

Outlook for the Development of Oil and Gas Industry in Vietnam

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Abstract. Oil and gas industry makes a significant contribution to Gross Domestic Product of Vietnam. In 2015 it appeared to be in an intricate situation under the conditions of fall in oil prices caused by excess of supply over demand in the oil market. On the one hand, low prices for oil enable Vietnam as an importer to purchase more oil in the world market. On the other hand, the state company PetroVietnam loses a part of its customers in the domestic market. This tendency can lead to stagnation of the oil and gas industry in Vietnam under weak oil prices if the government does not take timely action.

1. Introduction

Oil and gas industry is one of the priority fields in the development strategy in Vietnam. Oil production is not only the source of foreign currency for the country, but also the most important motive power for the current economic development. After more than 30 years of construction and development, oil and gas industry in Vietnam has achieved remarkable progress. According to the law on foreign investments, dozens of oil companies are producing oil and gas. The total amount of investments is about 7 billion US dollars. Many new oil and gas fields have been discovered; oil and gas output has been grown rapidly. This has facilitated the country's turnaround in the late 80-s of the 20th century and brought Vietnam into the list of oil-exporting countries which has improved the national energy security [1].

2. Method and Materials

The analysis of oil and gas industry in Vietnam has been conducted on the basis of studying annual statistic report from OPEC, oil companies British Petroleum and PetroVietnam. Inventory and production status of oil and gas in Vietnam has been considered, assessment of Vietnamese industry needs has been conducted, and industry growth dynamics has been estimated.

3. Results and Discussion

Geologic exploration of oil and gas in Vietnam started in 1959. At the behest of the Vietnamese government, the Soviet Government sent experts to assist in oil geology development of Vietnam. From 1959 till 1961 Soviet and Vietnamese experts completed the summary report "Geology and oil-and-gas potential in the Democratic Republic of Vietnam" [2].

The national petroleum corporation PetroVietnam dominates in the oil and gas industry of Vietnam, it operates under the direction of Ministry of Trade and Industry and controls this branch. The oil



industry of Vietnam includes three segments: Upstream (Exploration and production), Midstream (Transportation) and Downstream (Processing and distribution).

Oil and gas industry in Vietnam is currently a relatively young branch and cannot satisfy the demand in the country [3]. Insufficient number of qualified specialists obstructs the branch development. The country mainly exports crude oil and imports oil products for local demand. The existing oil refinery plants Dung Quat and Nghi Son meet only about 35% of domestic demand. ORP Dung Quat is going to start reconstruction and planning to increase further output up to 9.5 million tons per year, which will make it possible to satisfy 50% of domestic demand.

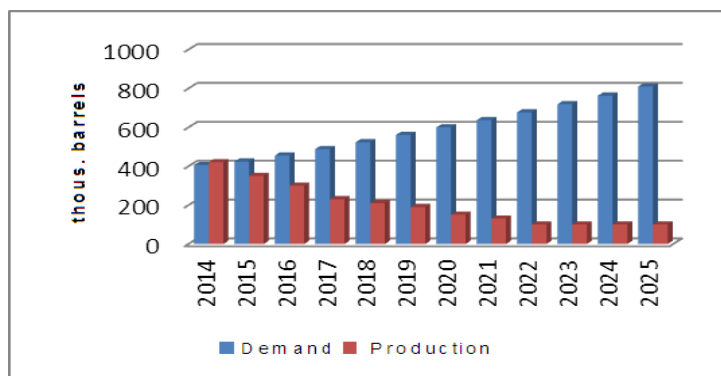


Fig. 1. Oil demand and production forecast in Vietnam.

At the same time, increase in demand for oil products both in short term and in the long term is predicted. This is due to the population growth and development of industry, transport sector in particular. According to OPEC, demand for oil fuel rapidly grows, especially in developing countries, and deliveries will not satisfy the demand [4] according to forecasts by 2025.

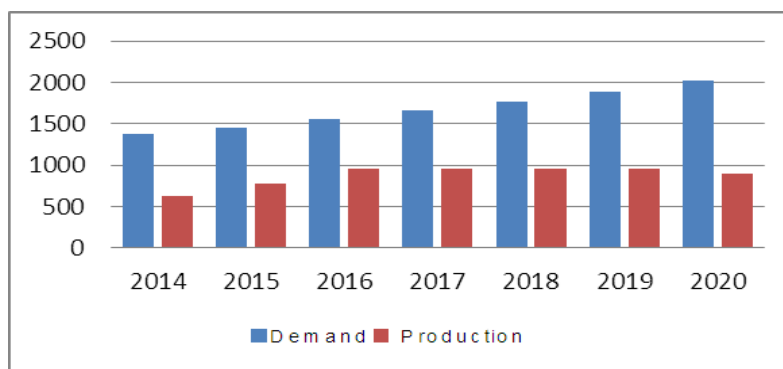


Fig. 2. Gas demand and production forecast in Vietnam.

