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A European Community Initiative

Guidebook for European Investors in Bangladesh

Sector Profiles

European Commission
Asia Investment Facility

SECTOR 2

THE ENGINEERING SERVICES IN BANGLADESH

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GLOSSARY OF ABBREVIATIONS

ADB	Asian Development Bank
ADP	Annual Development Programme
BACE	Bangladesh Association of Consulting Engineers
BACI	Bangladesh Association of the Construction Industry
BBS	Bangladesh Bureau of Statistics
BCB	British Consultants Bureau
BCL	Bangladesh Consultants Ltd.
BMRE	Balancing, Modernisation, Relocation and Expansion
BPDB	Bangladesh Power Development Board
DPHE	Department of Public Health Engineering
DPM	Design, Planning and Management Consultants Limited
EFCA	European Federation of Consulting Engineers Associations
ENR	Engineering News Record
EPC	Engineering Procurement and Construction
EPZs	Export Processing Zones
FDI	Foreign Direct Investment
FIDIC	Fédération International des Ingénieurs-Conseils
GOB	Government of Bangladesh
GDP	Gross Domestic Product
IEB	Institution of Engineering Bangladesh
LGED	Local Government Engineering Department
MOS	Monthly Operational Studies
OECF	Overseas Economic Co-operation Fund of Japan
ONRI	Organisatie van Nederlandse Raadgevende Ingenieursbureaus
OPEC	Organisation of Petroleum Exporting Countries
UNCTAD	United Nations Conference on Trade and Development
USAID	United States Agency for International Development
VAT	Value Added Tax
VUBI	Verband Beratender Ingenieure
WTO	World Trade Organisation

LIST OF FIGURES AND TABLES

1. DESCRIPTION OF THE SIZE AND NATURE OF ENGINEERING SECTOR

Engineering is generally a major component in all types of foreign investment in Bangladesh. The majority of foreign direct investment (FDI) and private debt flows into development of infrastructure such as energy, and telecommunications, plus manufacturing, and most of the funds are used to finance importation of machinery, equipment, plus engineering, procurement and construction (EPC) activities. Due to the diverse types of activities carried out by the engineering sector, it is broken down into three main sub-sectors, namely consulting engineering, construction engineering contracting, and light engineering which is required to produce manufactured goods or engineered products.

The type of engineering services that are used depends on the sources of the project finance being used. Multilateral funds such as the World Bank and Asian Development Bank require that many of the activities they finance have a separation between consulting engineering and construction, where the consulting engineering firm is contractually required to be independent from the contractor and equipment suppliers.

The alternative approach which is more common practice in North America and Japan, sees many contracts awarded on a turnkey basis, where an engineering contractor may be totally responsible for obtaining project finance, designing engineering, constructing and commissioning the plant and finally handing over a completely operational facility. This is particularly the case in contracts awarded by most international oil or energy companies around the world and specifically in Bangladesh.

Procurement practices for projects funded by bilateral donors, often vary depending on the nationality of the donor. While some donors favour a turnkey approach that is quite common in Bangladesh for projects funded by the United States and Japan, other donors such as those from EU Member States often favour procurement split between independent consulting engineers and contractors.

It is almost impossible to quantify the overall size of the engineering services sector largely due to lack of detailed financial data for projects that are financed by offshore sources, and as such are not required to be reported in Bangladesh.

Numerous unsuccessful attempts have been made by various international agencies, including both the World Bank and the United Nations, to quantify the size of the sector.

The market segment that would be of greatest interest to European engineering firms is the consultancy sub-sector, which has a steady availability of projects that are financed by multilateral and bilateral sources, to promote greater private sector investments in infrastructure development.

2. REVIEW OF PRINCIPAL ENGINEERING SUB-SECTORS

2.1 Consulting Engineering Sub-Sector

Consulting engineering is a very attractive sub-sector for those firms which are competent and experienced in international consulting engineering, especially for those who specialise in infrastructure projects in the energy, power, environment, telecommuni-

cations, transportation and water sectors, that are funded by multilateral and bilateral sources.

Successful foreign engineers usually set up local offices in Dhaka, and develop collaborations with local Bangladeshi firms, though some European partnerships prefer to support their operations in Bangladesh from India or other countries in the region.

Architects and consulting engineering firms, mainly the design and supervision consultants, have been highly competitive in Bangladesh for many years, working mostly in donor-funded infrastructure projects which require engineering consultancy services. The US Embassy in Dhaka estimates the market for such services to be approximately US$ 20 million per year.

Traditionally, infrastructure development was funded entirely by multilateral and bilateral agencies. There is now a growing interest within the GOB as well as international donor agencies to see greater private sector participation in infrastructure development. This is already observed in the power sector, port development, transportation and telecommunications, where projects are supported by a number of bilateral aid agencies and development banks.

The World Bank has a number of multi-million dollar infrastructure development projects for agricultural sector investment, telecommunication sector reform and water sector improvement in their project pipeline, while the Asian Development Bank (ADB) also has infrastructure projects valued at several hundred million dollars in their project pipeline. These projects involve loans for the upgrade of the Dhaka Power System, a gas sector development programme, a programme to improve the efficiency of the ports in Bangladesh and an irrigation and rural development programme for the Chittagong Hill Tracts. The ADB also has a large technical assistance advisory programme for irrigation and rural development, electric power, ports, shipping and transportation, which will provide many opportunities for European firms.

While Asian firms may often appear to be more cost-competitive in construction work, the Bangladesh Government seems to prefer both American and European consultants to undertake project design and supervision work. With new road and bridge construction projects in the works, the high demand for engineering consultants is likely to increase.

2.2 Engineering and Contracting Sub-Sector

As stated above, the engineering and contracting sub-sector depends very much on the procurement practices of the client, who in turn, may be required to follow the procurement practices of a prime lender, such as the World Bank or ADB. Hence in those sectors, such as the oil and gas, power or process engineering industries, where normal industry practice is to award contracts on a turnkey basis, the projects are usually awarded to an engineering contractor, such as Brown and Root or the Japan Gas Corporation.

