

Oil and Gas Equipment Industry Assessment 2007

Background

This U.S. oil and gas field machinery industry is comprised of companies primarily engaged in:

- Manufacturing oil and gas field machinery and equipment (such as oil and gas field drilling machinery and equipment, oil and gas field production machinery and equipment, and oil and gas field derricks)
- Manufacturing water well drilling machinery.

The following products are classified as oil and gas field machinery:

- Derricks for oil and gas fields;
- Drilling equipment for oil and gas fields;
- Christmas tree assemblies for oil and gas fields;
- Drilling rigs;
- Gas well machinery and equipment;
- Oil and gas field drilling machinery and equipment;
- Rock drill bits;
- Water well drilling machinery;
- Well logging equipment.

The major NAIC code for this sector, and the code this report focuses on, is:
333132: Oil and Gas Field Machinery Equipment Manufacturing

Other relevant NAIC codes are:

333131: Mining Machinery and Equipment Manufacturing

333911: Pump and Pumping Equipment

336611: Ship Building and Repairing- offshore drilling platforms

There are over 60 HS codes that can be included in NAIC 333132, and each HS code represents a very specific type of equipment used for oil and gas exploration and production.

Industry Overview and Global Competitiveness

The U.S. oil and gas equipment industry is very strong both domestically and internationally, particularly in areas involving advanced technology. The domestic industry is so competitive in the U.S. market that imports make up only a very small portion of the U.S. market – only \$841 million of an almost \$10 billion market in 2005. In addition, a very large portion of the oil and gas equipment manufactured in the U.S. is exported. Exports had reached \$6.9 billion in 2005.¹

High oil prices in recent years have buoyed the already strong industry, and equipment production continues to increase.

U.S. Production of Mining and Oil and Gas Field Machinery (NAIC 33313)

Year	Total value of shipments	Employees
2004	\$8.68 billion	37,755
2003	\$7.73 billion	38,412
2002	\$7.48 billion	37,688

Source: Census, Annual Survey of Manufactures (ASM) 2004.²

The U.S. industry consists of large, medium, and small firms. Industry leaders Halliburton and Schlumberger, each with more than 80,000 employees around the world, and the other largest companies such as Baker Hughes, offer services such as construction and engineering for oil and gas companies as well as manufacturing equipment.

Mid-sized producers focus on equipment for two or three systems, such as pressure control equipment or separators. Some belong to larger firms with operations unrelated to energy. Small producers offer limited selections of specialized components, primarily tubing, valves, pressure and flow control equipment, and rig parts. Many also provide reconditioning and rental services.

Major competitors

Although U.S. oil and gas equipment manufacturers are strong in every market around the world, they have extensive competition from manufacturers in Western Europe, Canada, Japan, Korea, Russia, China, Brazil, Argentina, and Australia. European oil and gas field machinery manufacturers are considered superior in platforms, hydraulics, moorings, and subsea components (flexible pipes, flowlines, and control systems). These producers tend to have favorable market shares in their regions: European manufacturers have an advantage in the North Sea region, while the U.S. leads in the Western Hemisphere.

¹ Source: U.S. International Trade Commission.

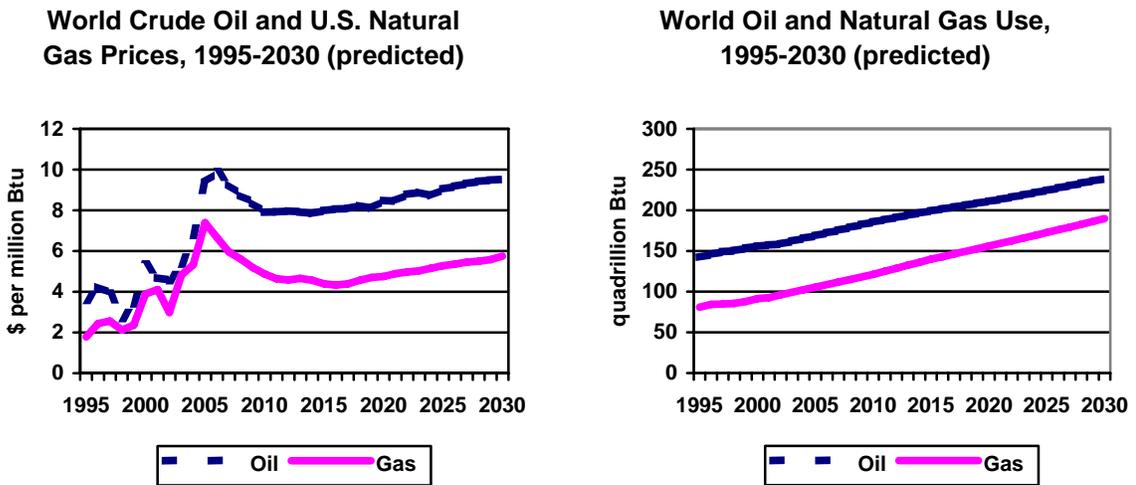
² Note: In the ASM, data is only available up to the 5-digit NAICS code, 33313, which includes both 333131 (mining equipment) and 333132 (oil and gas equipment). However, in 2002, the last year that shipment data for each separate sector was available, shipments for 333132 (oil and gas equipment) made up about 75 percent of the total, or \$5.8 billion.

