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Sudha, venu Menon

ICFAI Business School, Ahmedabad

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ABSTRACT

With the presence of MNCs and Big corporate players of the country, Gujarat holds a strategic position in the Indian power industry. It has been ranked 2nd in the Power Sector rating Report (2005) of CRISIL-ICRA submitted to the Ministry Of Power, India. Gujarat has installed capacity of 9288 MW with the projected peak demand of 10605 MW. The expected addition of 536 MW by the end of 2007 will still result into the deficit of almost 2652 MW in the installed capacity by the year end. This depicts the growth prospects in the power sector of the state. The article gives an overview of the major public and private players in energy sector, performance and prospects of energy sector including oil& natural gas and renewable energy sources. The projections of the per capita energy consumption suggest a tremendous growth, which will be nearly impossible to deal with the current power generation capacity. The massive expansion is needed to cater the growing power needs in order to sustain a growth in not only secondary but also in the primary and tertiary sectors of the economy. The article also highlights the achievements of Jyotigram Yojana, the flagship programme of Gujarat Government to provide uninterrupted supply of electricity to rural areas

Energy Sector in Gujarat: Performance and Prospects

Sudha Menon

When we look at the growth potential of the regions or states, Gujarat remains one of the lucrative destinations for the investors. There are some unique features which make Gujarat the most preferred regions for establishment of the manufacturing as well as service facilities. Gujarat has almost 5% of the total population of the country with extensive transport facility by road, rail, sea and air with 41 large ports and 11 airports functioning throughout the state. With the GDP of 38.4 Billion USD and round about 18.4 billion of fixed capital investment, Gujarat remains as one of the major growth driving state for the country. In the macro economic growth model practiced by Gujarat since its inception, energy sector always played a vital role. In fact energy is regarded as one of the chief engine of growth in Gujarat.

With the presence of MNCs and Big corporate players of the country, Gujarat holds a strategic position in the Indian power industry. It has been ranked 2nd in the Power Sector rating Report (2005) of CRISIL-ICRA submitted to the Ministry Of Power, India. Gujarat has installed capacity of 9288 MW with the projected peak demand of 10605 MW. The expected addition of 536 MW by the end of 2007 will still result into the deficit of almost 2652 MW in the installed capacity by the year end. This depicts the growth prospects in the power sector of the state. Against this context, the article gives an

overview of the major public and private players in energy sector, performance and prospects of energy sector including oil& natural gas and renewable energy sources. The projections of the per capita energy consumption suggest a tremendous growth, which will be nearly impossible to deal with the current power generation capacity. The massive expansion is needed to cater the growing power needs in order to sustain a growth in not only secondary but also in the primary and tertiary sectors of the economy. The article also highlights the achievements of Jyotigram Yojana, the flagship programme of Gujarat Government to provide uninterrupted supply of electricity to rural areas

The Power Sector in India

The Indian power sector has been remained one of the fastest growing sector in the economy. The major limitation of Indian power sector is the deficit which is being faced in order to meet the demands. The current installed capacity in the country is far lower than what is being required to fulfill the requirements to all the power consuming segments of the country.

The Contemporary Characteristics of the energy sector are as follows:

1. Increasing Demand Supply Gap
2. Massive Investment
 - Gap Between the required and Planned investment
 - Utilization of plan outlay
3. Service Expansion, Customer Choice & Quality of Service.

The data suggest that India would be requiring an addition of almost 100000MW to the existing electricity generation capacity by the year 2012. As per the reports the current supply is falling short by almost 12 %. As on May 31, 2006 the total installed capacity of power generation was 1242272 MW, where the thermal power generation contributes almost 66% of all the electricity generated. The economists, planners and industry experts suggest that to sustain a GDP growth rate of 8% annually, the power sector of the country should grow at 1.82 times of the GDP growth rate. The implications of the same on power sector are that India will have to do an addition of 18000 MW to 20000 MW to its installed capacity each year.

The regulatory body for the power affairs in the country had provided the cushion to enhance the growth in the sector. Open Access Regime for wheeling and banking of power across the national grid has been introduced by the government of India.

The Electricity Act, 2003 permits / offers the following

1. 100% FDI has been allowed in the power sector
2. No license required for establishing, operating and maintaining a generating station
3. No import duty for mega power projects (1000 MW and above)
4. Reduced import duty of 20% for equipment for renewable energy

5. Direct Sale of power

The Gujarat Scenario:

With the presence of MNCs and Big corporate players of the country, Gujarat holds a strategic position in the Indian power industry. It has been ranked 2nd in the Power Sector rating Report (2005) of CRISIL-ICRA submitted to the Ministry Of Power, India. Gujarat has installed capacity of 9288 MW with the projected peak demand of 10605 MW.

The Power Sale in Gujarat (2004-05).

Industrial -	56.68%
Agriculture-	24.75%
Domestic -	11.15%
Commercial -	4.14%
Traction -	1.0 %
Others -	2.28%

The players like Adani, Enercon, Suzlon and Nuclear Power Corporation are coming up with the major investment into the power sectors of the states. Currently the major public sector and private sector players in the state's electricity generation and distribution are as follows:

Public sector:

1. Gujarat State Electricity Corp. Ltd. (GSECL)
2. Gujarat Industries Power Co. Ltd. (GIPCL)
3. Gujarat Mineral Development Corp. (GMDC)
4. Gujarat State Energy Generation Ltd. (GSEG)

Private Sector:

1. Torrent Power Generation Ltd. (TPGL)
2. Gujarat Paguthan Energy Corp. Pvt. Ltd. (GPEC)
3. Essar Power

Gujarat has been proposed as potential hub for power generation and transmission by the government of Gujarat. The following are the few characteristics which make Gujarat eligible for the same.