The construction sector according to the Economist Intelligence Unit Country Profile for Bangladesh, 1999-2000, has contributed some 6% annually to the gross domestic product (GDP) since the 1990s, with a 6.4% contribution to GDP in 1998/99. The civil construction sector is going through a high growth period in many urban areas as an increasing number of high-rise apartment complexes are being built. Although no reliable data could be found concerning the

size of this sub-sector, industry estimates by the Bangladesh Association of the Construction Industry (BACI) indicated that the industry employs some 40,000 people, who work in some 1,000 small, 150 medium and 37 large construction companies, and whose annual turnover ranges from US$ 5 million to US$100 million. A list of 37 BACI member firms is given in Appendix 5.

2.3 Light Engineering Sub-Sector

The majority of foreign direct investment (FDI) in light engineering, within the manufacturing sector, has been concentrated in the two export Processing zones in Dhaka and Chittagong, with US$ 91.02 million invested in readymade garments, US$23.23 million were in textiles and US$ 41.76 million in the leather goods industries in 1998-99.

3. LIST OF MAJOR LOCAL COMPANIES AND REVIEW THEIR EXISTING COLLABORATIONS WITH FOREIGN FIRMS

There are 26 active member firms of the Bangladesh Association of Consulting Engineers (BACE), who are listed in Appendix 4, out of some 50 consulting engineering firms that practice in Bangladesh, since membership of BACE, is limited to 26 firms. BACE is a member of the Fédération International des Ingénieurs-Conseils (FIDIC), the International Federation of Consulting Engineers, which allows membership only to be given to consulting engineering firms that are able to satisfy FIDIC requirements, i.e. that they are professionally qualified and are acting independently of contractors and suppliers. However, only a very limited number of BACE member firms are found to be suitably qualified or experienced enough to be able to collaborate successfully. They are: Bangladesh Consultants Limited, RMPC, Department of Public Health Engineering (DPHE, a Govt. body), House of Consultants Limited and Design Planning and Management Consultants Limited (DPM).

Table 2.1 lists some Bangladeshi engineering consultants who have recent experience in working abroad.

Table 3.1

Bangladeshi Engineering Consultants with Foreign Experience

Company	Countries of Experience
Bangladesh Consultants Limited	Design and construction management of two roads in Botswana, detailed design of a road that linked three islands in the Maldives, and several other projects in Central Asia, Sri Lanka and Zambia.
Design Planning and Management Consultants Ltd (DPM)	Macao
Development Design Consultant Limited	Kuwait, Laos, and Malaysia
Engineering Planning Consultants	Myanmar, India, Nepal and Pakistan
Engineering Consultants of Bangladesh	Middle East
Sheltech Consultants Ltd	Bhutan

As stated in section 2.2, there are some 1,187 listed local contractors, ranging from 37 large construction firms, that are mostly members of the Bangladesh Association of Construction Industry (BACI), some 150 medium sized companies and 1,000 small construction firms. Most of the large firms often carry out civil construction projects to build houses or develop industrial property as main contractors, however, when they work on major capital investment projects it is usually in the role of a sub-contractor, with an

Some of the larger Bangladeshi construction firms have worked in Libya, Iraq, United Arab Emirates, Singapore, Saudi Arabia, often as sub-contractors for international firms.

international firm either acting as the main contractor or providing the construction management.

Construction companies such as Mir Akhter Hossain were found to be typical of the larger construction firms present in Bangladesh. The firm, which was established in 1968 as a partnership company, was subsequently converted into a private limited company in 1980, and employs some 867 people with an annual turnover of US$ 20 million in 1999.

The main activities of the company include, construction of highways, bridges, multi-storey buildings, industrial buildings, warehouses etc, usually operating on a case by case basis, in joint venture with various foreign companies such as F.F. Cruz of the Philippines, the Samwhan Corporation from the Republic of Korea or China Harbour Corporation for road maintenance projects, the Foundation Engineers Shatu Limited from Japan and the M/s Daelim Industrial Company Limited from the Republic of Korea to build part of the embassy.

In the field of light engineering, a number of industrial groups were identified that include, the A.K.Khan Group, whose Engineering and Shipping Projects Department has developed a number of joint venture arrangements with Japanese and European corporations to set up textile mills, tanneries, match factories, the Cosmos Marketing Consultants who represent a number of international processing engineering firms that allow them to offer light engineering services in joint venture with a number of foreign firms for specific projects, the Pran Group, who have developed joint ventures for both engineered and food products and finally, the Anwar Group of Industries who are seeking to relocate textile manufacturing facilities from abroad.

4. FORMS OF CO-OPERATION

International engineering firms that work in Bangladesh find it necessary to develop collaborations with local Bangladeshi firms in order to work on most infrastructure projects. In projects funded by multilateral agencies, they also may find it advisable to develop collaborations with other international firms, particularly when they need some specific expertise not available within their own organisation, or when there is a possibility of accessing additional funding from bilateral sources. Market research indicates that while many infrastructure projects involve a consortium approach, those funded bilaterally may not, as they often involve tied aid. In this case tendering may be restricted to firms coming from the country of the bilateral donor.

In chemical processing industries, such as fertiliser and cement plant construction, or in power plant construction, where financing may come from a combination of multilateral, bilateral and private sector sources, a consortium approach was found to be a very common practice. Such a consortium usually includes both foreign and local partners.

The various Bangladeshi firms interviewed declared some unhappiness that they were rarely, if ever appointed as the lead consultants in multilateral projects and that they were often given minor roles.

In the construction sector, local contractors often receive sub-contracts to perform the more labour intensive portions of projects, with international contractors and engineers retaining the construction management role.

Other forms of collaboration may involve awarding local firms turnkey sub-contracts for off-site activities such as boiler house

development or development of waste facilities. In addition, collaborations may be developed to cover operations and maintenance programmes, which are part of a rapidly growing market for privatisation projects in Bangladesh. For example, this method is used where the foreign partner has designed a power generating facility, and is then required to operate it.

Due to the high degree of skills and technology required in developing a light engineering project, it is usually bought as a total package or as part of a joint venture programme. For example if the investment is part of a new spinning mill, the joint venture package may be with the mill's owners or be presented as a joint venture with an importer. There are a number of industrial groups in Bangladesh that are able to offer a range of light engineering services, with the technology and design coming from foreign principals.

5. EUROPEAN AND OTHER FOREIGN FIRMS PRESENT IN ENGINEERING SECTOR

The engineering consulting market for infrastructure development projects was found to be shared equally between firms from Europe and North America, with the Bangladesh Government often appearing to prefer either U.S. or European consultants for project design and supervision, while Asian firms are usually more cost-competitive in construction work.

