

# Who's Behind China's Three Gorges Dam

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## List of International 3G Companies and Financiers

(updated August 2007)

Probe International has compiled the following list of international financiers and companies supplying equipment and services to **China Three Gorges Project Development Corporation**, a state-owned entity set up by the State Council to finance and build the Three Gorges dam. The corporation also holds the development rights for the upper Yangtze River (Jinsha).

All figures in U.S. dollars unless noted otherwise.

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## 1. International Companies

### BRAZIL

The 18,000MW Three Gorges project will be using turbines produced in Sao Paulo, Brazil by **Alstom Energia do Brasil** and **Voith Siemens do Brasil**.

**Alstom Energia do Brasil** is responsible for supplying six turbines. An additional two other turbines will be supplied by the French Alstom Hydro. The Alstom contract is reported to be worth US\$221M.

**Voith Seimens** is responsible for the supply of six units which are reported to be shipped to China by August 2001 and estimated to cost around US\$50M.

Besides the supply of turbines, Voith Seimens and Alstom will also be involved in technology transfer for the production of components in China.

(International Water Power & Dam Construction (IWP&DC), April 2001)

**GEC Alsthom Mecanica Pesada**, a unit of **GEC Alsthom** of France, is manufacturing some of the equipment for the **ABB-GEC Alsthom** consortium. (See FRANCE - GEC Alsthom)

J. Cotrin, Brazil's representative to the Brazil/Paraguay committee of the **Itaipu** power station, and F. Lyra, the Brazilian director of the **Itaipu** project's export group, participated in a 1986 World Bank-sponsored trip to the Three Gorges area. Lyra was a member of the World Bank's panel of experts that reviewed the Canadian feasibility study in 1988. (See USA - United States Bureau of Reclamation)

**Sade Vigesa**, a Brazilian manufacturer of power generation equipment, is manufacturing some of the equipment for the **GE Canada-Siemens-Voith Hydro** consortium that is supplying turbine-generator units to the Three Gorges project. (See CANADA - GE Canada)

### CANADA

**Acres International**, a Toronto-based engineering consulting firm, is one of five companies and utilities that formed a consortium, Canadian International Project Managers Yangtze Joint Venture (CYJV), to conduct a \$14-million feasibility study for China's Ministry of Water Resources and Electric Power, which gave the green light to the Three Gorges dam. The 3-year study was financed by the Canadian International Development Agency (CIDA) and completed in 1988.

Using the Access to Information Act, Probe International obtained the secret study and had it reviewed by independent experts who expressed outrage over its unsubstantiated conclusions.

"This is not engineering and science, merely an expert prostitution, paid for by Canadian taxpayers," said University of Manitoba professor Vaclav Smil, an expert on Chinese energy and environment issues.

Based on the independent experts' findings, Probe International filed complaints against the Canadian engineers who conducted the feasibility study, accusing them of professional negligence, incompetence and professional misconduct.

CIDA withdrew from the Three Gorges project in 1992, privately admitting that the project was too controversial. (See Margaret Barber and Gráinne Ryder, *Damming the Three Gorges: What Dam*

*Builders Don't Want You To Know*, 1993,

[http://www.probeinternational.org/catalog/content\\_fullstory.php?contentId=1610&cat\\_id=11](http://www.probeinternational.org/catalog/content_fullstory.php?contentId=1610&cat_id=11))

Acres International was acquired by Mississauga design firm Hatch in June 2005. Acres was convicted in a Lesotho court of bribing an official in connection with the aid-financed Lesotho Water Highlands Project. Acres was subsequently barred by the World Bank. (Business Information Group, "Acres International becomes Hatch-Acres," August 3, 2005; Reuters, "World Bank bars Canada's Acres for corruption, July 23, 2004,

<http://odiousdebts.org/odiousdebts/index.cfm?DSP=content&ContentID=10923>; Karen MacGregor and John Saunders, "Acres accused of still owing \$2-million in fines," *Globe and Mail*, July 19, 2004, <http://odiousdebts.org/odiousdebts/index.cfm?DSP=content&ContentID=10909>)

**AGRA Monenco**, with offices in Montreal and Oakville, is a subsidiary of **AGRA Industries** of Calgary.

**1994** – **AGRA Industries** announced that its subsidiary, **AGRA Monenco**, had signed a letter of intent with the Three Gorges dam's project manager, China Yangtze Three Gorges Project Development Corporation to provide a \$25-million project management system for the Three Gorges project. This included systems engineering, system layout, equipment installation, testing, system operation guidance, and user training. (Press release, **AGRA Industries**, G&M, July 26, 1994; July 25, 1995.)

**October 1995** – **AGRA Monenco** signed a Cdn \$17-million [US\$12.5-million] contract to provide systems management technology and training for Chinese managers of the Three Gorges dam construction. The contract included the expectation of additional work valued at Cdn \$17.5 million. (G&M, October 16, 1995.) The first phase of the 1995 contract – development of software, computer hardware, and training of 160 Chinese project managers in Canada and China – was expected to take two years to complete. Canada's Export Development Corporation (EDC) provided a \$12.5-million loan to finance **AGRA Monenco's** contract. The second phase included engineering and management support to ensure "development of a quality and cost effective project," according to Peter Mayers, a vice president of **AGRA**. (IWP&DC, January 1996.)

**1999** – **AGRA Monenco's** 1995 contract is completed. The company proposed to develop and install equipment to measure and monitor the dam's strength and hopes to win another contract in the next year or two. (Michael Jantzi Research Associates Inc., Toronto, Canada, March 1999.)

**British Columbia Hydro International** is a wholly owned subsidiary of **BC Hydro**, a provincially-owned electric utility, and is a member of the CYJV consortium that conducted the 1988 CIDA-financed Three Gorges feasibility study. (See Acres International)

**Dominion Bridge Inc.**, a Quebec-based company, announced in 1994 that it had signed a deal with Sichuan province and Chongqing city to build a \$64-million cement plant that will supply cement for construction of the Three Gorges dam. (BW, June 17, 1994.)

**Fuller-F.L. Smidth Canada**, a Scarborough-based subsidiary of the U.S.-based Fuller Company, won a contract in 1994 to supply process machinery, electrical equipment, and related services for construction of a cement plant outside the city of Chongqing. Cement from the plant will be used for construction of infrastructure in the Three Gorges region. Canada's Export Development Corporation provided the People's Construction Bank of China with an export credit loan of up to \$23.5 million for the project. (BW, June 17, 1994; EDC, communiqué, February 22, 1994.)