At present the annual oil and gas production is on the average about 24 mln. tonnes of oil equivalent. Vietnam ranks the 4th place in oil reserves and 7th – in gas reserves in the Asia-Pacific Region (according to the data from British Petroleum, 2010); therewith it takes the 25th and 30th places in the world. The ratio between reserves and production (R / P) is 32.6 in oil and 66 in gas. This indicates a significant potential of the branch future development [5].

Proven reserves of hydrocarbon raw materials in sedimentary basins in Vietnam are considerable (about 4600 million tons of oil equivalent, where gas makes about 50%), they are mainly widespread in the continental shelf. Oil and gas ultimate reserves produced in 11 fields are about 1200 million tons

of oil equivalent [6]. Potential of unexplored oil and gas reserves in the rest of area is rather high. This is a valuable asset and basis for future development of the oil and gas industry.

According to the data from BP, oil reserves of Vietnam in 2013 were 0.3% of total volume in the world, average annual growth was 8.5% between 2000 and 2012.

Oil and gas potential of Vietnam is mainly concentrated in 7 basins: Kyulong, Con Son, Hong He, Malay Tho Chu, Fu Han, The Paracel Islands and Truong Sa. Five of them are being developed, while two are at exploration stage (The Paracel Islands and Truong Sa basin). Oil and gas basins of Vietnam are generally located in the southern Vietnam, they are difficult for exploration. In particular, two basins The Paracel Islands and Truong Sa are located at a great depth in the South China Sea, thus they require key investments. The basin Kyulong was the first in Vietnam to be exploited, and it is considered to be the largest by oil reserves. However, this basin has been being developed for 23 years and now it shows evidence of decrease in production. Malay Tho Chu also used to have a substantial oil and gas potential, but at present time the reserves in the basin Hong He decreased [7, 8].

Further development of Vietnam keeps on being associated with strategic partners, large oil companies abroad. Thereby system generation of oil and gas ports is one of important trends. Oil ports in Vietnam are located in Hai Phong, Quang Ninh, Nghe An, Da Nang, Binh Dinh, Ho Chi Minh City, Dong Nai, and Vung Tau. Oil ports in Vietnam can receive ships of 60 - 120 thousand tonnes. These ports will allow fuel importers to search for new sources of oil and gas which are cheaper than the available sources in this area, reduce costs for discharge and losses during cargo handling operations.

To consider the branch development, we have conducted a swot-analysis of oil and gas industry in Vietnam:

Strengths: the market share of domestic oil and gas makes 35% due to the development plan and rational expansion of production; the activities in oil industry were synchronized from exploration and exploitation, distribution to services connected with oil and gas production.

Weaknesses: total dependency on global oil prices; low degree of flexibility due to the government control; human resources capability and the applied technology cannot fully satisfy the demands of the branch.

Opportunities: state participation entitles to a lot of privileges; there are significant prospects of oil production during approximately 60 years; there are no alternative energy sources since they require great investments, but their efficiency is not high, using nuclear energy sources is rejected on account of radioactive waste toxicity.

Threats: oil reserves are decreasing due to the fact that production ratio exceeds exploration ratio; exploration extension and development of deep-water areas will be costly and risky; the restructuring plan for the state company PetroVietnam affects the condition of the whole branch.

4. Conclusion

According to the presented analysis, the strategy of oil and gas complex development in Vietnam must include the following aspects.

Increasing volumes of searching and exploring oil and gas resources; supporting investigation of new sites, field development; improving domestic infrastructure of oil and gas transportation and processing. The government control must be maintained so as to guarantee growth in domestic supply and meet the demand for the country's development, lowering the dependence on deliveries from abroad.

Increasing investments for scientific research in oil and gas sector, enhancing training of high-qualified specialists in order to find new energy sources (alternative energy forms, green power), emerging development technology, reducing expenditure in the oil sector.

Legislative development, tax regulations and state funding policy should be changed in order to contribute to increasing income of oil companies, creating sufficient financial capacity, encouraging them to develop new energy sources and improve competitiveness in the free market.

National environmental policy is required to conform to international safety requirement and meet demands for energy sources.

Increasing strategic oil reserve to prevent delivery interruptions by advancement of high offshore technology in the South China Sea that will make it possible to increase raw hydrocarbon production output and promote economic growth in the republic.

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