5.1 Consulting Engineering Sub-Sector

A significant number of European and North American consulting engineering firms are already actively involved in most areas of infrastructure development, including the power, water, transportation, roads and highways, telecommunications and environmental sectors, where they often work in joint venture or in collaboration with local Bangladeshi firms. Foreign firms often provide their business partners with high levels of skills and technology transfer, since only a small proportion of the workforce has the required level of skill which is needed in this sector. Hence, there is scope for capacity building of local companies. This is of critical importance to the Government of Bangladesh.

Many individual member associations of the European Federation of Consulting Engineers Associations (EFCA), including the Organisatie van Nederlandse Raadgevende Ingenieurs-bureaus (ONRI) from the Netherlands, Syntec Ingénierie from France, Verband Beratender Ingenieure (VUBI) the German Consultants Association and the British Consultants Bureau (BCB) from the United Kingdom, have all targeted Bangladesh as a potential market for their members and have all organised trade missions to promote work in Bangladesh.

Already a significant number of European engineering consultancy firms have opened offices in Bangladesh and are successfully operating there. A list of some of these companies can be found in appendix 3.

European firms active in Bangladesh were identified during field research, include, Delft Hydraulics, DHV Consultants BV, IHE Institute for Hydraulic and Environmental Engineering, IWACO BV and NEDECO from the Netherlands, Rhein-Ruhr Ingenieur and Prof Dr Lackner and Partners from Germany, Carl Bro A/S, Glostrup and HPC Joint Venture from Denmark, Compagnie National du Rhone from France, Jaako Poyry from Finland and Kennedy & Donkin, Mott MacDonald, Rendell Palmer Tritton and the Halcrow Group from the United Kingdom.

5.2 Contracting and Construction Sub-Sector

Foreign companies active in this sub-sector are mostly involved in the construction of power stations, oil and gas development, a range of infrastructure development projects, such as road and bridge building, irrigation, water supply and sanitation, buildings and housing and industrial construction within Bangladesh.

The construction sub-sector is similar to the consulting engineering sub-sector, in that it is highly sector specific, with major international contractors such as the Brown and Root/Halliburton Group, Mott Macdonald, Momentum Engineering, Deutag Bangladesh specialising in oil field construction, while Japanese engineering firms are very active in process plant construction, such as fertiliser plants or power station construction, while the Finnish firm Wartsila NSD has initiated the engineering procurement and construction (EPC) of at least two barge mounted power plants, and even now in its partnership with the American energy company Coastal Power, Wartsila NSD retains the main EPC role. Most foreign contractors that work on major internationally funded projects, will often use local contractors as sub-contractors, since the majority of local companies are not usually able to pre-qualify for international projects, because of their lack of proven experience, qualifications and financial resources.

Very few European firms appear to be interested in contracting or civil engineering construction work in Bangladesh, as they do not appear to be able to compete with either low cost Asian firms or Bangladeshi ones. However, many of the European consulting engineering firms mentioned above have been able to market construction management services to many of the Asian contractors, particularly when they would incur penalties for contract overruns.

Japanese engineering contractors were found to be active in both the petrochemical industry and power development industry, with the Japanese firm Sumitomo serving as an engineering contractor. The cement industry is another industry where specialised foreign contractors have been active, with Scancem, one of Europe's largest cement groups already established. Daewoo from the Republic of Korea alongwith the Associated Cement Companies from India are currently building plants in Bangladesh.

5.3 Light Engineering Sub-Sector

Although light engineering investment in Bangladesh is mostly in export processing zones and mostly comes from Asia, there is still a major preference for foreign technology, particularly from Europe, in order to be able to produce goods of an export quality. This has not always been the case when using technology from the region, notably from India. European firms that provide light engineering services are mostly represented in Bangladesh through agents and representatives, such as the Anwar Group of Industries, the A.K. Khan Group or Cosmos Marketing Services.

6. ANALYSIS OF IMPORT AND EXPORT FLOWS

Currently, the main trade flows in the engineering services sector are mostly one way with the majority of engineering services being imported from abroad. Most capital inflows are in the form of suppliers' credits and debt financing as the international oil companies make capital expenditures on gas production, while the international energy companies develop electricity generating capacity. Table 6.1 below illustrates this aspect very clearly.

Table 6.1

Equipment Imports and Budget of Gas & Power Companies (US$ million)

Company	Item	'94-95	'95-96	'96-97	'97-98	'98-99	Total
Cairn Energy	Capital cost in budget	9.96	21.63	124.5	133.2	22.20	311.5
	Capital cost as % of budget	87.8%	86.8%	74.9%	75.9%	88.2%	77.3%
	Imports of equipment	-	29.85	25.36	153.50	-	208.71
Occidental	Capital cost in budget	1.40	11.89	32.29	70.58	48.77	164.93
	Capital cost as % of budget	31.8%	57.9%	78.7%	90%	91.2%	83.4%
	Imports of equipment	-	0.03	29.74	109.21	-	138.98
Rexwood-Okland	Capital cost in budget	-	-	1.81	3.98	2.17	7.96
	Capital cost as % of budget	-	-	81.2%	80.5%	80%	80.5%
	Imports of equipment	-	-	-	-	-	-
UMC	Capital cost in budget	-	-	2.20	5.43	3.23	10.86
	Capital cost as % of budget	-	-	83.95%	83.25%	82.85%	83.29
	Imports of equipment	-	-	-	1.92		1.92
Khulna	Capital cost in budget	-	-	-	60	43	103
	Capital cost as % of budget	-	-	-	-	-	-
	Imports of equipment	-	-	-	35.16	38.81	73.97
Rural Power Co., Mymensingh	Capital cost in budget	-	-	-	23	-	23
	Capital cost as % of budget	-	-	-	-	-	-
	Imports of equipment	-	-	-	-	7.18	7.18

Source: World Bank: FDI in Bangladesh: Issues of Long-run Sustainability 1999

7. ANALYSIS OF MAIN ENGINEERING SECTOR MARKETS

7.1 Local, regional and international markets

Figure 7.1 below is a profile of estimated private capital flows, broken down by sector between 2000-01 and 2009-10, as presented by the World Bank in 1999. However, this does not entirely reflect the full extent of these engineering services, because many of the international oil companies and power companies use offshore financial resources for these items, and so there is no requirement for it to be reported. The major markets for engineering services are mostly domestic and sector oriented. However, most European consulting engineering firms prefer to use local partners, rather than partners from other developing countries. In Bangladesh also, a European firm would have considerable problems trying to develop work with an Indian or Chinese partner, unless India or China were providing project finance.