A number of small producers exist in Europe, Canada, Russia, Asia, and Australia, with a focus on valves, tubing, rods, drills, bits, and specialized electronics. The U.K. hosts the largest number of these firms, which are concentrated in Scotland.

Industry Outlook

The world market for upstream oil and gas equipment rises and falls with the price of oil, as oil and gas companies increase and decrease their exploration and production activities accordingly. When the price of oil falls drastically, as it did in 1986 and 1998, the equipment market declines and the oil and gas equipment industry experiences bankruptcies and layoffs.

The U.S. Energy Information Administration (EIA) is predicting that oil and natural gas prices, already at near-record levels, will remain high for the foreseeable future. Crude oil prices averaged \$56/barrel in 2005, up from \$41 in 2004, and during 2006 the price has averaged \$70/barrel. Natural gas in the U.S. cost \$8.86 per million cubic feet (Henry Hub) in 2005, although this year the average has been \$7.69. EIA predicts that oil and gas prices will decline slightly over the next few years, but oil prices will remain in the \$50/barrel range, and natural gas prices will also remain above historical levels.³

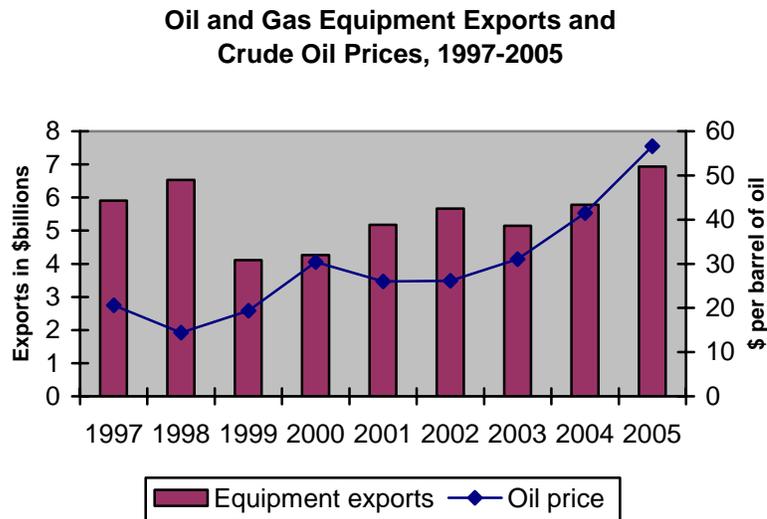


Source: EIA International Energy Outlook 2006.

High oil prices have already spurred increased oil and gas production activity. The worldwide “rig count,” or the number of active drilling and workover rigs for oil and gas production, reached 3155 in July, which is the highest number since 1985. The rig count is a leading indicator for the oil and gas equipment industry, as it determines demand for their products.

³ Energy Information Administration, International Energy Outlook 2006, Annual Energy Outlook 2006, and Short-Term Energy Outlook.

Oil and gas equipment exports have been rising steadily since oil prices began to climb in 2000, rebounding from a dip in 1999 in response to the oil market crash in 1998.



Source: EIA and ITC. Oil prices are yearly averages for WTI.

Rising oil prices also mean that more producers will try to rehabilitate old fields to extract as much oil as they can, and to extract oil from unconventional sources such as the oil sands in Canada or deeper water offshore. These activities all require advanced technology, which is where the U.S. industry excels.

Domestic environment

Oil and gas equipment manufacturers exist in the same regulatory environment that other manufacturers do, and must comply with numerous regulations governed by many laws such as:

- Clean Air Act
- Clean Water Act
- Other environmental regulations enforced by EPA and state agencies
- Family and Medical Leave Act
- Sarbanes-Oxley Act
- Workplace safety regulations enforced by OSHA and state agencies

There are many laws and regulations, however, that do not specifically govern the equipment manufacturing industry, but have a strong effect on the demand for oil and gas equipment within the U.S. These laws and regulations restrict the locations where oil and gas producers may explore for and develop oil and gas resources. In fact, one of the reasons that such a high proportion of oil and gas equipment produced in the U.S. is exported is that U.S. oil production has been relatively flat for many years, partly due to resource depletion, and partly due to restrictions on development in parts of Alaska, the Outer Continental Shelf (OCS) on the east and west coasts, and some federal lands in the

Rocky Mountain region. Development of parts of the OCS is restricted by a federal moratorium, and the areas covered by the moratorium are estimated to hold about 19 billion barrels of oil and 86 trillion cubic feet of gas.⁴ For comparative purposes, the parts of the U.S. that are available for development are estimated to contain 29 billion barrels of oil and 192.5 trillion cubic feet of gas.⁵

Non-regulatory issues affect oil and gas equipment manufacturers as well. The three top issues are:

- Recent high prices for steel and other metals, which are primary inputs. Some manufacturers have even reported being unable to purchase the metals that they need at any price.
- Transportation problems, some of which are caused by high energy prices, and some of which are caused by inadequate infrastructure. Transportation problems affect the ability of manufacturers to obtain supplies and to ship products.
- Tight labor pool. Many oil and gas equipment manufacturers report difficulties finding enough qualified staff to perform high-tech jobs that require advanced skills.

