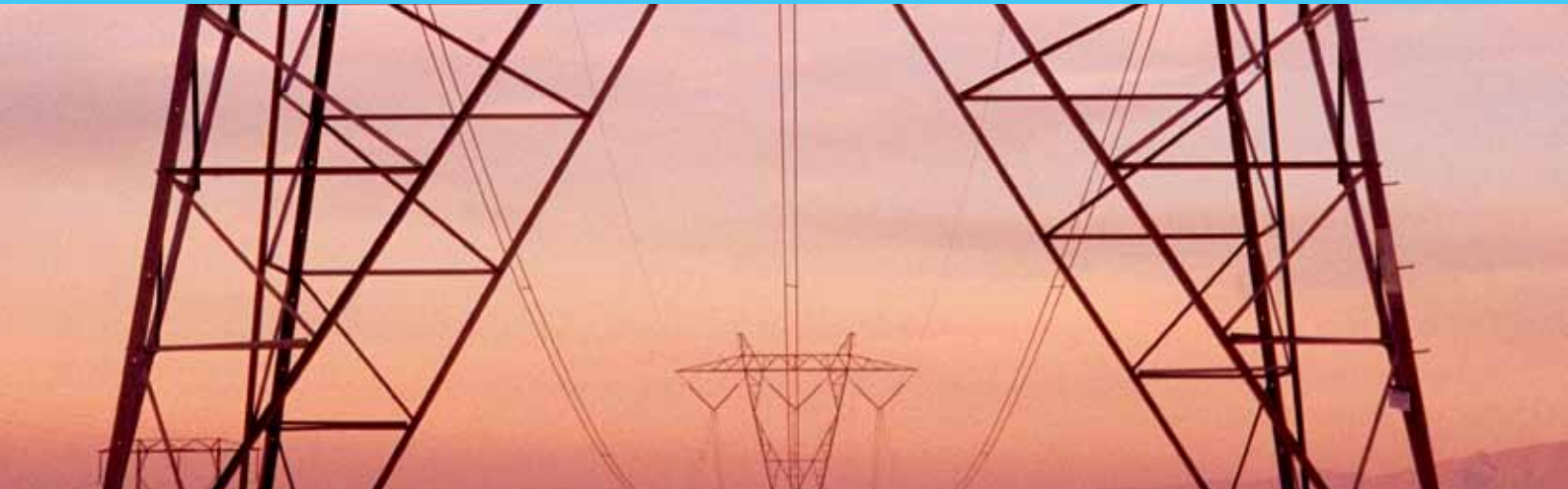


# Careers@Singapore Oil & Gas



## Singapore's vision for this industry

The oil and gas industry is a key pillar of Singapore's economy, accounting for 5% of the country's GDP. In 2009, this industry contributed S\$57 billion (US\$43.4 billion) to Singapore's total manufacturing output.

As global appetites for refined goods grow unabated and urban populations expand, global energy demand will continue to rise. Singapore has geared up the industry's refining and storage capacity and deepened its expertise in alternative energies with a focused eye

on capturing emerging markets. In the long-term, the strategy for oil and gas involves capitalising on the strengths of multiple, related sectors that form the thriving energy eco-system in Singapore.

Oil refining is the cornerstone of this strategic vision and Singapore has attracted multi-billion dollar fixed capital investments by major oil companies who are building technologically advanced refineries. Such improved refining activities have been a boost, as well as a catalyst, for Singapore's

progressive logistics industry, which has greatly increased oil and gas and petrochemicals storage capacity in recent years.

The presence of major oil and gas companies has also spawned a market for the world's leading oilfield services and equipment companies who provide regional support from Singapore.

The oil industry enjoys further competitiveness from the volume of advantaged feedstock it generates for the petrochemical industry. And, this sector is itself focusing on the discovery of specialty chemicals with excellent prospects for advancing Singapore's new

growth industries, particularly advanced electronics and clean technology.