Market for consulting engineering, which is the major interest for European engineers, comes mostly from projects funded by multilateral and bilateral funding agencies, with the flow of aid related funds and grants determining the size of the market. External assistance still contributes an important share of the financial resources needed for development, though this share is continuing to decline as the Bangladesh Government

Profile of Foreign Capital Flow to Bangladesh (US$ Million)

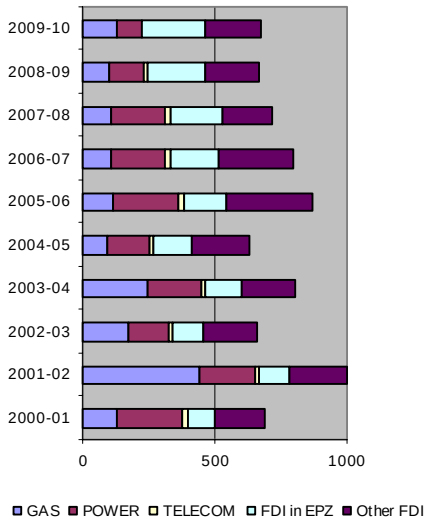

Figure 7.1

Source: **World Bank Staff Estimates, 1999**

increases its own share of Annual Development Programme (ADP) financing. Table 7.2 below lists the sector-wise allocation of project aid in foreign aided projects in the country's ADP for 1999-2000.

It should also be noted that because of the booming house building market in Bangladesh, there is a large demand for cement and a number of new cement plants have been built and more are expected. Cement plant development is a specialised business usually managed by a number of specialised contractors.

The light engineering market covers a broad range of sub-sectors, with potential major prospects coming from backward linkages of the textile industry, if these programmes are finally realised. Business prospects for light engineering services have been found in a number of the Balancing, Modernisation, Relocation and Expansion (BMRE) programmes that have been authorised by the Bangladesh Government in order to upgrade

Table 7.2

Foreign Aided Projects in the ADP 1999-2000

Sector	Number of Foreign Aided Project		Allocation of Foreign Aided Project (US $ Million)	
	Total	New	Total Allocation	Project Aid
Agriculture	39	2	107.00	84.20
Rural Development. & Institutions	33	3	242.49	185.36
Water Resources	14	2	111.54	83.91
Industries	6		4.13	3.49
Power	17		218.04	109.68
Oil, Gas & Natural Resources	7	1	104.04	75.06
Transport	35		337.48	237.74
- Jamuna Bridge	1		60.74	1.67
Communications	3	3	44.51	24.73
Physical Planning & Housing	27	3	103.48	82.41
Education and Religion	21		133.53	102.66

the manufacturing capacity of the country. Owing to the problems of pollution associated with the leather and metal working industries, a number of BMRE projects have been found justified, with financial assistance being made available through national banks and the Asian Development Bank under the BMRE scheme of the government.

The Bangladesh Government also hopes to privatise a number of public sector manufacturing industries, which could attract foreign investment and allow them to be modernised or relocated. However, no European company contacted appeared to be interested in any public sector manufacturing company in any industry sector, since all of the public sector firms owe very large sums of money to the public sector banks, which would have to be repaid.

The Bangladesh Government is said to be seriously considering selling some of the public sector textile mills, which may create interest abroad. Many of the private sector textile mills however appear to be very interested in being modernised and have sought investors in Europe to allow European firms to relocate equipment from Europe to Bangladesh.

A similar situation has been found with tanneries in Bangladesh. One BMRE programme to expand the existing Diamond Tannery in the Hazaribagh tannery area of Dhaka was found with its owners having previously started to expand the tannery in 1989 under a BMRE scheme with financing obtained from the Sonali Bank and the ADB, and are now seeking to obtain additional financing to finish the expansion. Modernisation is an area of considerable concern in tanneries on account of the high levels of pollution, which will only be solved by engineering solutions, which may ultimately be funded by concerned international agencies.

Other modernisation programmes were found in the metal working business, where the Pran Group of companies were found to have gone to the Dhaka stock market to raise Taka 20 million to expand the capacity of the Rangpur Foundry Limited to produce tube wells, rice mill spares, pumps and agricultural pipe fittings, using imported equipment, mostly from India. The same company had originally been set up in 1989 to manufacture pumps, tube wells, plastic pipes and engine spares.

Also in the building materials sector, there appeared to be some interest in attracting European machinery suppliers to relocate equipment to Bangladesh to set up the manufacturing of hollow concrete blocks, roof tiles and floor tiles.

7.2 Market trends

Market trends for engineering are good but unsure. They are good due to the large demand for such services, in every sector studied. On the other hand, they are unsure because it is unclear whether the Bangladesh Government will be able to deliver sufficient financial resources to pay for them.

In the energy sector, only 22% of the population is receiving electricity, and so the demand for electricity development is very large. Since power generation is not evenly distributed and the energy distribution network is inadequate, there will be a demand for distribution network development for the foreseeable future. In a similar way, Bangladesh has large gas reserves that can be developed, which would have enormous potential to generate large amounts of foreign exchange and so large amounts of foreign earnings. Hence, if the government allows the export of gas, it will also create large opportunities for gas pipeline development, an area of skills where Italian engineers often have a competitive edge.

While the entire infrastructure of Bangladesh is below many Asian countries in all sectors, there will be multilateral funding for a range of consulting engineering services for many years to come, which will continue to be very attractive to European consulting engineers.

In the field of light engineering, if the readymade garment industry is to survive after 2005, a certain minimum amount of new development in the backward linkage industries must occur. Also, as more export processing zones are opened, there will be other light engineering industries, such as

electronics or engineered goods starting up in Bangladesh.

In the textile field there appears to be a growing trend to source more and more textile engineering from Europe as textile mills are modernised, with the mills no longer able to use cheaper Indian and Chinese technology, since it does not allow them to produce the export quality yarn and fabrics needed by the ready made garments industry, if the latter industry is to remain competitive after 2005.

