

Market Snapshot

Oil & Gas, Electric Power and Renewable Energy

Myanmar Headlines

- Myanmar's proven natural gas reserves are worth an estimated US\$75 billion.¹
- Myanmar has an estimated proven gas reserves of 10 trillion cubic feet and proven oil reserves of 50 million barrels.¹
- FDI in oil and gas currently accounts for about 36.3% of the country's total foreign investment.²
- Myanmar is the one of the region's largest exporters of natural gas.³
- One of the lowest electrification rates in the world with only a third of the population able to access reliable and affordable electricity.¹
- Electricity demand is forecast to increase by 700% by 2030.¹
- Approximately 60% of the country is well-suited for solar electricity generation.¹
- World Bank estimates USD\$5.8 billion of investment required over the next 15 years to achieve universal electrification by 2030.¹

Business Opportunities

The diverse nature of Myanmar's economy and its extensive development requirements, present opportunities for British businesses in a wide range of sectors. This market snapshot provides a brief overview of the vast potential business opportunities in Myanmar's Oil & Gas, Electric Power and Renewable Energy Sectors.

Oil & Gas

Myanmar is one of the world's oldest oil producers, having exported its first barrel more than 150 years ago. Myanmar started exporting oil in 1853, and a well from 1887 is still operating today within the Yaynanchaug field. According to the US Energy Information Administration, Myanmar has estimated proven gas reserves of 10 trillion cubic feet and proven oil reserves of 50 million barrels. Myanmar proven reserves have recently been estimated as worth US\$75 billion at current prices.¹ The country has a total of 104 blocks, 53 onshore and 51 offshore.³

Recent onshore and offshore bidding rounds have brought some of the world's biggest oil and gas companies to Myanmar. A number of British companies secured onshore and offshore exploration licenses in the 2013 offshore round including Shell, BG Group and Ophir Energy. A total of \$4.8 billion in foreign investment was approved for the oil and gas sector in 2015-16, slightly more than 50% of total FDI for all sectors approved during the year.⁴

There are currently four offshore areas in operation. The oldest is Yadana, run by a consortium led by Total from France. Yetagun is operated by Malaysia's Petronas, Shwe by Daewoo International from South Korea, and Zawtika by Thai firm PTTEP. Of these four, Yadana, Yetagun and Zawtika export large amounts of gas to Thailand – one common aphorism is that Myanmar's natural gas powers Bangkok's bright lights. Shwe Gas, meanwhile, is connected via a cross-Myanmar pipeline to southern China.⁵

While there are four areas operating offshore, there is still plenty of untapped potential under Myanmar's coastal waters. As of September 2016, many of the companies recently awarded offshore blocks are conducting their initial assessments and beginning survey work. Significant investment is likely to follow in the years ahead. Many of the foreign firms have partnered with local companies, particularly in shallow-water

blocks, and Myanmar companies are likely to benefit through improved skills and expertise.

Onshore oil and gas projects have generally had less scale in recent years than the offshore industry, though there are still opportunities for investors.

In keeping with the rapid growth of the oil and gas industry, the government is planning to expand the support services for the offshore industry. Some examples are plans for offshore supply bases currently under consideration, while human resource upgrades are also needed.

Initially the offshore gas industry was developed with an export focus. However, domestic electricity consumption is growing rapidly, and in the future, gas-fired generation is likely to be an important part of Myanmar's generation mix.

Progress is being made in the offshore industry, but there is still much to do.

This presents opportunities for British companies, particularly those with experience operating in deep water. British companies have already entered the market in logistics, security and training.

The list of opportunities in Oil & Gas sector are broad-ranging and include the following:

- Institutional and regulatory guidelines and support for the government
- Logistics and supply chain management services
- Infrastructure development and equipment supply
- Technical and skill development training and services
- Oil refinery supply chain services and management
- Health and safety training
- Environmental, risk and social impact assessments
- Professional consultancy services
- Legal and professional advisory services

For more details about oil & gas sector, please click [here](#) for UKTI's Oil & Gas Sector Report.