**GE Canada**, a Mississauga-based subsidiary of the U.S.-based General Electric, is a member of a consortium – including **Siemens** and **Voith** of Germany and **Sade Vigesa** of Brazil – supplying six

turbine-generator units to the Three Gorges project. **GE Canada's** hydro division, **GE Hydro**, is building three units at its plant in Lachine, Quebec. The contract, valued at US\$320 million, was awarded in August 1997. Canada's Export Development Corporation (EDC) is providing a US\$153 million loan to finance it.

**GE Hydro**, a member of GE Power Systems, bought **Kvaerner's** turbine business in 1999. (IWP&DC, July 1999; Probe International correspondence with Export Development Corporation, April 1999 and November 1997; CNW, September 2, 1997; IWP&DC, September 1997.)

**Hydro-Québec International** is a wholly owned subsidiary of **Hydro-Québec**, one of the largest electric utilities in North America. **Hydro-Québec International** signed a \$2.85-million [US\$1.9 million] contract in June 1999 with China Power Grid Development Company to supervise installation of a 900-kilometre transmission line from the Three Gorges dam to Changzhou, 80 kilometres northwest of Shanghai. (HRW, November 1999; FP, June 12, 1999.)

**Hydro-Québec International** is also a member of the CYJV consortium that conducted the now discredited Canadian feasibility study for the dam (See Acres International). In 1993, **Hydro-Québec** vice president Pierre Senecal, one of the authors of the feasibility study, stated at a 1993 conference in Shanghai that due to population increases and a lack of available land in the Three Gorges area "the study's recommendation that resettlement is feasible is not valid anymore."

**SNC-Lavalin Group** is Canada's largest engineering firm, based in Montreal. Prior to 1991, **SNC** and **Lavalin** were separate companies, both members of the CYJV consortium that conducted the 1988 CIDA-financed Three Gorges dam feasibility study. (See Acres International) The two companies merged in 1991 after **Lavalin** collapsed, unable to service its \$200-million debt. **SNC** purchased **Lavalin's** engineering assets for \$90 million and has since expanded its operations around the world. **SNC-Lavalin** hopes to win additional contracts related to the Three Gorges project. (G&M, March 12, 1999; CP, April 16, 1992.)

**Teshmont Consultants** is a Winnipeg-based company, specializing in transmission systems, owned by **Stanley Technology Group** and **AGRA Monenco**, both of Canada.

**Teshmont Consultants** signed a contract with China's State Power Grid Development Company in 1997 to conduct the first direct current high voltage transmission line study and design assignment for the Three Gorges dam. In 1998, **Teshmont Consultants** signed a contract with Yangtze Three Gorges Project Development Corporation to provide engineering consulting services. The contract was to assist with preparing international bidding documents for installing electrical equipment and transformer substations. The deal is worth less than \$100,000 [US\$ 66,111]. (DFAIT, communiqué, November 20, 1998; IWP&DC, March 1997; CD, March 13, 1997; Winnipeg Free Press, "Firm signs China deal, Winnipeg-based Teshmont Consultants Inc. signed another deal to work in China earlier this month," November 28, 1998.)

## FRANCE

**GEC-Alstom**, an Anglo-French electrical equipment and engineering company (also known as **Alstom**), is a member of a consortium, including **ABB** of Switzerland and **Kvaerner** of Norway, contracted in August 1997 to supply eight turbine-generator units to the Three Gorges project. **GEC-Alstom** component is initially reported to be worth US\$212M. Other **GEC-Alstom** units involved are GEC-Alstom Mecanica Pesada in Brazil and Tianjin GEC-Alstom Hydro in China.

The Paris-based **Alstom** and **ABB** of Switzerland merged their power generation divisions in 1999, in a joint venture known as **ABB Alstom Power**. In the 1980s, **GEC-Alstom** supplied equipment to the world's largest hydro dam, Itaipu (Brazil/Paraguay). (IWP&DC, July 1999; GEC-Alstom, press release, August 25, 1997; LE, August 25, 1997; CD, August 3, 1997; G&M, April 25, 1996;

Reuters, June 9, 1995; CD, January 23, 1995.)

**May 2000 – Alstom Power** signed a \$12.76-million contract on May 24, 2000 to supply electrical system equipment to the left bank power station of the Three Gorges project. **Voith Siemens Hydro Power Generation** of Germany signed a contract on the same day. The Chinese subcontractors are Harbin Electric Machine Company from Heilongjiang province and Dongfang Electric Machine Company from Sichuan province. (CD, May 25, 2000.)

**April 2001 – Alstom Hydro (France)** is reported to be responsible for supplying two turbines with an additional six turbines supplied by **Alstom Energia do Brasil**. The Alstom contract is now reported to be worth US\$221M. Besides the supply of turbines, Voith Seimens and Alstom will also be involved in technology transfer for the production of components in China. (IWP&DC, April 2001)

**March 2004 – Alstom** won a bid to supply four of the 12 generating units for the dam's right-bank powerhouse. Alstom said the contract to build four 700 MW turbines and their associated generators is worth more than 163 million euros (US\$198.5 million). The equipment is to be manufactured at Alstom's facilities in France, Switzerland, Brazil and China, with delivery of the main components scheduled for 2006 and 2007 (Alstom press release, March 31, 2004). The entire 12-unit contract for the right-bank powerhouse is worth 4.54 billion yuan, or US\$546 million, with two Chinese firms – Harbin Electric Machinery Co. Ltd. and Dongfang Electric Machinery Co. Ltd. – winning bids to supply four units each. The first four of the right-bank generators are expected to be operational in 2007 (CD, March 29, 2004)

**Alstom** agreed to set up a joint venture with the **Beijing Capital Electromechanical Holding Company** and its subordinate **Beijing Heavy Electrical Machinery Plant** to manufacture 600 MW steam turbines and generators. (Xinhua, July 27, 2004.)