Trading environment

Leading markets for U.S. exports of oil and gas equipment, 2005 (NAIC 333132)

Country	2005 Exports (\$ thousands)	2005 Oil Production (thousand bpd)	2005 Oil Production Rank
Angola	584,283	1242	17
Singapore	439,489	*	*
Venezuela	411,222	3007	7
UAE	384,117	2751	9
UK	381,484	1808	14
Brazil	349,578	1718	15
Saudi Arabia	337,246	11035	1
Russia	298,093	9551	2
China	211,121	3627	5
Egypt	175,695	696	24
All others	3,358,009		
Total	6,930,336		

**Singapore has little oil production of its own, but it is where many companies that produce oil in Southeast Asia are headquartered. Source: U.S. International Trade Commission and BP.*

U.S. oil and gas equipment has a strong market position in every oil and gas-producing country in the world where U.S. companies are allowed to operate. In most of these

⁴ Source: Minerals Management Service. It should be noted that these are “undiscovered technically available resources,” not proven reserves.

⁵ Source: BP. These numbers are proven reserves.

countries, U.S. equipment is at least a third of the market, and sometimes over 50 percent. The only major oil-producing country where the U.S. does not have a significant market share of the oil and gas equipment industry is Iran, which is the fourth largest oil producer.

Key Opportunities

The most promising regions for U.S. oil and gas equipment producers are in countries where oil production is expected to take off in the short to medium term. They include countries and regions such as:

- West Africa, where there are deepwater opportunities in Nigeria, Angola, Equatorial Guinea, and elsewhere that require advanced technology;
- Russia, which will only be able to continue to increase its oil production by deploying massive new investments in the most advanced technology to develop technically difficult fields offshore and in remote regions;
- Kazakhstan, where the government aims to double Kazakhstan's oil production to over 150 million barrels per day by 2020;
- Libya, a country of intense interest to oil companies now that sanctions have been lifted and the government hopes to attract \$30 billion in investment to its oil sector;
- Iraq, which needs to rebuild its oil industry to resume its pre-war oil production.

Obstacles to Trade

Although U.S. oil and gas equipment is in wide demand and competitive in every market, there are still a number of non-tariff barriers that exporting companies must contend with. These include:

- Domestic content requirements. Some countries, such as large oil producers Russia and Kazakhstan, have laws requiring that oil and gas producers purchase a certain percentage of their equipment and services from domestic suppliers. Some U.S. equipment companies are able to count themselves as domestic suppliers by partnering with local companies and/or establishing manufacturing facilities in the host country. These requirements can be a real problem, however, when the host country's rules are vague about who qualifies as a domestic supplier.
- Standards and certification. Some countries (again, Russia and Kazakhstan in particular) require that imported oil and gas equipment be certified as acceptable by government bodies or by certain government-sanctioned labs or testing facilities. This can be costly and time-consuming for equipment manufacturers.
- Non-transparent procurement practices. U.S. equipment manufacturers, bound by rules prohibiting bribery and other unethical conduct, are sometimes at a disadvantage when it comes to getting supply contracts in many countries. In addition, over the past few years, a number of oil producing countries (such as Venezuela, Bolivia, and Russia, among others) have reacted to rising oil prices by

demanding a larger “piece of the pie” from their oil and gas producers- and have even forced companies to renegotiate contracts, take state companies as partners, or even give up their licenses to the government. Unfortunately, in many countries, the more state involvement there is in the energy sector, the less transparent their procurement practices become.

- Sanctions. The world’s fourth-largest oil producer, Iran, is off-limits to U.S. oil and gas equipment suppliers due to U.S. government sanctions.

Perspectives and Strategic Planning

Although the U.S. oil and gas equipment industry is the strongest in the world, the U.S. government must continue its efforts to improve the conditions that it operates in at home, and help expand its opportunities abroad. ITA’s Manufacturing and Services unit should:

- Participate actively in bilateral and multilateral fora aimed at opening other countries’ energy sectors to U.S. trade and investment, increasing transparency, and removing non-tariff barriers, such as the U.S.-China Oil and Gas Industry Forum, the Asia-Pacific Partnership for Clean Development and Climate, the U.S.-Russia Energy Dialogue, and more.
- Continue existing and develop new partnerships with companies, trade associations, and government agencies to better understand the nature of the difficulties industry faces domestically and internationally and how to tailor programs to best address them.
- Provide information on trade opportunities in key prospective countries and regions.