The oil and gas industry is further augmented by a strong, innovation-led engineering sector as well as a formidable and well-established marine and offshore engineering sector – the wealth of experience and knowledge from these industries will help fuel growth in the offshore sector for years to come.

To secure the global competitiveness of Singapore's oil and gas industry the focus is now on optimising the synergies between the industry's four main sectors: energy & chemicals, oilfield equipment & services, marine & offshore engineering, and process management & logistics.



## Energy & Chemicals

Singapore is one of the world's top three export refining centres and the world's third largest oil and oil products trading hub, making it the undisputed oil hub in Asia. Central to the oil industry's phenomenal success is Singapore's unique 'plug and play' infrastructure and complete supply chain integration. By simultaneously growing capacity and improving trading services and logistics, Singapore offers oil and petrochemical majors the flexibility to control export volumes which is crucial to price discovery.

Singapore further optimises its refinery assets through integration to crackers, where valuable feedstock molecules are produced from the naphtha from refineries to feed a thriving petrochemicals industry.

The centre of oil and gas activities is Jurong Island – home to more than 95 leading oil and gas, petrochemicals and specialty chemicals companies from around the world. Recent multi-billion dollar investments have also

put in place some of the world's most technologically advanced refinery infrastructure and petrochemical plants in Singapore.

Besides manufacturing, Singapore is also the choice location for energy and chemicals companies' headquarters

and R&D activities. The safe business environment, availability of excellent manpower as well as presence of leading research institutes and universities have attracted multi-national companies from the oil majors to petrochemicals and specialties to set up their presence here.

## Who are the leading players here?

**Shell (The Netherlands)** was the first to build a refinery in Singapore in 1961, and this has grown into the company's largest refinery operation. Shell also operates the massive Shell Eastern Petrochemicals Complex, its largest petrochemicals investment, which produces basic petrochemicals like ethylene and mono-ethylene glycol.

**ExxonMobil (US)** is adding a second world-scale petrochemical facility in Singapore, greatly expanding the capabilities of its original integrated refinery and petrochemical facility. This

new addition will make it ExxonMobil's largest integrated chemical and refining site.

**Lanxess (Germany)**, the world's largest manufacturer of synthetic rubber is building a butyl rubber plant and well as the world's largest neodymium polybutadiene (Nd-PBR) plant in Singapore, representing the company's two largest investments globally. In order to address the growing Asian market, Lanxess has also relocated its Global Headquarters for the butyl rubber business unit to Singapore.

**Jurong Aromatics Corporation (Singapore)** is on track to build a S\$2.4 billion new plant on Jurong Island that will produce 1.5 million tons of aromatics per year as well as 2.5 million tons of fuel.

**BASF SE (Germany)** established its R&D Lab for Nanostructured Surfaces in 2006 – the company's first research facility in

Asia for nanotechnology – and further expanded its research capabilities to include the R&D Lab for Organic Electronics and Organic Photovoltaics. In 2008, these labs were integrated as the BASF Global Research Center Singapore, with research capabilities in key growth clusters like nanotechnology and energy management.



## Oilfield Equipment and Services

As the global energy market becomes ever more diverse and complex, Singapore's oil and petrochemical industry has been buoyed by an influx of leading energy companies, the implementation of technologically advanced refinery infrastructure and an unprecedented speed of change and discovery.

The stable, pro-business environment and central location has also made

Singapore the choice regional headquarter base for many oil and gas companies, where key decisions affecting regional exploration and production are made.

These developments present unprecedented new opportunities for the world's largest oilfield services providers including Schlumberger, Halliburton, Baker Hughes and Weatherford.

## Who are the leading players here?

**Schlumberger (France)** is a leading oilfield services company that has an integrated manufacturing facility in Singapore. The company specialises in oil and gas industry technology, information solutions and integrated project management.

**Halliburton (US)** has set up an advanced manufacturing and technology centre in Singapore to produce sophisticated oil and gas tools made up of both high-performance mechanical and electronic systems.