**Alstom** employs 25,000 people in France, has been close to bankruptcy for several years now. As of 2003, the company was struggling to repair and redesign flawed power turbines developed by a unit of **ABB** that it acquired in 2000. (Zurich-based **ABB** had sold 80 of the \$180 million machines and installed 76 of them when cracks appeared on the turbine blades and other parts at various stages of operation, from 50 hours of use to a few thousand. By 2004, Alstom reported a net loss of 370 million euros (\$479 million) for the period ending September 30. Now undergoing restructuring, Alstom plans to cut 8,400 jobs in France and double its business in China. (Bloomberg, Nov 17, 2004.)

**Electricité de France**, the world's largest state-owned utility, in partnership with the **French Technical Supervision Bureau (BV)**, won a US\$5.8-million contract to supervise manufacturing of the dam's generator sets. (HRW, November 1999; CD, July 3, 1999.)

**French Technical Supervision Bureau (BV)**. (See Electricité de France)

**Potain**, the world's leading manufacturer of tower cranes (and a member of the Paris-based construction industry giant, **Legris Industries Group** since 1989), supplied two of the world's largest cranes to the Three Gorges project in 1998. (IWP&DC, July 1999; IWP&DC, May 1998; Reuters, November 1997.)

## GERMANY

**Baur** supplied construction equipment for cofferdam construction. (IWP&DC, July 1999.)

**Krupp Fördertechnik**, a construction engineering company, was awarded a contract to supply

construction equipment to the Three Gorges project in 1994. (IWP&DC, July 1999; IPS, September, 1994.)

**Mannesmann Demag**, a construction equipment and engineering company, was awarded a contract to supply construction equipment to the Three Gorges project in 1994. (IWP&DC, July 1999; IPS, September, 1994.)

**Siemens**, a Munich-based electrical equipment and engineering company, is a member of an international consortium, including **GE Canada** and **Voith Hydro**, that won a US\$320-million contract to supply six turbine-generator units to the Three Gorges project. **Siemens** and **Voith Hydro** are producing some of the equipment in partnership with **Sade Viges** of Brazil.

Germany's export credit agency, KfW (Kreditanstalt für Wiederaufbau), and three commercial banks, DG (Deutsche Genossenschaftsbank) Bank, Dresdner Bank, and Commerzbank, provided a US\$271-million loan for the purchase of German turbine-generator units. German export credit agency, Hermes Kreditversicherungs AG, provided an export credit guarantee to **Siemens** and **Voith**. (Bloomberg and Reuters, September 24, 1997.)

**April 1999** – **Siemens** won a second Three Gorges contract to provide high voltage transmission equipment for delivering power from the Three Gorges dam to the coastal region. For US\$80 million, Siemens will provide 15 transformers for a power converter station in Changzhou, 80 kilometres northwest of Shanghai. German export credit agency, KfW, will provide the bulk of the funding, with the remainder coming from other German banks: DG (Deutsche Genossenschaftsbank) Bank, Dresdner Bank, and Commerzbank. German export credit agency, Hermes Kreditversicherungs AG, also provided an export credit guarantee of US\$52.9 million to cover financial risks.

**Siemens'** Chinese partners are Tianwei Group from Baoding, Hebei province and Shenyang Transformer Manufacturing Company.

**September 1999** – Germany's **ABB** and **Siemens AG** won a \$250 million to \$300 million contract to provide 39 gas-insulated switchgears and 15 transformers in September 1999. (Dow Jones International News, "German Cos win contract at China Three Gorges Dam-Nikkei", September 2, 1999)

**Siemens** and **Voith Hydro** merged their hydropower divisions in 1999. (AFR, November 2, 1999; DT, November 1, 1999; CD, September 15, 1999; CD, August 16, 1999; IWP&DC, May 1999; LE, August 25, 1997; G&M, April 24, 1996; Xinhua, January 24, 1996.)

**Voith Siemens Hydro Power Generation** signed a \$12.79-million contract on May 24, 2000 to supply electrical system equipment to the left bank power station of the Three Gorges dam. **Alstom Power** of France was awarded a related contract on the same day. The Chinese subcontractors are Harbin Electric Machine Company from Heilongjiang province and Dongfang Electric Machine Company from Sichuan province. (CD, May 25, 2000.)

**Voith Hydro**, a Heidenheim-based electrical equipment and engineering company, is a member of an international consortium, including **Siemens** and **GE Hydro**, supplying turbine-generator units to the Three Gorges project. (See **Siemens** of Germany.)

**Voith Hydro** and **Siemens** merged their hydropower divisions in 1999.

**Voith Siemens Hydro Power Generation** signed a \$12.79-million contract on May 24, 2000 to supply electrical system equipment to the left bank power station of the Three Gorges dam. **Alstom**

**Power** of France was awarded a related contract on the same day. The Chinese subcontractors are Harbin Electric Machine Company from Heilongjiang province and Dongfang Electric Machine Company from Sichuan province. (CD, May 25, 2000.)

**Siemens** lost to rival **ABB** in a bid for linking China's massive Three Gorges hydroelectric project with Shanghai. **Siemens** plans to bid soon for a government contract, expected to be valued at about 370 million euros, to build a transmission network connecting southwestern Guizhou province to Guangdong on China's coast. (Jeff Meyer, "Siemens forecasts growth in China for power unit," Wall Street Journal Europe," Aug 19, 2004.)

**Siemens** won a contract from the China Southern Power Grid Company in June 2007 to build a 5,000MW, 800kV high-voltage transmission system from Yunnan to Guangdong. The system is to go online by mid-2010. The contract is worth over 300 million euros [US\$409 million]. (Industry Updates, "Siemens to build high voltage transmission system in China", June 12, 2007, [www.chinadaily.com.cn](http://www.chinadaily.com.cn))

## ITALY

**Cifa** is supplying one of four major concrete batching plants for the Three Gorges project. (IWP&DC, July 1999.)

**ENEL**, the state utility responsible for electricity generation, conducted a study on the second stage coffer dam for the Three Gorges project from 1988 to 1993. The study was financed by an Italian government grant. (Probe International correspondence with Michael Wilson, Minister for International Trade, January 27, 1993.)

## JAPAN

**Mitsubishi**, a Tokyo-based manufacturer of power generating and construction equipment, is supplying construction equipment to the Three Gorges project. (IWP&DC, July 1999.)

**NKK Corporation**, a steel manufacturer, has won three contracts, two in 1998, one in 1999, to supply steel plates to the Chinese state-owned Fuchunjiang Hydropower Equipment Works, a manufacturer based in Zhejiang province, for the Three Gorges project. (YS, August 17, 1999; IWP&DC, August 1999; IWP&DC, March 1999; IWP&DC, November 1998.)

