

# Industry Insight: Energy, Oil and Gas

## In a Nutshell

An engineering career in energy generally requires graduates to be willing to travel and maybe even to live abroad.

The main objective of the oil and gas sector is to deliver sources of energy. Activities divide into two areas: exploration and production, and refining and marketing. Exploration and production includes searching for new oil or gas fields, assessing whether they are viable for development (the 'project stage') and extracting from them (the 'production phase'). Refining and marketing focuses on processing the raw product into a saleable form.

Typical employers in exploration and production include operators (who run projects from start to finish); contractors (who provide specific services to operators, eg installing equipment); suppliers (who provide equipment and individual components); and engineering companies (who specialise in particular areas, eg flow assurance calculations). Employers in refining and marketing include refineries, contractors, suppliers and engineering companies (who provide extra expertise on refinery work).

Key operators include BP, ExxonMobil, Shell and Total; JP Kenny is a major contractor.

**Top 10 oil companies in the world:** <http://www.energydigital.com/top10/2734/Top-10-oil-companies-in-the-world>

## What it's like working in the oil and gas industry

The international nature of the industry brings opportunities to travel far afield. However, much activity occurs far from oil or gas fields, in 'hubs' such as Aberdeen, London, Houston, the Middle East and the Netherlands. As such, it's often possible to stay closer to home if you wish.

Timescales in exploration and production are typically long: it may take five or ten years from starting the search for a new oil or gas field to beginning extraction, and the production phase can last for 30 years or more. Within this there are many discrete, shorter projects. Engineers working for operators and contractors typically work on one project at a time, each lasting several years; in contrast, an engineering company employee providing flow assurance calculations may complete the job in six weeks.

## Getting a graduate job in oil and gas engineering

It's important to understand how your role fits into the bigger picture, be able to work in a team and, in many cases, communicate with clients. Internships are increasingly common and are a good way to explore different types of work. Many employers run graduate programmes lasting several years that allow engineers to try out different areas. Later, they may choose to become specialists in a particular area, follow a management route or work in project engineering (a project management role).

**The oil and gas energy industry seeks graduates in:**

- Aerospace/aeronautical
- Chemical
- Control
- Electronics
- Instruments
- Materials
- Mechanical
- Power systems
- Telecom
- Automotive
- Civil/structural
- Electrical
- Environmental
- Manufacturing
- Mathematics
- Physics
- Software

Source: <http://targetjobs.co.uk/career-sectors/engineering/282435-energy-oil-and-gas-industry-sector-overview>