YJ Oil & Gas

Scenario and requirement

Game 1 – Communication document

CIMA

Industry background

Oil is a naturally formed liquid found in the Earth's crust and preserved there for many millions of years. Oil is being extracted in increasing volumes and is vital to many industries for maintaining industrial growth and for all forms of transportation.

Natural gas is used in a wide variety of industrial processes, for electricity generation, as well as for domestic heating. Natural gas is described as the "cleanest" of all fossil fuels, as it generates the lowest levels of carbon emissions of all of the fossil fuels. Almost all off-shore oil fields also contain reserves of natural gas. Therefore, drilling and production of oil also provides the opportunity to produce and sell natural gas from these reserves.

This case study material concerns only the "upstream operations" which is defined as the exploration, drilling of exploratory wells, subsequent drilling and production of crude oil and natural gas. This is referred to as the "exploration and production" (E & P) business sector.

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Licences

All companies operating in the exploration and production (E & P) sector need to have a licence to operate each oil and gas field. Each country around the world owns the mineral rights to all gas and oil below ground or under the sea within its territorial waters. This generates enormous revenues for the countries which owns the mineral rights. The government of the country which owns the onshore or off-shore land will issue a licence based on a set of criteria concerning its technical ability to bring the potential oil and gas fields into production, its awareness and track record in respect of environmental issues and the company's financial capacity in respect of the investment required to bring the oil and gas field into production.

Some of the smaller E & P companies apply initially for a licence to drill to identify the size of the reserves at the oil and gas field and subsequently enter into a Joint Venture, known in the industry as a "Farm-out" agreement, in order to raise the required finance to bring oil and gas fields into production, due to the huge amount of capital expenditure required.

Independent oil and gas exploration and production (E & P) companies

Independent oil and gas E & P companies are an important feature in the liberalised global energy market. The UK and some other European countries have a substantial and growing oil and gas exploration and production business sector which comprises a range of small listed companies.

YJ Ltd (YJ) is a UK company which is listed on the AIM with an initial public offering (IPO) of US$ 60 million. Its main shareholders are 12 large institutional shareholders which together own 96% of the shares. The principal activity of YJ is the exploration and production of oil and gas fields. The company's strategy is to explore, appraise and develop into production its licensed oil and gas fields both safely and responsibly.

To date, YJ has been successful in identifying and bringing into production three oil and gas fields. This involved obtaining the required licences, test drilling and then proceeding through to production drilling at these three locations. It has therefore been successful in achieving its investors' expectations. The oil and gas exploration industry is hugely capital intensive before any oil or gas can be brought into production and sold.

Even though YJ is listed in the UK, it prepares its accounts in US Dollars, as is usual in the oil and gas industry. All revenues from the sale of oil and gas are priced in US Dollars.

Drilling for oil and gas

All of the drilling operations that YJ undertakes are off-shore. YJ's geologists and surveys teams are experts at studying and scanning potential areas for oil and gas reserves. YJ's team undertakes extensive survey work over potential oil and gas fields including 2D and 3D seismic surveys and controlled source electromagnetic mapping to try to establish the size and depth of possible oil and gas reserves, before licence applications and test drilling commences. Oil and gas fields can be classified according to the reasons for drilling and the type of well that is established, as follows:

- "Test wells" are defined as wells which are drilled purely for information gathering purposes in a new area to establish whether survey information is accurate.
- "Production wells" are defined as wells which are drilled primarily for the production of oil or gas, once the oil or gas reserve has been assessed and the size of the oil or gas reserve proved.

Health, Safety and Environmental issues

Health, Safety and Environmental (HSE) issues are firmly placed at the top of YJ's objectives. YJ wishes to ensure that it actively prepares for and manages the risks it faces in the hostile and difficult environments in which it operates.

Three new licences awarded and forecast cash flows

Early in 2017, YJ had applied for three licences in Asia and during August 2017, YJ was informed that it had been awarded three licences from the same Asian government. The Board of YJ was delighted and following the announcement of the three licences being awarded to YJ, its share price on the AIM market rose to US$ 32.50 per share.

The terms of each of the licences requires the licensed company to commence production of oil and gas at each of the oil and gas fields within two years. If production of oil and gas has not commenced in any one of the three oil and gas fields by 30 September 2019, the licence for that field would be cancelled by the government. The government could then award this licence to another company.

These 3 newly licenced fields require capital expenditure of US$ 136 million per field with a total capital expenditure of US$ 408 million.

YJ currently has cash available of only US$ 46 million. YJ will be able to raise new equity funds and additional debt financing for US 90 million. It will also have available cash generated from operations over the next 2 years of US$ 122 million.

Therefore it faces a large forecast cash deficit of US$150 million. (US$408 - US$46 - US$90 - US$122).

Farm-out proposals (Joint Venture proposals)

Following the granting of the three licences to YJ, two different multi-national oil and gas companies, N and P, have approached YJ with "farm-out" proposals. A "farm-out" arrangement (like a Joint Venture) is defined as assigning or selling an interest in a licence to another oil and gas production company. The farm-out proposals from both Company N and Company P is that they take a 40% share in one, two or all three of the newly licensed oil and gas fields.

The proposals for EACH of the farm-out agreements made are as follows:

1. N proposal – N will pay 40% of all drilling costs for each of the farm-out agreement = US$ 54 million plus N will pay YJ a fixed upfront one-off payment of US$ 100.0 million for each farm-out agreement

or

2. P proposal – P will pay 40% of all drilling costs for each of the farm-out agreement = US$ 54 million plus P will pay YJ US$ 22.0 million each year for the forecast 10 year life of each of the oil and gas fields for each farm-out agreement, which is US$ 220 million in total over 10 years.

The NPV values for the 2 alternative farm-out fees (excluding the share of the drilling costs which are the same), which take account of the time value of money are:

N = NPV of US$ 90.1 million.

P = NPV of US$ 129.6 million.

The Chairman of YJ has stated that he does NOT really want to share any of the oil and gas fields with N or P. However, he recognises that farm-out agreements may be necessary, but would like to minimise the number of farm-out arrangements made, as the profits to be made by YJ in the future from each of the fields far exceeds the farm-out fees payable by Company's N or P.

You are required to discuss whether YJ should consider a farm-out arrangement for one, two or all three of the newly licensed oil and gas fields. You should also discuss whether the proposed farm-out arrangement with Company N or Company P would be better suited to the **cash requirements of YJ.**

Requirement

You are required to draft an email to the YJ Board to help to persuade the CEO and the rest of YJ's Board on:

- The merits of farm-out agreements for YJ
- Which of the 2 farm-out proposals from either N or P is best suited to YJ's cash requirements.
- Your recommendation on which farm-out proposal from N or P should be chosen and for how many of the 3 newly licensed fields
- Your justification of why you have made this recommendation.

Your email should contain no more than 10 short sentences.