## NORWAY

**Kvaerner Energy**, an engineering equipment and services company, is a member of an international consortium, including **GEC-Alsthom** and **ABB**, supplying eight turbine-generator units to the Three Gorges project.

**Kvaerner Energy** sold its hydropower business to **GE Hydro** in 1999. (See GE Canada)

## ROMANIA

Romania's **Kvaerner IMGB** group will soon deliver the first of three turbines it manufactured for the Three Gorges Dam. **IMGB Bucharest Heavy Machinery Plant** was acquired by the Norwegian Kvaerner company. (Rompres, (Romanian National News Agency) "Kvaerner IMGB group delivers a first turbine for China's Three Gorges Dam," October 17, 2000, [www.rompres.ro](http://www.rompres.ro))

## SCOTLAND

**Terex Equipment**, a manufacturer of dump trucks and earthmoving equipment, has supplied 160

vehicles to the Three Gorges and Xiaolangdi dam projects. (GH, May 29, 1995.)

## SWEDEN

**National Energy Administration** conducted a study of the ship locks from 1985 to 1987 which was financed by the Swedish government. (Probe International correspondence with Michael Wilson, Minister for International Trade, January 27, 1993.)

In 2002 **IFS** announced an agreement with the Three Gorges Project Corporation for the implementation of IFS Applications. The contract is valued at RMB 8 million (approximately USD 1 million). **IFS** was selected to provide a total plant management solution, including maintenance, financials and human resources. The system went live at the end of 2003.

**IFS** (Industrial and Financial Systems) is a global business software company listed on the Stockholm Stock Exchange (XSSE:IFS). (Dow Jones International News, IFS Press Release, April 3, 2002; IFS, "China's Three Gorges Hydropower Plant goes live with IFS Applications", IFS Press Release, January 19, 2004, [http://www.ifsworld.com/news\\_events/press\\_release\\_archive/2004-01-19\\_three\\_gorges.asp?prcat=2066](http://www.ifsworld.com/news_events/press_release_archive/2004-01-19_three_gorges.asp?prcat=2066))

See also <http://www.ifsworld.com>, [http://www.ifsworld.com/customers/three\\_gorges.asp](http://www.ifsworld.com/customers/three_gorges.asp)

## SWITZERLAND

**ABB (Asea Brown Boveri)**, a Swiss-based electrical equipment and engineering company, has won three contracts to supply equipment to the Three Gorges project as follows:

**August 1997** – US\$400 million contract to supply eight 710 MW turbine-generator units to the project, together with **Alstom** and **Kvaerner**. The Swiss export credit agency, Bundesrat Exportrisikogarantie, provided a US\$143.1 million loan export credit guarantee in 1997 to finance the purchase of **ABB** equipment. (ENS, November 20, 1997.)

**April 1999** – US\$340 million contract to supply two converter stations at each end of a 850-kilometre transmission line linking the Three Gorges dam with Shanghai and surrounding areas. **ABB** arranged financing with the Swedish export credit agency, Svensk Exportkredit, Société Générale of France, Australia-New Zealand Banking Group, and Credit Agricole Indosuez.

**September 1999** – US\$112 million contract to deliver high voltage switchgear equipment to an electrical substation at the Three Gorges dam site. About 25 percent of the equipment will be produced in China in cooperation with **Shenyang** and **Xi'an High Voltage Switchgear plants**. The Swiss export credit agency, ERG (Geschäftsstelle für die Exportrisikogarantie) is providing an export credit guarantee for the purchase of **ABB** equipment.

**ABB** and **Alstom** of France merged their power generation divisions in 1999, now known as **ABB Alstom Power**. (CD, September 15, 1999; BW, September 14, 1999; IWP&DC, May 1999.)

**Asea Brown Boveri Group (ABB)** announced it won a contract worth US\$390 million to build a 1,100-kilometre power link from the **Three Gorges Project** to Shanghai. To be built in cooperation with Chinese manufacturers, the transmission project is expected to be completed in three years. The contract was awarded by the **State Grid Corporation of China**. **ABB** completed a US\$900M, 1040km, 3000MW HVDC link between the Three Gorges project and Shanghai in January 2007. (International Water Power & Dam Construction, "Three Gorges transmission link completed", January 5, 2007, <http://www.waterpowermagazine.com/story.asp?storyCode=2041234>; Interfax, "ABB to link Shanghai with Three Gorges project," June 18, 2004; Nordic Business Report, "ABB

wins US\$390m power link contract in China," June 14, 2004.)

**ABB's** High-Voltage Direct Current (HVDC) link between the Three Gorges Project and Changzhou was completed in 2003. A second link, to Guangdong, was completed in February 2004. The Three Gorges Project was expected to transmit 8.16 billion kWh to Guangdong in 2004. (ABB Editorial Services, "Three Gorges: high-voltage system up and running," August 15, 2003, <http://www.abb.com/cawp/seitp202/B81563CB21813EA1C1256D82004546FB.aspx>; ABB, "Successful completion of the Three Gorges - Guangdong project," February 7, 2007, <http://www.abb.com/cawp/gad02181/c4b7f1fdb5c7f548c1256eb30022ab5e.aspx>; BBC Monitoring Asia Pacific, "China's Three Gorges power station begins to supply electricity to Guangdong," February 9, 2004)

In October 2004 **ABB** announced it had won a US\$60 million contract to produce one set of 500-kV gas insulated switchgear (GIS) and 12 sets of transformers for the right bank of the Three Gorges Project. The 12 sets of transformers would be produced by **ABB's Chongqing Transformer Company**, its largest single investment in China.

The **China Three Gorges Project Corp** awarded contracts for the 500-kV GIS to the **Xi'an High Voltage Switchgear Company** and the **New Northeast (Shenyang) Electric High Voltage Switchgear Company**. Both of these companies awarded subcontracts to **ABB** for parts to be delivered in the first half of 2006.

