

In the transmission and distribution segment of the sector, India manufactures a wide range of transmission hardware, accessories, string insulators, AAAC/ AAC/ ACSR conductors, lightning arrestors etc. Various types of transformers suitable for units up to 500 MW are made. Also manufactured in India is the entire range of circuit breakers (bulk oil, minimum oil, air blast, earth leakage, vacuum and SF6), LT switchgears and controlgears, MCBs, switches, receivable and HRC fuses, control equipment and systems and other associated equipment and accessories.

The Indian cable industry offers a wide range of high/ medium/low voltage XLPE, PILC, PVC, VIR and rubber cables. Indian manufacturers of transmission line towers and related hardware can execute turnkey contracts for design and erection of entire transmission systems.

Indian firms are developing equipment-making capacities for renewable energy production (wind generators, photovoltaic cells, etc.), but the import component is still high — typically 50 per cent or more. (*See Annex IV for a list of major Indian suppliers of electrical equipment and services.*)

India's import requirements

The import market for large generators, turbines, switchgears, transformers, control gears and transmission hardware is likely to increase substantially in the next 5 years.

The most important factor driving this increase is the large expected investment in

private power projects, whether by domestic or foreign promoters. These promoters can be expected to insist on equipment of the highest quality and technical performance, with guaranteed delivery schedules. The reduction of India's normally high import tariffs (typically 80 per cent or more, plus excise taxes of another 30 per cent) to 20 per cent and no excise for power project-related equipment should make imports feasible and attractive. The heavy presence of U.S. investors in the IPP field may tend to shift imports from the traditionally-favoured European suppliers.

Table 4.1 provides import statistics (Indian government data) for the major items of interest for the last four years.

Transmission and Distribution. U.S. sources recently estimated the Indian market for power transmission equipment at over US\$ 3 billion. Since Indian industry currently supplies over 90 per cent of procurement, this represents an import market of some US\$ 250-300 million, which is expected to grow by 20 per cent a year. The principal imported items are transformers, cables, insulators, conductors, switchboards and relays, capacitors and circuit breakers.

A large quantity of co-axial, insulated and power cables is imported. Electrical insulators of ceramics, glass and porcelain are imported from Japan, Germany, the U.S., and Italy. The United States supplies the majority of liquid dielectric transformers of higher ratings (up to 250,000 KVA), followed by Italy and France. Fixed capacitors are provided by the U.S., Japan and Singapore. Electrical resistance wire is also imported from the the U.S., Japan, U.K. and Italy. Germany, Japan, the U.S. and U.K. are