Electric Power

Myanmar faces a major electricity challenge. The country has one of the region's lowest electrification rates, and shortages are a common occurrence. Yet this is slated to change.

The good news is that Myanmar has great potential to not only meet its target of 100% electrification but also become a regional exporter in the future. For now, though, it is important to take stock of the current situation.

- Myanmar has one of the lowest electrification rates in the world with only a third of the population able to access reliable and affordable electricity. ¹
- Only 30% of the population has access to the reliable grid electricity and 84% of households in rural Myanmar have no electricity connection. ¹
- Most of the country's generation capacity comes from 39 power plants, including 25 hydro-power, 13 gas-fires and one coal plants. Hydro-power generates 65% of the total electricity produced (down from 71% in 2011), gas 33% and coal 2%. ⁶
- Electricity demand forecast to increase by 700% by 2030, with the increasing demand from special economic zones, residential projects, commercial buildings and manufacturing plants. ¹
- Myanmar has plans under way to upgrade the current electricity capacity of 4456 MW to 24GW by 2030 with the help of international donor agencies. ⁷
- World Bank estimates USD\$5.8 billion of investment required over the next 15 years to achieve universal electrification by 2030.
- Under the National Electricity Master Plan, which was prepared by the Japan International Cooperation Agency (JICA), the country will add 23,594 MW of capacity and build 41 new power plants.

The future energy mix is hotly debated in Myanmar. There has been some opposition to hydropower, though the potential is enormous, given the size and strength of Myanmar's three main rivers, the Irrawaddy, Salween and Chindwin. Gas-fired plants are also on the cards, partly given Myanmar's offshore reserves, though the future of coal is hotly debated. Renewables are also to shoulder an increasingly large amount of the generation burden.

Much of Myanmar's untapped potential for electricity generation is from hydropower. Often the best sites are in outlining areas, meaning significant investment in transmission lines must be undertaken. Distribution networks are also much improved particularly in Yangon, Naypyitaw and Mandalay, though further spending is required to bring them up to date. As the bigger cities are added to the grid, smaller towns and villages are also ripe for future electrification.

There are opportunities for UK companies in:

- Upgrading of generation and transmission capacity
- Installation of new grids and transmission lines
- Short term power generation
- Maintenance and renovation of existing grids and power plants
- Addition of new generation capacity
- Financing projects
- Engineering services
- Human capital and technical skill training
- Management consulting services

Renewable Energy

Currently, about 70% of Myanmar's domestic energy is generated by hydropower. This leads to seasonal shortages particularly during the summer months, as electricity demand peaks and reservoir levels drop. The government previously announced plans to transition to thermal sources for base-load generation, but it is increasingly becoming obvious that renewables will also generate a significant share of Myanmar's electricity. Myanmar has a renewable target of 15-20% by 2020, and according to the ADB, the country has huge potential for renewable electricity. ⁸

Solar and wind are both promising generation technologies for the country. However, large-scale projects have so far not taken place, though there are a number of plans in place. Small-scale renewable solutions, such as mini-grids linking together a cluster of villages in remote areas, powered at least in part by solar power, or telecoms towers located in areas without regular power access, have drawn significant interest. ⁹

An estimated 60% of the country is well-suited for solar electricity generation, with an average direct normal irradiation level of about 1400 kWh per sq. meter per year. Local people in Myanmar have made significant use of micro-scale solar panels to power household appliances, though larger solutions have been slower to develop. Improved knowledge and investment will be crucial to boost solar in the future, and a number of MoUs have been signed for large-scale solar farms.