**ABB's** total contractual value for the Three Gorges Project is over US\$1.3 billion for the supply of transformers, GIS, automation control systems and high voltage direct current (HVDC) links between the Three Gorges Dam and eastern China. (Business Daily Update, "ABB wins US\$60m contract for Three Gorges Project", October 25, 2004; Interfax, "ABB secures USD 60 mln worth of contracts at Three Gorges," Nov 1, 2004; ABB Press Release, "ABB wins \$60 million orders for Three Gorges power plant," Oct 18, 2004, [www.abb.com/cawp/seitp202/4ED8118D6F17FF80C1256F31001F9DE7.aspx](http://www.abb.com/cawp/seitp202/4ED8118D6F17FF80C1256F31001F9DE7.aspx))

In October 2004, **ABB** announced a plan to hire 5,000 new employees and double its orders and revenue in China to 4 billion dollars by the year 2008. (China Daily, "International giant eyes China's power market," Oct 27, 2004, [http://www.probeinternational.org/catalog/content\\_fullstory.php?contentId=4337](http://www.probeinternational.org/catalog/content_fullstory.php?contentId=4337))

## UNITED KINGDOM

**Parker Hannifin** of the UK is delivering over US\$1M in hydraulics, condition monitoring units, hoses and connectors for the construction phase of the Three Gorges dam. By 2003, the first few generators will be up and running, and permanent ship locks powered by **Parker** will be in use. Parker is also supplying complete drive and control systems for dredging vessels working on the excavation of the Yangtze river to ensure safe navigation. (IWP&DC, March 2002)

## UNITED STATES

**Atkinson Construction** won a contract in 1999 to provide consulting services for the installation, operation, maintenance, and management of imported large equipment used in the Three Gorges dam construction. When major problems occur, **Atkinson** inspectors are required to submit reports directly to the State Council's Three Gorges Project Committee, which is headed by Chinese Premier Zhu Rongji. The decision to hire international supervisors came after Premier Zhu raised concerns about corruption and shoddy construction practices, following his site inspection in December 1998. (HRW, November 1999; IWP&DC October 1999; BBC, August 31, 1999; GDN, May 25, 1999; IWP&DC, May 1999; AP, April 19, 1999.)

**Bechtel Enterprises**, the largest engineering company in the United States, provided consulting services to the Three Gorges project in the 1980s. In October 1994, Joe Ferrigno, **Bechtel's** managing director of Asian and Pacific operations, was quoted in *Far Eastern Economic Review*, saying that **Bechtel Enterprises** was "not at all likely" to pursue Three Gorges contracts because the dam "is extremely controversial from an environmental perspective."

**Caterpillar**, an Illinois-based construction equipment company, sold \$15 million worth of equipment to the Yangtze Three Gorges Project Development Corporation in 1996.

**Caterpillar**, **Rotec Industries**, and **U.S. Voith Hydro** had applied for loans from the United States Export-Import Bank to support their bids for Three Gorges contracts, but they were turned down in 1996. Following an intensive campaign led by Probe International and U.S. environmental groups, the U.S. Export-Import bank announced in May 1996 that it could not support U.S. companies seeking contracts to build the dam because "the information received, though voluminous, fails to establish the project's consistency with the bank's environmental guidelines." The Three Gorges dam became the first serious test of the bank's new guidelines, introduced by Congress in 1992, which required the bank to conduct environmental reviews of foreign projects that sought its backing. Ex-Im asked the National Security Council to convene a panel to consider the merits of U.S. participation. In September 1995, the NSC delivered its recommendation that the U.S. government should not "align itself with a project that raises environmental and human rights concerns on the scale of the Three Gorges." Martin Kamarck, President and Chairman of the United States Export-Import Bank, toned its decision down, noting only that there was not enough information and for the bank to reconsider its decision, it "would need further evidence that these issues will be adequately addressed, resolved and/or mitigated by the project's sponsors." Kamarck noted at the time that several U.S. companies had sold \$60 to \$100 million worth of equipment and services to the project without Ex-Im Bank support. (*Fortune*, October 11, 1997; IWP&DC, July 1999; Statement of the Board of Directors of the Export-Import Bank of the United States, Washington DC, May 30, 1996; CD, October 31, 1994.)

**CS Johnson** is supplying one of four major concrete batching plants to the Three Gorges project. (IWP&DC, July 1999; Reuter, November 1997.)

**ExxonMobil's** affiliate in China won a contract to supply specialized lubricants for the first 14 hydro-turbine units at the Three Gorges Dam IN 2002. **ExxonMobil** was previously awarded the lubricant contract for the 248 sluice gates and 116 hoists deployed by the dam's hydraulic ship-lock systems and is a major supplier of lubricants for most of the construction-related equipment and vehicles used in the project. (China Chemical Reporter, "ExxonMobil awarded lubricant contract at China's Three Gorges Dam", December 6, 2002, [http://findarticles.com/p/articles/mi\\_hb048/is\\_200212/ai\\_hibm1G195447203](http://findarticles.com/p/articles/mi_hb048/is_200212/ai_hibm1G195447203))

In 2005 **General Electric** won a contract from the **Harbin Electric Machinery Company** to provide twelve sets of turbine governors for the Three Gorges right bank power station. (Power in Asia, "GE secures Three Gorges deal", April 28, 2005)

**GE** also received a contract valued at approximately US\$37 million to supply three turbines, additional equipment and services for a major hydroelectric power project. The 3,300MW Pubugou Hydropower Station on the Dadu River in Sichuan province is the fifth largest hydroelectric station in China and the biggest on-going project in Sichuan, according to GE. (Power in Asia, Sep 30, 2004.)

**Harza Engineering**, a Chicago-based company, provided consulting services to the Three Gorges project in 1996. In 1999, **Harza Engineering** won a contract to supervise construction of the Three Gorges dam. The company is required to report any major problems arising at the construction site to the State Council's Three Gorges Project construction committee, headed by China's Premier Zhu

Rongji. The hiring of international supervisors comes after Premier Zhu raised concerns about corruption and shoddy construction practices following his site inspection in December 1998. (IWP&DC, October 1999; IWP&DC, May 1999; AP, April 19, 1999; SNS, January 1996.)

**ITT Industries**, one of the world's largest pump manufacturing groups, announced on Nov. 8, 2000, that its Chinese subsidiary, Nanjing Goulds Pump Co., received a contract worth US\$604,595 to provide 48 deep-well pumps for the five permanent ship locks to be built in the Yichang section of the Yangtze River in Hubei. (*ChinaOnline*, November 10, 2000.)

