Woodrow Wilson International Center for Scholars

Taking Pakistan into the 21st Century: The Economic and Political Challenges

Washington, D.C., **July 24, 2002**

Oil and Gas Developments: Challenges and Opportunities

By

Zakauddin Malik

Energy Demand and Supply

Pakistan's Energy mix is highly dependent on oil and gas, which together provide 85% of the country's primary energy supplies. During 2000-01, out of a total 44 million tones of oil equivalent energy used, 43.5% was met from oil (of which 86% was imported) and 41.5% came from gas. Average domestic oil production remained around 58,000 barrels a day against a demand of 385,000 barrels per day. The rest of the oil was imported as crude oil and refined petroleum products at a cost of around $3.0 billion. The average gas production was about 2.4 billion cubic feet per day, which is equivalent to 370,000 barrels of oil per day, and there is a very large unsatisfied demand of gas in the country. Future energy demand is estimated to double in 9 to 10 years.

Oil and Gas Prospects and Exploration Effort

Pakistan's prolific sedimentary basins are stretched over 827,000 square kilometers. These basins exhibit an assortment of rock assemblages, eventful geological evolution, and favourable petroleum generation and entrapment history, which points towards a rich hydrocarbon habitat. Since the first exploratory well in 1866, a total of 541 exploratory wells have been drilled, resulting in 146 discoveries. Considering the potential, the drilling density is quite low - 1.38 wells per 1000 square kilometers - yet success rates are an encouraging 1:3.70. Pakistan's present oil reserves stand at about 763 million barrels, out of which 310 million barrels remain to be produced. A total of 40.873 trillion cubic feet (TCF) of gas has been discovered, out of which 26.36 TCF are still available. However, independent studies have indicated that the potential is much more, i.e. about 40 million barrels of oil and 200 TCF of gas. Yet even today, most of the regions remain virtual geological frontiers, which have significant latent oil and gas potential. Presently, 25 companies are exploring onshore and offshore Pakistan under 52 licenses and 92 leases over an area of 161,867 square kilometers. These companies represent a real international mix, coming from countries such as Australia, Austria, Canada, France, Hungary, Ireland, Malaysia, Netherlands, Poland, the USA, and the UK. To accelerate exploration and development of oil and gas resources, the government resolved the problem of pricing in the previous policies and announced a revised new petroleum policy in May of 2001, providing further incentives for exploration and production (E&P) companies. Offshore policy is now based on production sharing.

Oil Refineries

There are five refineries in the country, namely ARL, PRL, NRL, PARCO and Dhodak, while one, Bosicor, is under construction. The present refining capacity of the country is about 11.28 million tones per year. It is envisaged that the present shortfall of 8 million tonnes in capacity will increase to 16 million tonnes per year in relation to demand by 2010. To meet the growing demand for petroleum products, an attractive package has been offered to companies interested in establishing an oil refinery.

Gas Transmission and Distribution Companies

The government is encouraging industry to shift from imported fuel oil to natural gas in power generation with anticipated savings of US $400 to 500 million. Use of compressed natural gas (CNG) is being encouraged in the transport sector. More than 240 CNG stations are operational in the country, meeting the requirements of about 200,000 vehicles, and it is expected that by June of 2003, more than 350 stations will be operational to further reduce the burden of imported fuel. Availability of liquid petroleum gas (LPG) has been increased, and its use as domestic fuel in rural areas is being encouraged to conserve forest and wood resources. Accordingly, gas consumption is expected to grow from about 2.5 billion cubic feet per day (BFCD) in 2002 to 5 BCFD in 2012.

Sui Northern Gas and Sui Southern Gas companies are two public sector companies which are responsible for transmission and distribution of gas in the north and the south respectively. The country has a well-developed gas transmission and distribution network consisting of nearly 8,000 kilometers of transmission lines and 53.000 kilometers of distribution lines with a consumer base of 3.6 million in place. To bring 1 BCFD of additional gas from recently discovered gas fields into the system within a 30-month period, the development of fields is being accelerated and the gas transmission and distribution infrastructure is being improved and expanded through a Rs. 20 billion development project.

Deregulation and Privatization of the Oil and Gas Sector

With an 85% share of the total primary commercial energy needs of the country, oil and gas have been identified as a priority development sector with considerable potential. Historically, the sector had been strictly controlled by the state, but presently, deregulation, liberalization and privatization are the stated objectives of the government. Several important measures have been taken to achieve these objectives; the government's role is now confined only to policymaking. The Boards of Directors of public sector companies have been reconstituted and given full autonomy. Import of fuel oil and diesel oil has been deregulated. Consumer prices of petroleum products are now linked to the international market and are reviewed fortnightly by the oil companies committee. Similarly, consumer prices of gas are linked to international fuel oil and crude oil prices and are reviewed every six months. Issues concerning gas wellhead pricing, arising out of previous policies, have now largely been settled.

Margins of oil marketing companies have been increased, while a further increase is on the cards to improve returns and to encourage them to invest in storage facilities and infrastructure.