**Baker Hughes (US)** is a top-tier oilfield services company that has invested aggressively in new infrastructure

throughout Southeast Asia, and offers drilling and evaluation as well as completions and production services in Singapore.

**Aibel (Norway)** is expanding its presence in Singapore and offers a full range of engineering services for the oil, gas and renewable energy industry for both onshore and offshore projects.

**FMC Technologies (US)** is a leading global specialist in technology solutions for the energy industry. The company has established sophisticated plant and testing facilities in Singapore to grow its presence in Asia.



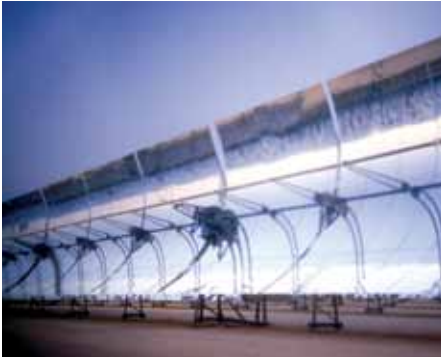
## Marine and Offshore Engineering

Singapore has long had a thriving marine and offshore engineering industry founded on its trading history and strategic position along global shipping lines. It is a leading centre for offshore activities, with a dominant global market share of rig building and Floating Production Storage Offloading (FPSO) vessel conversion.

Confidence in Singapore's high level of expertise in shipyard operations, vessel design and engineering and marine equipment and services, combined

with an unprecedented growth in demand from the offshore industry, have spurred an inflow of private fixed capital investments in infrastructure and capabilities. To promote innovation and entrench the offshore sector, the Singapore government has set up well-equipped research and development infrastructure such as the Maritime Research Centre, Centre for Offshore Research and Engineering and Centre of Innovation – Marine and Offshore Technology.

## Who are the leading players here?



**Keppel Offshore & Marine (Singapore)** is a global leader in offshore rig design, construction and repair, ship repair and conversion, and specialised shipbuilding. In addition to its engineering groups for marine, offshore and deepwater, the company established a corporate R&D centre (Keppel Offshore & Marine Technology Centre) in 2007 to further upstream research to boost its design and engineering capabilities.

**SembCorp Marine (Singapore)**, a world leader in marine and offshore engineering and construction, also established a corporate R&D centre in 2007 for product development and process innovation. The company is building a state-of-the-art, 206-hectare custom-designed integrated yard facility incorporating the latest production technology and processes. The new yard is a major milestone in SembCorp Marine's growth strategy and will enable it to serve as a centralised one-stop shop for a wide range of maritime activities and vessels.

**Rolls-Royce Marine (UK)**, a global power systems company, has recently relocated its global headquarters for its marine business to Singapore. Its operations in Singapore's marine industry spans more than three decades and includes a ship design team and a repair and overhaul service centre.

**Wärtsilä (Finland)** has had a presence in Singapore since 1982 and today has more than 800 service professionals who serve customers in the marine and power plant sectors. In addition to two workshops for the servicing of marine engines of all makes, and one workshop that builds switchboards for control panels for the marine, offshore and landbased industries, the company also has a wharf of 110 m, a global logistics centre, and a naval architecture and ship design facility.

**EMAS (Singapore)** has recently added a seabed-to-surface engineering and construction division to boost its comprehensive range of integrated offshore oil and gas capabilities offered by its Energy, Marine and Production divisions.

## Process Management and Logistics

Singapore is consistently rated as the world's easiest place to do business (World Bank 2010), offering an ideal environment for multinational headquarter operations, global sourcing and complex manufacturing. This success hinges on its world-class logistics infrastructure, comprising world-class seaports and airfreight facilities, superior warehousing and delivery channels, and unparalleled connectivity, regionally and globally.

According to the World Bank 2010 report, Singapore is the world's No. 2 logistics hub. As many as 17 of today's top 25 global third-party

logistics providers have established regional headquarters or regional hub operations here. Leading companies like DHL and TNT have set up centres of excellence to develop solutions unique to Asia, and Singapore is also home to The Logistics Institute – Asia Pacific, Asia's leading logistics think tank.