**Management Resources International**, a consulting company, participated in a World Bank-sponsored trip to the Three Gorges area in 1986. D. Graybill of **Management Resources International** went on the trip and was also a member of the World Bank panel of experts that reviewed the Canadian feasibility study in 1988. (See United States Bureau of Reclamation)

**Rotec Industries**, an Illinois-based engineering company, has sold cranes and conveyer belts worth about \$50 million and another \$30 million worth of concrete equipment to the Three Gorges dam's developers. (*Fortune*, October 11, 1997; *ENR*, March 31, 1997.)

**September 2000** - A conveyor belt from Rotec Industrial Inc.'s tower crane fell more than 60 feet onto a group of Chinese workers at the Three Gorges Dam project, killing three and injuring 30. The accident occurred on the night of Sunday September 3, 2000. Robert Oury, Rotec's chief executive officer, said the machine involved in the accident is one of four combination crane and conveyor belt towers working on the dam, purchased from Rotec for more than \$8 million. It has been on the site for 14 months, conveying and pouring concrete almost around the clock, he said in a telephone interview. Oury said that after a serious problem with a bearing, Chinese technicians took part of the machine to the ground to repair it. As they sought to reassemble the conveyor belt that rises up the structure, parts of it fell to the ground, hitting the workers, he said. (*Washington Post*, September 6, 2000.)

**October 2000** - Ke Changli is suing Rotec Corporation for US\$420,000 for supplying the concrete conveyor Ke Changli claims was responsible for her husband's death late last year at the dam site. Ke Changli received US\$7,250 in compensation after her husband, Ke Shanlin, a Three Gorges machine operator, died on Nov. 19, 1999, while using the Rotec conveyor's lift system. (*Three Gorges Probe*, October 24, 2000)

**United States Army Corps of Engineers**, a federal dam-building agency, was part of a **U.S. Three Gorges Working Group**, a consortium of U.S. dam building companies and financiers, which was formed in the 1980s to participate in China's Three Gorges project. In 1985, the group reviewed technical aspects of the 180-metre and 150-metre schemes proposed by China's Ministry of Water Resources and Electric Power and recommended that: 1) social and environmental impact studies be conducted; 2) a cost-benefit analysis acceptable to potential financiers be conducted; and 3) the dam be built as a joint venture between the Chinese government and the **U.S. Three Gorges Working Group**, with possible funding from the World Bank, the Asian Development Bank, Sweden, Japan, and Canada. (*Damming the Three Gorges: What Dam Builders Don't Want You To Know*, 1993.)

In 1986, the **Army Corps** participated in a World Bank-sponsored trip to the Three Gorges area along with other U.S. experts, and as a member of the World Bank's panel of experts that reviewed the Canadian Three Gorges feasibility study in 1988. (See United States Bureau of Reclamation)

The U.S. **Three Gorges Working Group** included representatives from the **U.S. Bureau of Reclamation**, the **U.S. Army Corps of Engineers**, the **American Consulting Engineers Council**, **Guy F. Atkinson Company**, **Bechtel Civil and Mineral Inc.**, **Coopers and Lybrand**, **Merrill**

**Lynch Capital Markets, Morgan Bank, Morrison-Knudsen Inc., and Stone and Webster Engineering Corporation.** (See FINANCIERS)

**United States Bureau of Reclamation**, a federal dam-building agency, has been involved with the planning of the Three Gorges dam since about 1940, and was a member of the U.S. Three Gorges Working Group (see **U.S. Army Corps of Engineers**).

In 1984, the **Bureau** signed a 3-year agreement with China's Ministry of Water Resources and Electric Power to provide technical assistance and training on the final planning and design phases, and construction of the Three Gorges project. (United States Department of the Interior, **Bureau of Reclamation**, International Affairs Program Summary, September 1991.)

In 1986, J.F. Kennedy an American sedimentation expert with the **United States Bureau of Reclamation**, went on a World Bank-sponsored trip to the Three Gorges area. Upon returning, he and other experts submitted a report to the Chinese and U.S. governments, expressing many doubts and concerns centred on the following issues: geology, sedimentation, flood control, navigation, hydraulic engineering and construction, electric systems, economic analysis, and environmental issues. Kennedy was also a member of the **World Bank's** panel of experts that reviewed the Canadian feasibility study for the dam in 1988. (Dai Qing, *Yangtze! Yangtze!*, 1993.)

In 1992, the **U.S. Bureau of Reclamation** signed a second agreement with China's Ministry of Water Resources to provide technical assistance to the Three Gorges project, related to data management, computer software, drill-hole survey technology, and dam safety monitoring.

In June 1993, the **Bureau** officially terminated its Three Gorges contract. A **Bureau of Reclamation** press release stated that "further involvement in this project is not consistent with **Reclamation's** mission. **Reclamation's** current priorities are water resource management and environmental restoration, not large dam projects." **Bureau of Reclamation** spokesperson Lisa Guide explained: "It is now generally known that large-scale, water retention dam projects are not environmentally or economically feasible. We wouldn't support such a project in the U.S. now so it would be incongruous for us to support such a project like this in another country." (Telephone interview with Patricia Adams, Probe International, September 23, 1993.)

The **Bureau's** decision to withdraw came in mid-September 1993, at the time seven U.S. environmental groups filed a lawsuit against the **Bureau**, arguing that the government agency was violating the U.S. Endangered Species Act, because the Three Gorges dam "will threaten the continued existence of several species that the U.S. lists as endangered." (EPD, November 2, 1993; **U.S. Bureau of Reclamation**, Department of the Interior, news release, September 16, 1993.)

## 2. World Bank

**World Bank**, a multilateral lending institution and leading financier of the Chinese state, approved a US\$200 million loan to Chongqing municipality in June 2000 for a US\$500 million project (completion expected December 2006) that includes wastewater treatment facilities and solid waste collection services in areas impacted by the Three Gorges dam.

Chongqing, an industrial centre, is located at the Three Gorges dam reservoir's upper end and dumps almost all its industrial wastewater and sewage untreated into the Yangtze river. Almost all urban wastewater flows untreated in the the Yangtze and its tributaries through 200 open discharge points, mixing untreated sewage and industrial wastes with drinking water supplies

If the Three Gorges dam is completed, scientists predict it will slow the Yangtze river's flow, backing up water and concentrating sewage and other pollutants in its 600 kilometre-long reservoir. The Canadian proponents of the Three Gorges dam left the cost of controlling increased pollution in the dam reservoir and water supply services to resettled communities out of the official project budget.