7.3 Role of Local Agents

Working or collaborating with the right competent local importer or agent is essential for any new investor trying to enter Bangladesh, since the strong and powerful ones can provide the correct introductions to the key decision makers in Bangladesh. Government procurement usually requires that foreign companies make their offers through parties who are resident in Bangladesh, hence the majority of engineering companies that are working on public sector contracts, either have resident offices in Bangladesh or are represented by key personnel. Selection of the correct competent agent is very important, since any Bangladeshi firm will automatically say they are the best politically connected and totally competent, even if they are not. All commercial departments of national embassies of the EU Member States that are resident in Bangladesh, keep a full and comprehensive list of possible agents, distributors and importers that are known to them, for view by any of their national firms.

Although the scope of the programme did not provide time to study this aspect in detail, a small number of agents were contacted. Business collaborations as the Anwar Group of Industries, who are heavily involved in developing business collaborations to build facilities to produce engineered goods, and the A.K. Khan Group and the Cosmos Group, were all found to have been very helpful to many foreign medium sized engineering firms that were trying to enter the Bangladesh market. This was found particularly true of firms that were offering specialised engineering services, covering consulting engineering, contracting for the oil industry and light engineering for a range of manufacturing projects. It was also noted that several firms had developed their relationships on a case by case basis, using their relationships with agents to be able to establish an entry into the market and then after an initial project that allowed them to enter the market, they opened up their own office.

7.4 Competition

Competition in engineering services is sector specific, European consulting engineers, it is claimed by the US Embassy in Dhaka, share a large portion of the market with consulting engineers from the U.S., though it was noted that several of the American firms originated in the United Kingdom but have since been taken over. The main competition for European and American firms comes from Australia and other Asian countries, including India and Malaysia.

In the oil and gas fields the major engineering firms are American, with Brown & Root/Halliburton being the world's largest oil services group. Line logging however, is completely dominated by Schlumberger, the world's largest line logging firm that is jointly French and American owned.

In the building of power stations and fertiliser plants, the main competition is from Japan, often supported by funding from OECF, while the American firms get strong support from USAID.

European firms are quite competitive in light engineering, with increasing competition coming from China, India and the republic of Korea.

Also the cement industry has become an increasingly large area for competition from Asia. Cement production increased from 207,464 tons in 1992/99 to 591,508 tons by 1997/98, as international investors became interested and more plants were built. Initially local production could only meet some 10% of demand. Currently the main competition for the major European Groups that have invested in Bangladesh is coming from Daewoo of the Republic of Korea and the Associated Cement Companies from India, whose plants are expected to be coming on stream by the end of 2000.

8. MAIN ENGINEERING SECTOR-RELATED ISSUES

8.1 Value added taxes on consulting engineering services

The Government has recently imposed value added tax (VAT) at a rate of 5.25% of the total value of consulting engineering services, in addition to income tax. The Government also imposes a 3% surcharge tax on the construction industry in addition to 4.5% VAT on construction.

The government has also imposed taxes on the purchase of any apartment that exceeds 140 sq. m., which is discouraging the capital market to invest in the real estate sector, thereby reducing business opportunities for engineering in this sector.

8.2 Political affiliations of importers and agents

A note of caution is suggested to investors seeking an agent or developing agency agreements, which can be binding and difficult to get out of. While the importance of the role of agents and importers was stressed above in section 7.3, potential investors looking for a long term relationship with Bangladeshi agents, distributors or importers must be fully aware of the problems that can arise when being aligned with firms that have strong political affiliations. While the party they support is in power it can be a positive advantage and may be the most important point in winning the contract, especially in public sector contracts. However, when the party leaves power, then problems can arise as that agent may have problems securing work. While it must be stressed that the various industrial groups mentioned above do not appear to have this problem, since their contacts are based on technical competence, it is not always the same with all agents, and investors are recommended to check with their respective national embassies for advice on this matter, since some 50% or more of engineering work comes through government procurement.

8.3 Land Ownership and Lease Agreements

On account of the serious difficulties of land acquisition outside export processing zones, that many investors often encounter, land ownership and land lease agreements have become an integral part of the all negotiations by foreign investors when developing new turnkey facilities in Bangladesh that must be concluded before the construction phase can be initiated. This is found to be especially true regarding land ownership where the law only provides for the registration of deeds, but not the registration of property ownership.

In theory the mandate of the Bangladesh Board of Investment, requires them to assist new investors to acquire land or help them to develop lease arrangements. However, most European investors found in practise, they received very little assistance from the Board of Investment in this matter.

As was stated in the energy sector profile, problems were encountered by the AES Corporation in their negotiations with the Bangladesh Power Development Board (BPDB), over the suitability of the land being offered by the BPDB as part of their agreement to allow AES to build and operate the 450 MW Meghnaghat Power Station. The problem was only settled with the intervention of the Prime Minister Sheikh Hasina, who had to dictate a supplementary agreement. These repeated disagreements between AES and the Power Development Board over the land lease agreements, may well have delayed the project for some two or more years.

APPENDICES

Appendix 1

Information Sources for Engineering Sector

Asian Development Bank (ADB). ***Monthly Operational Summary*** (MOS). The MOS, which makes monthly reports on the status of projects in the ADB's lending pipeline, from the point of identification of the project to the point of the signing of the loan or credit agreement. After loans or credits are signed, entries are then dropped from the MOS. The MOS can either be purchased in hardcopy or be downloaded directly from the ADB Web site at www.adb.org/

Engineering News Record (ENR). Published by McGraw Hill Inc., 1221 Avenue of the Americas, New York, N.Y., United States. English. US$144. Weekly.

Environmental Engineering and Support Services, published by International Trade Centre UNCTAD/WTO, Geneva. English, French and Spanish.

Turnkey Plants and Project Engineering Services, published by International Trade Centre UNCTAD/WTO. Geneva .English, French and Spanish.

