the Cambodian National Petroleum Authority to work with the private sector in exploring and developing natural resources.

India Oil and Gas Refinery Modernization - USTDA funded a visit to the United States for representatives from India's major oil refineries to visit the United States. 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. The project is currently under construction.

India HPCL Refinery Bottoms Upgradation – USTDA provided \$597,892 to Hindustan Petroleum Corporation Limited (HPCL) for an evaluation of a particular technology that will convert low value residual oil products (refinery bottoms) to higher value products for the Indian market. HPCL selected Kellogg, Brown & Root to perform the study.

Sri Lanka Oil and Gas Regulations – USTDA provided \$474,000 to assist the Ministry of Petroleum and Petroleum Resources Development in developing regulations for Sri Lanka's nascent oil and gas industry. The grant is supporting the government's plans to open up promising offshore oil and gas blocks for exploration and development.

Vietnam Blocks B and 52 Gas Pipeline Project – A \$591,000 grant to PetroVietnam helped to investigate options for developing a gas pipeline from the Gulf of Thailand to Vietnam's Mekong Delta region. USTDA's involvement addressed important project risk elements, provided formal structure to a complex 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 Coal Bed Methane (CBM) - USTDA provided \$525,000 to the Botswana Development Corporation for a study on the capture and processing of CBM in eastern Botswana to meet growing demand for a low-cost, clean, and efficient fuel for power plants and industrial processes. Advanced Resources International, Inc. is conducting the study.

Nigeria Shiroro/Egbin Power Plants - A \$467,300 grant is funding technical assistance in privatizing Nigeria's two largest power plants. The assistance includes hands-on training in developing a computer model for discounted cash flow analyses, internal rate of return calculations, revenue requirements, and tariff calculations. Delphos International was competitively selected to perform this assistance.

Rwanda-Burundi Pipeline Capacity Market Analysis Phase I - USTDA approved \$150,603 to fund a study on extending an oil pipeline from Kampala, Uganda to Bujumbura, Burundi. The first phase focused on a market analysis of oil products in the two countries and included the required size of the pipeline extension. Science Applications International Corporation completed the study in 2007.