The project includes new water supply and treatment facilities for new towns associated with the Three Gorges Project in the Fuling area and to replace existing water supply infrastructure that will be flooded by the Three Gorges reservoir in areas including Wanzhou, 320 kilometres downstream of Chongqing.

(Chongqing Urban Environment Project Last updated July 1, 2002; China-Chongqing Urban Environment Project, Project Information Document, World Bank, March 17, 2000; China-Chongqing Urban Environment Project Environmental Assessment Summary, December 14, 1999; IWP&DC, January 2000; Three Gorges Probe Issue 12; Three Gorges Probe Press Advisory, November 1999; Monthly Operational Summary of Bank and IDA Proposed Projects, World Bank, May 11, 1998; CYJV, *Three Gorges Water Control Project Feasibility Study*, Environment, Volume 8, March 1988.)

The **World Bank** was part of a steering committee formed in 1986 to supervise the CIDA-financed feasibility study, which included the Canadian International Development Agency (CIDA) and China's Ministry of Water Resources and Electric Power. (See Acres International) The **World Bank** also set up an international panel of experts whose role, according to panel member and U.S. sediment expert John Kennedy, was "to evaluate the study and to assure that it met very high standards of international practice for these kinds of studies." On resettlement, the bank's panel concluded that "feasibility is not yet clearly demonstrated. Unresolved issues pertaining to land availability, job creation and host population, and other issues need further clarification. . ." (Canadian International Development Agency Briefing (transcript), Ottawa, February 14, 1989. CYJV, *Three Gorges Water Control Project Feasibility Study*, Volume 1, Appendix A, August 1988.)

After reviewing the Canadian feasibility study, the **World Bank** concluded: "The [Canadian] feasibility report contains evidence to indicate that increasing the NPL from 160 m to 170 m and higher would not be an economically viable proposition." The Chinese government nevertheless approved a 175-metre NPL for the dam in 1992. (Dai Qing, *Yangtze! Yangtze!*, 1993; CYJV, *Three Gorges Water Control Project Feasibility Study*, Volume 1, Appendix A, August 1988.)

### 3. Export Credit Agencies

<b>BRAZIL</b>	<b>Banco Nacional de Desenvolvimento Economico e Social (BNDES)</b>	\$202 million loan to finance the purchase of turbine-generator sets from GEC-Alsthom consortium.
<b>CANADA</b>	<b>Export Development Corporation</b>	<p>\$23.5 million loan to the People's Construction Bank of China for <b>Fuller-F.L. Smidth Canada's</b> contract (1994).</p> <p>\$25 million loan to finance <b>AGRA Monenco's</b> contract (1995).</p> <p>\$153 million loan to finance <b>GE Canada's</b> contract (1997).</p>
<b>FRANCE</b>	<p><b>Banque Nationale de Paris</b> (&amp; Banque de Paris et des Pays Bas, Midland Bank SA)</p> <p><b>Société Générale of France</b></p>	<p>\$94.815 million loan to finance <b>GEC-Alsthom</b> contract (1997).</p> <p>See SWEDEN, under part 2 ("International Companies").</p>
<b>GERMANY</b>	<p><b>Kreditanstalt für Wiederaufbau (KfW)</b> (and three commercial banks, <b>Deutsche Genossenschaftsbank, Dresdner Bank, and Commerzbank</b>)</p> <p><b>Hermes Kreditversicherungs AG</b></p>	<p>\$271-million loan for the purchase of <b>Siemens</b> and <b>Voith</b> turbine-generator units (1997).</p> <p>\$40 million export credit guarantee to <b>Siemens</b> and <b>Voith</b>.(1997).</p> <p>\$80 million loan for the purchase of <b>Siemens</b> transformer equipment (1999).</p> <p>\$52.9 million export credit guarantee (1999).</p>
<b>JAPAN</b>	<b>Export Import Bank of Japan (JEXIM)</b> and <b>Ministry of International Trade and Industry (MITI)</b>	Offered a line of credit for Japanese firms bidding on contracts for electrical generating equipment (1996).
<b>SWEDEN</b>	<b>Svensk Exportkredit</b> (and <b>Société Générale of France, Australia-New Zealand Banking Group, and Credit Agricole Indosuez</b> )	\$351 million loan for the purchase of <b>ABB</b> equipment (1999).
<b>SWITZERLAND</b>	<p><b>Bundesrat Exportrisikogarantie</b></p> <p><b>Geschäftsstelle für die Exportrisikogarantie (ERG)</b></p>	<p>\$143.1 million export credit guarantee for the purchase of <b>ABB</b> turbine-generator sets (1997).</p> <p>Export credit guarantee for the purchase of <b>ABB</b> equipment (1999).</p>

#### 4. Financiers

##### Buyers and Underwriters of China's State Development Bank Bonds

China's **State Development Bank** made its first commitment to the Three Gorges project in 1996 with a ten-year \$3.6 billion loan, making the dam the **SDB's** number one debtor. According to China Daily of April 7, 1998: "Huge amounts of loan money from the [**SDB**] have propped up the development of the country's key electric power projects." Since its establishment in 1994, the bank has injected about \$15 billion into the construction of hydroelectric, nuclear, and thermal power stations, including the Three Gorges project, the World Bank-financed Ertan dam, and the Qinshan Nuclear Power Plant. **SDB** continues to favour large power plants, making it one of the most important sources of funds for China's power industry.

The **SDB** receives its capital and funding from the government. It also issues debentures to domestic financial institutions, construction bonds in China, and bonds in international capital markets; and it borrows money from foreign governments, international financial institutions, and foreign commercial banks. Sovereign guarantees make these debt instruments relatively risk free.

The promise of sovereign guarantees was the inducement the private sector in the industrialized countries needed to invest in Three Gorges. In 1996, the SDB launched its first international bond offering, ¥30 billion (\$269 million) underwritten by **Nomura Securities** and **IBJ Securities of Japan**. When a Japanese critic of the Three Gorges dam discovered that the bond issue violated Japanese security laws because it failed to provide clear information on the use and risks of the bonds, **Nomura** canceled a second bond issue for 1998. (See International Journal article by Probe International, 1998, [http://www.probeinternational.org/catalog/content\\_fullstory.php?contentId=300&cat\\_id=24](http://www.probeinternational.org/catalog/content_fullstory.php?contentId=300&cat_id=24))

SDB issued its second bond issue in January 1997. This time \$330 million in bonds was underwritten by **Lehman Brothers**, **Credit Suisse First Boston**, **Smith Barney Inc**, **J.P. Morgan & Co**, **Morgan Stanley & Co Incorporated**, and **BancAmerica Securities Inc**.