An oil and gas regulatory authority has recently been established to cover all regulatory functions of the downstream oil and gas sector. Similarly, Government Holding has also been in place and operational since 1-7-2001 to manage the government's investment in the upstream sector.

It has been decided in principle to privatize the Oil and Gas development Company Limited (OGDCL), Pakistan Petroleum (PPL), the Pakistan State Oil Company Limited (PSO), and SNGPL and SSGCL. The privatization of OGDCL and PSO is at a fairly advanced stage and both companies expect to be privatized by the end of 2002, opening up many investment opportunities. Government of Pakistan minority share holdings in oil fields in nine joint ventures were divested recently and minority share holdings in other companies (e.g. POL, ARL) will be divested soon.

Investment

Responses to these measures have been encouraging and since October of 1999, an investment of US$1128 million has been committed. This amount includes US$ 73 million for exploration, US$ 505 million for gas field development, US$ 278 million for oil pipelines, US$ 55 million for marketing and US$ 150 million for CNG. An additional amount of US$ 67 million is to be invested by local companies.

Regional Oil and Gas Market

Pakistan has a unique geographic and strategic location in Asia, forming a centerpiece linking the Middle East with Southeast Asia and Central Asia with the warm waters of the Arabian Sea and South Asia and can also provide corridors for regional supplies. With the fast growing markets of East Asia, South Asia and Pakistan, the availability and security of energy supplies and the diversification of their supply sources is becoming critical for economic development. Due to its strategic location and the strength of its well-developed energy sector, Pakistan has the potential to emerge as a leading transit country in international energy trade in Asia. In this context, three transmission pipeline projects are under consideration of the government, namely the Qatar-Pakistan pipeline, the Iran-Pakistan-India pipeline, and a Turkmenistan-Afghanistan-Pakistan pipeline. In addition, a storage and export terminal, combined with export refineries/LNG plants on Pakistan's Arabian Sea coast at Gwadar can provide a convenient outlet that would be vital for the Central Asian countries if their oil and gas are to find international markets.

Qatar-Pakistan Gas Pipeline

In 1990, Crescent Petroleum International contemplated a gas import project through an offshore pipeline from Qatar to Pakistan for delivery of gas from Qatar's north field, which has 300 TCF of gas reserves, to Gadani in Pakistan through a proposed 1620 kilometer long, 44 inch diameter pipeline with a capacity of 2 BCFD and expected construction and completion time of three years.

Iran-Pakistan-India Gas Pipeline

The Iran-Pakistan gas pipeline project was conceived in 1993. Iran later requested for the extension of the pipeline to India. In May of 1995, it was decided that the proposed 2670 kilometers gas pipeline from Iran to India with a capacity of 3260 million cubic feet per day should be laid overland. The government of Pakistan fully supported the project and ensured the security of supplies to India. An MOU was signed in February of 2002 for the award of a pre-feasibility study of the project, co-financed by the government of Iran and BHP, which will be completed by the end of 2002. According to recent reports, India has floated a proposal of laying down gas pipeline from Iran to India through the sea.

Turkmenistan-Afghanistan-Pakistan Pipeline

The government of Turkmenistan during November of 1991 floated the idea of a gas pipeline from Turkmenistan to Pakistan. The source of the gas pipeline is the Dauletabad gas field. The 1440 kilometer, 48 inch pipeline was to follow the Heart to Kandahar road through Afghanistan, terminating at Multan. The pipeline would then extend an additional 587 kilometers to a point near New Dehli. The government of Turkmenistan had guaranteed deliverability of 25 TCF of gas exclusively for this project. UNOCAL, the lead partner and major shareholder in the consortium, withdrew from the project in December of 1998 due to instability in the region. The Centgas consortium could not find a financier to replace UNOCAL and as a result, the consortium could not take off.

With the ushering of peace and the establishment of an interim government in Afghanistan, the interest in this pipeline project has been revitalized. Recently, an agreement was signed between the governments of Turkmenistan, Afghanistan and Pakistan to conduct a pre-feasibility study for the oil and gas pipeline projects from Turkmenistan to Pakistan via Afghanistan on the occasion of the trilateral summit held in Islamabad in May of 2002. During the trilateral working group meeting, conducted at the level of the ministers and experts, at Ashkabad from July 9 through 11 of this year, the Asian Development Bank had pledged to fully finance and oversee the preparation of the pre-feasibility and feasibility studies for the trans-Afghanistan to Pakistan pipeline project, as well as promising to act as financier during the execution stage.

Conclusions

The government has indicated its keenness to significantly accelerate the pace of petroleum exploration in the country. The new offshore and onshore policies provide an improved package of incentives to the prospective entrepreneurs for accelerating hydrocarbon exploration and development.

The fiscal, economic and structural reforms for deregulation, liberalization and privatization of the oil and gas sector have led to improvements in efficiency and governance. Proposed regional oil and gas pipelines have opened new investment avenues for the private sector and should attract foreign investment in this extremely important sector in Pakistan's economy.