- The availability of the coal bed methane and lignite which serves as basic fuel for thermal power generation.
- Long coastal area

- Proximity to the off shore gas reserves of India
- Land availability
- The existing infrastructure and the proposed.
- The growing demand

The estimated growth in the demand of power in Gujarat is 5.7 % per annum in the period of 2006-2017. The growing demand can be easily capitalized using the resources, proximity and the non material inputs.

The Oil & Gas Sector:

Gujarat governs a command over the on shore production of the crude in India by contributing almost 54% of the total production. The government of Gujarat proposes Gujarat as energy hub, since it has unique feature of having State Wise Gas Grid and Multi Gas Supplier. Gujarat also contributes the on shore gas production with 39% of the total production. Refineries in Gujarat are accountable for 46% of refining capacity of the country.

The major oil and gas reserves are located at the following locations in Gujarat:

1. Ankleshwar
2. Mehsana
3. Trapti High
4. Hazira
5. Bharuch
6. Ghandhar
7. Dahej
8. Palej
9. Kalol and isolated reserves around Ahmedabad

The existing gas grid of 550 km has been proposed to be expanded to 2200 km which will add a very positive attribute to the Oil and Gas sector in Gujarat economy.

The few of the factor which may woo the investors to establish a new set up can be

- Established Infrastructure
- Location Advantage
- Industry Friendly Power Policy
- Labor advantage
- Progressive Industrial Policy
- Market

The private and public sector enterprises like Adani, British Gas along with GAIL, GSPC, and BPCL are involved in gas distribution. Hazira and Palej are the only two LNG terminals in India, mentioning the potential of Gujarat to be a state who can lead India in the development and growth in oil and gas sector. The major factor is the location advantage, since Gujarat is having proximity to the Middle East gas reserves along with the attractive northern market to capitalize on.

The industrial power policy is supportive for the establishment of new units in the state since the electricity duty on the new establishment has been exempted for a period of 5 years. The units which generate electricity for the captive requirements also have been exempted from the duty for a period of 5 years.

Gujarat is one of the state which undergone the labor reforms leading to the flexible labor laws. The availability of skilled and unskilled human resources at lower cost is also a plus point for new ventures. It is one of the states with full relaxation in the labor laws in SEZs. Gujarat has been proven to be the state with the best utilization of the human resources by being the state with the least man days lost due to industrial unrest in the country.

The market of Gujarat is full of the oil and gas consumers. Fertilizers companies like IFFCO, KRIBHCO and GSFC consume major chunk of the oil & gas products having the rising demands. The units involved in the power production like NTPC and GEB also can be the potential consumers with establishments of RIL and IPCL. This has been supported well by the progressive industrial policy adopted by Government of Gujarat with a focus on infrastructure, power reforms, tax regime rationalization, port led development and establishment of SEZs.

The Road Ahead:

There exists potential opportunities in the sector with the increasing demand-supply gap in the sector. The major focused area is the exploration which can lead to the improved production ultimately contributing to bridge the demand supply gap. The major organization operating nationally as well as globally had committed a massive investment into the energy sector specifically in the various areas of Gujarat during “Vibrant Gujarat 2005” led by the Mr. Narendra Modi, CM, Gujarat State.

The projections of the per capita energy consumption suggest a tremendous growth, which will be nearly impossible to deal with the current power generation capacity. The massive expansion is needed to cater the growing power needs in order to sustain a growth not only in secondary but also in the primary and tertiary sectors of the economy. The power reforms by the states like Gujarat will definitely enhance the possibilities of the large players investing a large sum of amount in one of the lucrative segment among the businesses.

Renewable Energy: Scrutiny of Instrumentality for Growth

The growth sustainability of the economy is not only dependent on the conventional energy sources. The limited reserves of the fuel and import of hydrocarbons is driving the energy sector and in turn the industrial development of the country. The global supplies of the raw materials for power generation influence the sustainable growth of the economy, which is vulnerable due to dependence on global markets and lead to uncertainties and complexities. The ecological balance and the worldwide opposition against the emission resulting from the burning of the conventional fuels and setting up the hydroelectric plants are the issues which lead the energy producers to think over the alternate sources of energy to generate power.

The energy structure should not only dependent on the conventional sources of energy, but also utilize the possibilities of power generation through the unconventional sources of energy. We can not rule out the possibility that, India may face a major obstacle due to global crisis in availing the hydrocarbons leading to retard the economic growth of the country.

As per Prof.B.S. Pathak, *Director, Sardar Patel Renewable Energy Research Institute*, "According to an estimate of the Ministry of Non-Conventional Energy Sources, the power potential of wind, small hydro and biomass for power generation is 79,500 MW. During the last two decades, technology advances have reduced the cost of energy from these sources to the level of conventional energy cost. In the next decade or two, solar thermal and photovoltaic power is expected to become cost competitive, which will greatly enhance the renewable energy generation capacity. We should, therefore, look at renewable energy as an important and sustainable solution for the energy problems of India."

The role of Gujarat in renewable energy generation is not satisfactory, though Gujarat is leading in terms of the installation and usage of the family-type renewable energy devices. The installed capacity in the wind power generation has not been expanded for almost more than six years. The conception of the renewable energy sources was assumed to be costly in monetary as well as in non monetary terms, but the technological advancement has made it equivalent to the conventional way of power generation. The large coastal area of the state can contribute a major chunk of wind as well as tidal energy. The power generation through biomass also the area of concern for the state since, it contributes only 0.5 % of total national power generation capacity.

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