**BancAmerica Securities** announced on December 17, 1997 that it would not invest in Three Gorges in future, in response to public pressure from environmental and human rights groups.

In May 1999, SDB (now called **China Development Bank**) issued a \$500 million bond. **Merrill Lynch & Co.** (a subsidiary of **Citigroup**) and **Chase Manhattan Bank** were the lead managers for the bond issue, each responsible for underwriting \$225 million. **Chase Securities**, **J.P. Morgan** and **Morgan Stanley Dean Witter** contributed \$6.25 million each; **Credit Suisse First Boston** and **Goldman Sachs** each contributed \$1.25 million.

**Morgan Stanley** helped underwrite a total of US\$830 million in bonds to the China Development Bank, the single largest funding arm for the dam, in 1997 and 1999. The firm's continued involvement with the dam is through their joint venture with the China International Capital Corporation, the lead advisor on raising overseas capital for the Three Gorges Project Corporation. CCIC is managed and 35 percent owned by Morgan Stanley.

**Goldman Sachs**, **UBS**, **HSBC** and others were hired by the China Development Bank to help raise €500m (US\$600 million) from within Europe and by the Chinese Export Import Bank (CEIB) to place a further \$1bn (£540m) worth of bonds worldwide. (Carrell, Severin, "HSBC under fire for its role in £870m bond sale to finance China's megadams," The Independent (London), July 25, 2004)

In July 2004 the **China Development Bank** registered a \$500 million bond sold by **Morgan Stanley** with the Securities and Exchange Commission (SEC). Earlier that month, the **Export-**

**Import Bank of China** issued \$750 million in 144a private placement notes (named after the SEC rule governing them) sold by **Citigroup** and other banks. (Baue, William, "US banks criticized for involvement in China state bank bonds," Socialfunds.com, August 19, 2004)

Also see the report called **Rogue Traders** ([www.foe.co.uk/resource/reports/rogue\\_traders.pdf](http://www.foe.co.uk/resource/reports/rogue_traders.pdf)). This March 2002 report details how Morgan Stanley's activities threaten millions of people in China, Tibet and Indonesia, and recommends formulating social and environmental screening policies for investors.

#### **Advisers and Underwriters of China Construction Bank's Initial Public Offering**

**China Construction Bank** held its IPO on the Hong Kong Stock Exchange in October 2005. Underwriters were **Morgan Stanley, China International Capital Corp, and Credit Suisse First Boston Corp.**

It was reported that **Morgan Stanley** would receive US\$80 million for advising **China Construction Bank** on this listing. **Morgan Stanley** had been working on the deal for at least two years and would claim about 40% of the total fees, estimated at US\$200 million.

**Credit Suisse**, hired only two months before the listing, was expected to claim 10% of the fees.

(Xinhua Financial Network News, "China Construction Bank IPO draws more than 80 bln USD subscription – sources," October 20, 2005)

#### **Underwriters of Yangtze Power's Initial Public Offering**

In November 2003 **Yangtze Power** launched its initial public offering in China's domestic A-share market. The company said it would use the money collected from the stock market to finance its acquisition of four power generators from its parent company - Three Gorges Project Corp. **CITIC Securities** was the lead underwriter for the IPO. (Chen Yao, "Yangtze Power Launches IPO," Business Weekly, November 25, 2003; Agence France-Presse, "China Yangtze Power retail shares oversubscribed 68.7 times," November 6, 2003; Agence France-Presse, "China Yangtze Power institutional offer 84 times oversubscribed," November 7, 2003)

#### **Foreign Investors in Yangtze Power's Initial Public Offering**

Foreign investors, including **UBS AG** and **Deutsche Bank AG**, subscribed to shares under the qualified foreign institutional investor (QFII) program.

(Chen Yao, "Yangtze Power Launches IPO," Business Weekly, November 25, 2003; Agence France-Presse, "China Yangtze Power retail shares oversubscribed 68.7 times," November 6, 2003; Agence France-Presse, "China Yangtze Power institutional offer 84 times oversubscribed," November 7, 2003)

## 5. Source Abbreviations

AFDCN=Asianfo Daily China News  
AFP=Agence France Presse  
AFR=Australian Financial Review  
AFX Asia  
AIW=Asia Intelligence Wire  
APL=Asia Pulse Limited  
BBC=BBC Worldwide Monitoring  
BTS=Business Times Singapore  
BW=Business Wire  
BWY=Business Weekly  
CD=China Daily  
CNW=Canada Newswire  
CP=Canadian Pacific Newswire  
DFAIT=Department of Foreign Affairs and International Trade (Canada)  
DPA= Deutsche Press Agentur (Germany)  
DT=Die Tageszeitung (Germany)  
ENR=Engineering News Record  
ENS=Environmental News Service (Internet)  
EPD=Electric Power Daily (U.S.)  
FEER= Far Eastern Economic Review  
FP= Financial Post (Canada)  
FT=Financial Times (U.K.)  
G&M= Globe and Mail (Canada)  
GDN=The Guardian (U.K.)  
GH=Glasgow Herald (Scotland)  
HK STD=Hong Kong Standard  
HRW=Hydro Review Worldwide  
IPS=Inter Press Service (Internet)  
IS=Independent Sunday (U.K.)  
IWP&DC=International Water Power & Dam Construction  
JP=Jiji Press (Japan)  
KT=Korea Times  
LE=Les Echos (France)  
MG= Montreal Gazette  
PA=Power in Asia (Financial Times)  
Reuters= Reuters Newswire  
SCMP= South China Morning Post (Hong Kong)  
SNS= States News Service (U.S.)  
SOS=Scotland on Sunday  
SS= Shanghai Star  
WD=Workers Daily  
WSJ= Wall Street Journal  
WRR=World Rivers Review  
Xinhua=Xinhua News Agency  
YS=Yomiuri Shimbun (Japan)