

Despite the funding shortfall and the GOI's interest in taking advantage of concessional funding on bilateral projects, projects targetted for bilateral implementation are not being quickly approved. In fact, recently the Minister of Finance endorsed a proposal to restrict the usage of bilateral funds for new power projects. This was primarily due to an active local industry lobby and the perception that equipment imported under bilateral projects was not competitively priced. It remains to be seen whether the GOI will follow the proposed policy, given the extent of its funding shortfall and the inability of indigenous suppliers to complete projects in a timely manner.

3. COMPETITIVE SITUATION IN THE POWER SECTOR EQUIPMENT/SERVICES MARKET

a) Domestic Manufacturing Capacity

Over the years, India has attained a significant level of sophistication in its domestic manufacturing capacity. Today, India's manufacturing capacity ranges from steam turbines and generators upto 500 MW, to high pressure boilers, transformers upto 1000 MVA, and transmission and distribution equipment upto 400 MV. A wide range of electrical engineering products such as alternators, generators, transformers, switchgears, circuit breakers, insulators, conductors, capacitors, are also manufactured within India. India has also successfully exported its products to many countries around the world and has undertaken the establishment of overseas turn-key power projects, primarily thermal, against tough international competitive bidding.

The decision to set up a heavy electrical equipment manufacturing capability within the country was taken by the GOI as early as the 1950's. Today, domestic power generation equipment manufacturing is dominated by the giant GOI-owned Bharat Heavy Electricals Limited (BHEL) which manufactures both thermal and hydro electric generation, transmission and distribution equipment. BHEL is a 13-plant complex and has technical collaboration agreements with the USSR as well as other foreign manufacturers including Combustion Engineering of the United States (for boilers); KWU of West Germany for thermal generators upto 1000 MW capacity and related equipment; General Electric (USA) for gas turbines; Dresser Industries (U.S.) for control valves and pumps; and GE Canada for large hydro turbines. The GOI has made a policy decision to replace the 200/210 MW equipment by 500 MW installations for the thermal power plants. In addition to BHEL, there are several other manufacturers such as Crompton Greaves and Hindustan Brown Boveri. BHEL's share in the country's installed capacity has increased rapidly and nearly 60% of India's present generating capacity has been contributed by BHEL sets. About 80% of the Seventh Plan additions totaling 22,245 MW have been provided from BHEL sets. BHEL annual capacity currently is: Hydro - 1200 MW; Gas-based - 500 MW; Diesel - 300 to 500 MW; and Thermal - 1500 to 1800 MW.

The market potential for power equipment and services in India is very high, as the installed generation capacity is far below the level of capacities in most of the developed countries. Against the per capita consumption of electricity of 5,000 units in Japan, and 11,000 units in the United States, the average per capita consumption in India is only 200 units. As India strives to meet its ambitious plans a number of new developments are occurring which will affect the type of equipment required. Super thermal power stations of upto 3,500 MW are now being set up based on the configuration of multiple generating sets. These units are located near the coal pit-heads to minimize coal transportation costs. Gas turbines are being increasingly deployed to utilize the surplus natural gas. Efforts to conserve resources have led to the use of better and newer equipment like fluidized bed boilers for optimal use of the high ash content Indian coal. High voltage direct current transmission for economic