The highly competitive and sophisticated process management and logistics industry is well placed to develop and deliver innovative logistics and supply chain management solutions that address the needs of the oil and gas, marine and offshore engineering and chemicals sectors.



## Who are the leading players here?

**Vopak (The Netherlands)** has four petroleum and chemical terminals in Singapore, and provides tank storage, regional distribution and other value-added bulk liquid logistics services. It has a regional headquarters in Singapore, one of four globally, to manage its vast operations throughout Asia.

**WorleyParsons (Australia)** has established its regional headquarters and engineering centre in Singapore to manage its growing power, industrial,

and natural resources businesses in Asia and the Middle East, as well as provide front-end engineering solutions to its clients.

**Emerson Process Management (USA)** has located both its international procurement office and global distribution centre for control systems in Singapore, placing the company closer to global suppliers and enabling it to better support its Asia-Pacific supply base with speed and flexibility.

## Where do you fit into the picture?

As the global energy market becomes increasingly complex, Singapore has been steadily keeping pace with capacity and technological developments, and boasts the competitive advantages to secure its leading global position among the top 10 petrochemicals hubs in the world.



Singapore is Asia's oil products trading hub and price discovery centre, with oil majors like BP, Chevron, Shell and Total, as well as international trading houses such as Glencore and Unipet, among the many industry leading oil traders that are based here.

Global energy companies have expressed their confidence by making significant investments in infrastructure, as well as by establishing advanced research centres and headquarter operations. This means that Singapore is the base where many key decisions affecting the development of the regional oil and gas industry are made.

The Singapore government's approach to developing the industry has been progressive. It actively promotes research and development collaboration between the private sector and its educational institutions, through initiatives like the Centre for Offshore Research & Engineering and Centre of Innovation - Marine and Offshore Technology. The Institute of Chemical Engineering and Sciences on Jurong Island is another high profile centre that is spearheading key research to develop advanced materials and high value specialty chemicals.

Singapore stands ready to adopt innovative solutions. For example, it will greatly multiply its storage capacity with the impending completion of Phase 1 of the Jurong Rock Cavern - a massive underground facility for the storage of crude oil, condensates and naphtha.

Sustainable development is another area of importance for the industry. One area of early success has been in process optimisation and catalyst development to maximise the use of capital-intensive refinery assets. Research within the industry continues to accelerate the development of new sustainable feedstock and technologies, while industry wide measures help

raise energy efficiency and encourage emission management.

Growth in this industry promises to be multi-faceted, and hinges on the application of exciting and cutting-edge technologies. Singapore is keen to develop a pool of skilled oil and gas industry professionals who can support these developments and take the industry to the next level. Already the industry's major players are looking for top offshore and onshore talent to fill some of these positions:

- Electrical, Mechanical and Civil Engineers
- HSE Specialists
- Instrumentation and Machinery Engineers
- Naval Architects
- Piping and Design Engineers
- Process Engineers

There is no better time to be in Singapore than now. The city-state is growing economically, with a constant bustle of activity. Situated at the heart of the world's fastest growing economies, Singapore is a bridge between the East and West, burgeoning with diversity and opportunities. Couple these factors with the city's superb physical infrastructure, sophisticated IT network, great variety of living, dining and entertainment options, and you have one of the most liveable cities around.



## About Contact Singapore

Contact Singapore is an alliance of the Singapore Economic Development Board and Ministry of Manpower. It aims to engage overseas Singaporeans and global talent to work, invest and live in Singapore.

With offices in Asia Pacific, Europe and North America, Contact Singapore is the one-stop centre for those who wish to pursue a rewarding career in Singapore, as well as individuals and entrepreneurs who are keen to invest in or initiate new business activities here. Contact Singapore actively links Singapore-based employers with talent and provides updates on career opportunities and industry developments in Singapore. We work with public and private sector partners to facilitate the interests of potential individual investors in Singapore.

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