Use of wind energy is at the very initial stage, though future prospects are promising. Potential available wind energy of Myanmar is around 365.1 Terra Watts hour / year. However, wind power requires significant capital expenditure, and so far projects are either very small-scale or in planning stages. ⁹

The coastal areas as well as the mountainous areas of Chin, Shan and Kachin States are held to be the most promising for wind power. Data is being collected, and a number of projects are in the works. ⁹

There will be opportunities for British companies in this sector. For now many of them are smaller-scale, but it will not be long before the first major solar and wind projects are erected in Myanmar. There are opportunities for UK companies in:

- Equity Investment and financing

- Solar and wind energy development projects
- Technical training services
- Project management services
- Supply of solar and wind energy equipment
- Engineering services
- Educational training surrounding renewable energy

Key Stakeholders

Government Key Stakeholders



Business Key Stakeholders



BG GROUP



aggreko



International Donor Agencies



Challenges

Infrastructure: Myanmar's physical and technical infrastructure is underdeveloped and this can make doing business difficult, time consuming and expensive.

Corruption & legal framework: like much of the region corruption is an issue in Myanmar and something that British companies must avoid. There are also remaining US sanctions which will apply to some British companies. Myanmar legal framework offers the foreign investors uncertainty in doing business in Myanmar. The institutional framework for electricity unit pricing is so unstable which leads to delay for investors in doing infrastructure projects.

Human capital: One of the biggest challenges facing domestic and foreign business is the limited availability of appropriately skilled local staff. Investors will need to invest time and money in training staff.

For more details, please click [Here](#) for UKTI's Doing Business Guide in Myanmar.

UK Companies: Case Studies

Shell (Formerly known as BG Group): Oil & Gas

Shell (Formerly known as BG Group) has reported it will operate its two shallow-water blocks, A4 and AD-2. The company holds 45% and 55% equity in the blocks, respectively. For Block A-7 and deep water block AD-5, the company holds non-operating equity of 45% in each. Both are in the Rakhine basin in the western

offshore area of Myanmar. “The four blocks cover a total area of nearly 30,000 square kilometres, which is why the seismic surveys will take around six months,” said an official from Myanmar Oil and Gas Enterprise (MOGE).¹¹

In 2013, Shell (Formerly known as BG Group) and Woodside, the two international oil companies were awarded the right to exploration and production activities in two shallow water and two deep water blocks in Rakhine basin. According to Myanmar Oil & Gas Enterprise (MOGE), Shell (Formerly known as BG Group) and Woodside signed a production-sharing contract in March 2013, when the two companies committed to invest more than US\$1 billion across the four blocks over a six-to- eight-year exploration period.¹⁰

Aggreko: Electric Power

Aggreko, a world leader in the provision of temporary power and temperature control services, announced in March 2015 the contract win of a 95 MW natural gas power project in Myanmar. Commissioned by Myanmar Electric Power Enterprise (MEPE), a department of the Ministry of Electricity and Energy, additional power is being brought in to support the national grid during the summer months where a drop in rainfall levels affects the production of power. With over 70% of the country’s energy supply dependent on hydropower, a fast-track temporary power solution guarantees continuous power in the immediate term.¹²

Black and Veatch: Renewable Energy

UK based Engineering and construction firm Black and Veatch has announced in October 2015 that it has been appointed by Thailand’s Green Earth Power (GEP) to provide design and consultancy services for a 220MW PV solar power plant to be built in Myanmar. The solar PV plant will be built in Minbu, Magway region of Myanmar. The project was envisioned to entail an investment of US\$275 million.¹³

How we can help you

The British Chamber of Commerce Myanmar

The British Chamber was established in July 2014 and has grown to a network of over 200 member companies, including Myanmar, British, ASEAN and European businesses. The Chamber provides regular networking opportunities for the business community, up to date and relevant information on doing business in Myanmar and advice for market entrants navigating the challenges of establishing a business here. Find out more about Chamber membership [HERE](#).

The British Chamber can offer UK companies a range of business services to new UK Exporters and UK companies interested in doing business in Myanmar.

These include:

- **Business Matching**
- **Promotional Events**
- **Market Visit Programme**

Find out more about our Business Services [HERE](#). For further discussion on how we can help you, feel free to contact to Chloe Taylor, Project Director, Overseas Business Network Initiative, British Chamber of Commerce Myanmar. Email: chloe@britishchambermyanmar.com

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