UN Development Business publication packages the Monthly Operational Summary of the World Bank, together with invitations to bid and requests for expressions of interest. Engineering consultants that are interested in competing for multilateral development bank-financed business can subscribe to the UN Development Business. Subscription information is available at www.devbusiness.com

World Bank: Monthly Operational Summary, which makes monthly reports on the status of projects in the World Bank's lending pipeline, from the point of identification of the project to the point of signing of the loan or credit agreement. After loans or credits are signed, entries are dropped from the MOS. The MOS can either be purchased in hardcopy or be downloaded from the World Bank Web site at www.worldbank.org/html/opr/procure/MOS/sasia.html

World Bank Office in Bangladesh also lists ongoing projects at www.worldbank-bangladesh.org

Institution of Engineers, Bangladesh (IEB) is a professional association of engineers in Bangladesh. They hold regular meetings, workshops, seminars on engineering issues related to project development, needs of skilled manpower, current technological development and environment.

Appendix 2

List of Key Contacts

Bangladesh Association of Consulting Engineers (BACE) 34 Dhanmondi RA, Road # 16 Dhaka-1209, Bangladesh Tel: +880-2-811 5018 Fax: +880-2-811 3580 E-mail: bace@bttb.net	Bangladesh Association of Construction Industry (BACI) ABC House, 5th Floor, 8 Banani C/A Dhaka 1213 Tel: 880 2 888202, Fax: 880 2 884035
The World Bank office in Bangladesh 3A Paribagn, G.P.O. Box 97 Dhaka-1000, Bangladesh Tel: (880-2) 9669301-8, Fax: (880-2) 8613220 Www.worldbank-bangladesh.org	Asian Development Bank 2nd Floor BSL Office Complex Sheraton Hotel Annex 1, Minto Road, Ramna Dhaka 1000 Tel: 880 2 933 4017 to 22, Fax: 880 2 933 4012 Email adbbrm@mail.asiandevbank.org Web site: www.adb.org
International Finance Corporation IFC C/o World Bank 3A Paribagh Dhaka 1000 Tel: 880 2 861 1056 Fax: 880 2 861 7521 Email: Hahmad@ifc.org Web site: www.ifc.org	The Federation of Bangladesh Chambers of Commerce and Industry Standing committee on Oil, Gas and Natural Resources. Biman Bhabban, 4th floor 100 Motijheel C/A, Dhaka-1000, Bangladesh Tel: 880 29563641, Fax: 880-2-9551195 E-mail: resource@citechco.net or Spring@bdonline.com
Cosmos Energy Services Pvt Ltd. 69/1 New circular Rd. Makibagh, Dhaka-1217 Bangladesh Tel: +880-2-9330859, 411564, 8312024 E-mail: cosmos@citechco,net Web site: http://www.cosmosgroup.net	Power Development Board WAPDA Building 48 Motijheel Dhaka 1000 Tel: 8802 9562154 Fax: 880 2 956 3532
Bangladesh Oil, Gas, & Mineral Corp. (Petrobangla) Petrocenter Bhabhan , 3 Kawran Bazar C/A, Dhaka-1000 Tel: 880 2 814972, 880 2 814936 Fax: 880 2 811613	Bangladesh Petroleum Corporation (BPC) 1/D Agrabad C/A Chittagong Tel: 880 2 235 046/ 880 2 721 064 (Dhaka) Fax: 880 2 891 3375 (Dhaka)
Bangladesh Petroleum Exploration Company (BAPEX) Bapex House Building, Finance Corporation Bhaban Dhaka 1000 Fax: 880 2 956 1473	

Appendix 3

Foreign Engineers Resident in Bangladesh

Consulting Engineering firms	
Ewbank Preece (Mott MacDonald Power & Communications) House 47, Road 135 GPO Box 331 (A) Dhaka Tel: 880 2 602 130, 880 2 882 1947 Fax: 880 2 8823264	Mott MacDonald Intl. House # 122, Rod # 1, Block # F Banani, Dhaka - 1212 Tel: 880 2 608554, 880 2 8824026 Fax: 880 2 8823393
Halcrow Group Ltd. House 36, Road no 100, Gulshan Dhaka – 1212 Tel: 880 2 8824629, 880 2 8822690 Fax: 880 2 8823663	WSP International House 9, Road 11 Baridhara Dhaka Tel: 880 2 8811075, 880 2 8825761 Fax: 880 2 8823713
High Point Rendel House 28, Road 122 Gulshan, Dhaka Tel: 880 2 8117106 Fax: 880 2 8117106 E-mail: iakhan@citechco.net	Howard Humphries / Brown & Root CivilConsulting Engineers 47 Purana Paltan Dhaka - 1000 Tel: 880 2 9565353 Fax: 880 2 9552178
Kennedy & Donkin Ltd House 25, Road 14 Sector 3, Uttara Model Town Dhaka – 1230 Tel: 880 2 8916198, 880 28812033 Fax: 880 2 8916198	Project Management & Training Consultants Road N° 1, House N° 50, Block – I Banani, Dhaka Tel: 880 2 8826007, 880 2 8826146 Fax: 880 2 8826128
Mukta Dinwiddie Maclaren Architects Road 41, House 13 Gulshan R/A, Dhaka Tel: 880 2 9882048 Fax: 880 2 9885504	Carl Bro International A/S Granskoven – 8 DK – 2600 Glastrup Denmark Tel: 880 2 8826362
Kampsax Internationla A/S Project Office: Soil Testing Farmgate, Dhaka Tel: 880 2 8110600	Danish Hydraulic Institute (DHI) Road 114, House 25 Gulshan,Dhaka Tel: 880 2 9882880-1 Fax: 880 2 9882590
Hifab International AB LGED Headquarter Building (9th Floor) Agargaon, Sher-e-Bangla Nagar Dhaka Tel: 880 2 9116437 Fax: 880 2 813144	Fichner GmbH u Co. KG La 17, Merul Gulshan 2, Djaka Tel: 880 2 883560, 880 2 881287 Fax: 880 2 883560
DHV Devonconsultants House 5, Road 104 Gulshan, Dhaka Tel: Tel: 880 2 886558 Fax: 880 2 886305	Haskoning BV Consulting Engineers and Architects House 19, Road 10 Badridhara Model Town, Dhaka Tel: 880 2 881963 Fax: 880 2 883783
IWACO Bangladesh House 73(F), Road 3 Banani, Dhaka	BKH Consulting Engineers Road 14 (New), House 8-D Dhanmondi 1209

Tel: 880 2 288 4653 Fax: 880 2 288 2113	Tel: 880 2 883700 Fax: 880 2 883700
Contractors	
Deutag Bangladesh Plot CES -18, Road N° 123/125 Gulshan , Dhaka Tel: 880 2 98886104, fax: 880 2 988 7060 Email: deutag@dhaka.agni.com Web site: www.deutag.com	Brown & Root Bangladesh Ltd/ Halliburton House N° 11, Road N° 7 Baridhara, Dhaka 1212 Tel: 880 2 873 391 4 Fax: 880 2 988 6122
Greenland Engineers & Tractors Co. Ltd (GETCO) 26 Syamoll, Mirpur Road Dhaka Tel: 880 2 812 164/175 Fax: 880 2 713319 Email: getco102@citechco.net	Wartsila NSD Summit Centre (5th Floor) 18 Kawran Bazar C/A Dhaka 1215 Tel: 880 2 913 2437-8 Fax: 880 2 811 7901
Scancem Bangladesh Limited Iqbal Centre, 11th Floor 42 Kemal Ataturk Avenue Banani C/A Dhaka 1000 Tel: 880 2 871691 Fax: 880 2 872584	Asea Brown Bovari AB c/o Airlinks Limited 20 Outer Circular Road Rajarbag, Dhaka 1217 Tel: 880 2 404284

Appendix 4

Member Firms of the Bangladesh Association of Consulting Engineers (BACE) in January 2000

Associated Consulting Engineers (Bangladesh) Ltd 333, Segun Bagicha (1st floor) Dhaka-1000 Tel: 880-2-933 0694, 880 2 831 5941 Fax: 880-2-831 7773 E-mail aceban@bdcom.com	Bangladesh Consultants Ltd (BCL) House # 34, Road # 16 Dhanmondi RA, Dhaka-1209 Tel: 880-2-811 3437-8, 880 2 811 5023, Fax: 880-2-811 3580 E-mail bcl@citechco.net
Bangladesh Engineering & Technological Services Ltd House # 29, Road # 9A Dhanmondi RA, Dhaka-1209 Tel: 880-2-811 5849, 880 2 912 9951 Fax: 880-2-811 3100 E-mail betscorp@bdmail.net	Bangladesh Survey Organisation Ltd House # 34/A, Road # 4 Dhanmondi RA, Dhaka-1207 Tel:880-2-500602, 880 2 966 6049 Fax: 880-2-811 3580 E-mail
Desh-Upodesh Ltd House # 4, Road # 16 Dhanmondi RA, Dhaka-1209 Tel: 880-2-811 1236 Fax: 880-2-811 3502	Design Planning and Management Consultants Ltd House # 4/1, Road # 4, Dhanmondi RA, Dhaka-1205 Tel: 880-2-861 0567, 880 2 861 0116, Fax: 880-2-861 3043 Email: dhadpm@bangla.net sobhan@bangla.net
Design Associates Ltd House # 45, Road # 9A Dhanmondi RA, Dhaka-1209 Tel: 880-2-911 9249, 880 2 911 4993 Fax: 880-2-912 4504	Development Design Consultants Ltd 47, Mohakhali Commercial Area Dhaka-1212 Tel: 880 2 882 5699, 880 2 882 2980, Fax: 880-2-881 0337
Dexterous Consultants Ltd House # 86-87, Road # 9A Dhanmondi RA, Dhaka-1209 Tel: 880 2 811 9087, 880 2 912 1506, Fax: 880-2-911 2844	Engineering Consultants & Associates Ltd House # 154, Monipuripara Farmgate, Dhaka-1215 Tel: 880-2-811 6214 Fax: 880-2-811 9761 Rakha@bdmail.net
Engineering Science Ltd House # 3, Road # 15 Dhanmondi RA, Dhaka-1207 Tel: 880-2-912 8189, 880 2 811 3361, Fax: 880-2-912 8190 E-mail: esl@bangla.net	Engineers & Consultants Bangladesh Ltd House # 67, Road # 11/A Dhanmondi RA, Dhaka-1209 Tel: 880-2-911 4716, 880 2 861 2735 Fax: 880-2-811 0130 lneadtc@ncll.com

GhaniBangla Ltd House # 823 Road # 9/A Dhanmondi RA, Dhaka-1209 Tel: 880-2-811 7433 Fax: 880-2-912 1819 Email: ganibangla@bangla.net	K S Consultants Ltd 9/25, Sir Syed Road (3rd floor) Block-A Mohammadpur, Dhaka-1207
Khalid & Partners Ltd 6/7, Lalmatia, Block-B Dhaka-1207 Tel: 880-2-811 5047, 880 2 812 2162 Fax: 880-2-912 1052	Prokalpa Upodeshta Ltd House # 44, Road # 16 Dhanmondi RA, Dhaka-1209 Tel: 880-2-911 7689, 880 2 811 1486, Fax: 880-2-811 6653
Prosthapona Limited 1/10, Block-C, Lalmatia Dhaka-1207 Tel: 880-2-811 0389, 880 2 811 0390 Fax: 880-2-811 1771 E-mail: prsthpna@citechco.net	Puraloy Prokaushali Limited 49, Satmasjid Road (2nd floor) Dhanmondi RA, Dhaka Tel: 880-2-811 8714, 811 4129 Fax: 880-2-811 4129 E-mail: puraloy@citechco.net
SARM Associates Ltd Islam Chamber (10th floor) 125-A, Motijheel CA, Dhaka-1000 Tel: 880-2-956 6320-2, 955 3446 Fax: 880-2-956 6311 E-mail: sarm@dhaka.agni.c o	Shaheedullah and Associates Ltd 137 Jahanara Garden Green Road, Dhaka-1205 Tel: 880-2-911 7452 Fax: 880-2-812 2251 E-mail sareen@citechco.net
Shaheedullah and New Associates Ltd 137/C, Jahanara Garden Green Road, Dhaka-1205 Tel: 880-2-811 4168, Fax: 880-2-811 4168	Sheltech Consultants (Pvt) Ltd House # 59B Road # 16 Dhanmondi RA, Dhaka-1209 Tel :880-2-911 4478, 880 2 811 9451 Fax: 880-2-811 9451
The Planners & Engineers Ltd House # 62 Road # 9/A Dhanmondi RA, Dhaka-1209 Tel: 880-2-811 3395	United Technologies Ltd Mansur Villa 10 Siddheshwari Circular Road, Dhaka-1000 Tel: 880-2-955 4754 Fax: 880-2-956 2548
Worldwide Engineers Ltd House # 5/H, Road # 10/A, Banani, Dhaka-1213 Tel: 880-2-881 5164, 880 2 881 4958	Institution of Engineers, Bangladesh (IEB) Ramna, Dhaka-1000 Tel: 880-2-9567860

Appendix 5

Bangladesh Association of the Construction Industry (BACI) member firms

A & A Engineers Ltd., 4 Mymensingh rd Bangla Motor, Dhaka-1000 Tel: 880 2 505813, 508524	Associated Builders Corp. Ltd. ABC House (2nd floor) 8, Banani C/A, Kernal Ataturk Ave Dhaka-1213 Tel: 880 2 8824754-55
Bengal Dev. Corporation Ltd. 125/A Motijheel C/A Islam Chamber, Dhaka-1000 Tel: 9566323-5, 9566312, 9566328	Bangladesh Foundry & Engineering Works Ltd. House-6 (2nd floor) Road-14 (new) (29 old) Dhanmondi R/A, Dhaka-1209 Tel: 880 2 913973, 880 2 8118519
Concord Engineers & Cons. Ltd. Concord Centre 43 North C/A Gulshan, Dhaka-1212 Tel: 880 2 8814028, 880 2 8814030	Civil General Contractors Ltd. 9/9, Iqbal Road Mohammadpur Dhaka-1207 Tel: 8114756
GBB Ltd. 112, Airport Rd (2nd floor) Near Bejoy Sarani Crossing Dhaka-1215 Tel: 880 2 8118660	Geocon Ltd. Mirzapur Bhaban 69/ B-1, Malibagh, Rampura Dhaka-1219 Tel: 880 2 9344871, 880 2 8314587,
Joint Venture Engineers Ltd. Road- N° 2, House- N° 24, Sector N° 4 Uttra, Dhaka-1230 Tel: 880 2 8915038, 880 2 8917750	Akhter Hossain Ltd House-13, Road-12 (new) Dhanmondi R/ A, Dhaka-1209 Tel: 880 2 8110997, 880 2 8110131
National Development. Engineers Ltd. House-36, Road-115 Gulshan, Dhaka1 1212 Tel: 880 2 8810753, 8810410	National Civil Engineers Ltd. Karim Chamber 99, Motijheel C/A, Dhaka-1000 Tel: 9553141, 9553138
Nirman International Ltd. 199, Tejgaon I/A Dhaka-1208 Tel: 880 2 607890, 880 2 605957	New Generation & Construction Co. Ltd. Moni-shaha-Farhat Bhaban 21/2 Purana palton, Dhaka-1000 Tel: 880 2 9666352, 880 2 9568028
Project Builders Ltd. 692/B Baro Maghbazar Dhaka-1217 Tel: 880 2 8317037-38, 880 2 407226	Rana Construction Co Ltd. 5/2 Block-B, Gaznabi Road Mohammadpur, Dhaka-1207 Tel: 880 2 8111911, 880 2 8116678
Soiltech International Ltd House-98/A Road-9/A (new) Dhanmondi-R/A, Dhaka-1209 Tel: 880 2 9111994, 880 2 8113202	Siddique & Co Ltd 40/B Naya Palton Dhaka-1000 Tel: 880 2 8319796, 880 2 8314203
Technocon Ltd House-65-B, Road-27 Banani, Dhaka-1213 Tel: 880 2 8825075, 880 28828270	The Civil Engineers Ltd 53/1 New Elephant Road(4th floor), Dhaka-1205 Tel: 880 2 9662007, 880 2 500083,
The Engineers Ltd. 48, Dilkhusha C/A Dhaka-1000 Tel: 880 2 9564353, 880 2 9558849	The Mollah Trading Ltd. 2, New Skaton Road, Dhaka Dyeing (1st floor) Maghbazar, Dhaka-1217 Tel: 880 2 9337971, 880 2 9337972
The Engineer & Architects Ltd. 10 Toyenbee Circular Rd Dhaka-1000	Stoneville Engineers Ltd 4, Mymensing Road Bangla Motor,

Tel: 880 2 9565623, 880 2 9557149	Dhaka-1000 Tel: 880 2 501501
Shamsuddin Mia & Associates Ltd 64 Bejoy Nagar, Dhaka-1000 Tel: 880 2 405946, 880 2 405956 .	S M Drillers Ltd. 122/1 Kakrail GF Santinagar, Dhaka-1000 Tel: 880 2 8322014, 880 2 8319287
Monico Ltd. House-71/1, (1st floor) Road-7/A (new), Dhanmondi R/A Dhaka-1209 Tel: 880 2 8116543, 880 29110364	Masood & Co Ltd 20/C Monipuri para Sher-E-Bangla Nagor Dhaka-1215 Tel: 880 2 9130881, 880 2 9130883
The Concrete Builders Ltd. House-60/D, Road-131 Gulshan, Dhaka-1212 Tel: 880 2 8822811, 880 2 601014	Abdul Monem Ltd 6, Nowab Habibullah Rd Shahabagh, Dhaka-1000 Tel: 880 2 9669570, 880 2 8608079
Concord Progatti Consortium Ltd. 5/10, Lalmatia Housing Society, Block-D, Dhaka 1000 Tel: 880 2 9130178, 880 2 8116163	Basic Engineering Ltd. House-86, (1st floor) New Air Port Rd Banani, Dhaka-1213 Tel: 880 2 8825224, 880 2 8825225
Reza Constructions Ltd. 8/33-A Eastern Place 7th floor, Sonargaon Road Hatirpool, Dhaka-1000 Tel: 880 2 8619106,880 2 8610569	The Structural Engineers Ltd. 40, Mirpur road, New Market Dhaka-1205 Tel: 880 2 9661017, 880 2 500195
The Structural Engineers Ltd. 40, Mirpur Road, New Market Dhaka-1205 Tel: 880 2 9661017, 880 2 500195	Pubali Construction Ltd 39, Kawran Bazar, C/A Dhaka-1215 Tel: 8116035, 8114277
MEC Engineers & Constructions Ltd 500195House-36, Road-7, Sector-4 Uttara, Dhaka-1230 Tel: 880 2 8911798, 880 2 8918454	