The DAQO Group Company

DAQO General History
DAQO Group Company, founded in 1965, was originally founded under the name of the Jiangsu Changjiang Electric Group. Four joint venture enterprises originally comprised the company —

Sino-Germany Zhenjiang Klockner-Moeller Electrical Systems Co., Ltd.
Sino-Dutch Zhenjiang Holec Electrical Systems Co., Ltd.
Sino-American Zhenjiang Sun Light Co., Ltd.
Sino-Germany Zhenjiang Klockner-Moeller Bus Trunking Systems Co., Ltd.

These companies were set up successively. In 1998, Nanjing Intelligent Apparatus Co., Ltd was registered in Nanjing, which specializes in producing plant integrate automatic systems. DAQO Group Company is a State Level Grand-1 Type enterprise which produces electric products including medium and low voltage switchgear, medium and low voltage enclosed bus bar, isolated phase bus, lighting equipment and power system automation equipment.
In 2004, Jiangsu Changjiang Electric Group changed its official company to DAQO Group Co., Ltd, which is now in charge of eleven subsidiary companies including:

The Jiangsu DAQO Enclosed Busbar Systems Co., Ltd. which manufactures Isolated Phase Bus, Metallic Enclosure Bus Duct and Cable Bus Duct is a privately owned DAQO Group company which was founded in 1994.

Other companies added and recognized as joint venture partners are:
Sino-Germany Zhenjiang Klockner-Meoller Electric Co., Ltd.
Sino-American Zhenjiang Eaton Electric Corp. Ltd.
Sino-American Zhenjiang Sun Light Co., Ltd.
Sino-Germany Zhenjiang Siemens Bus Co., Ltd.
Nanjing Intelligent Apparatus Co., Ltd.
Shenzhen ZhengChangjiang Company, Fuzhou Zhenbao Company.
**DAQO Management System**

The DAQO Group advocates management improvement and 1997 DAQO invested in the CJ-CIMS project of Changjiang Group and is listed as the State-863-Plan. This system has been in operation after the evaluation and acceptance of National and Provincial Science Technology Committee.

In 1998, DAQO Group carried out CIMS (computer integration management system), which uses ERP software published by ORACLE to optimize the flow-line of operation and company framework, to promote efficiency and accuracy of communication within company and with customer. DAQO’s management system provides powerful support to each company in focusing on market and demand of customers. In 2000, CIMS passed the evaluation and acceptance of National and Provincial Science Technology committee, and listed in State-863-plan, which proposed by 4 famous scientists of China and approved by then Chairman Deng Xiaoping. The committee’s goal is to promote and assist Chinese companies with high-tech R&D in seven various fields.

**General DAQO Group Financial Aspects**

In 2003 the DAQO Group reached sales revenue in excess of RMB 1.33 Billion ($160 Million USD). In 2004, the DAQO Group total capital assets reached RMB 2.2 billion ($270 Million USD). DAQO increased sales revenue in 2004 60% over 2003 to RMB 2.04 billion ($260 Million USD). In 2007 the DAQO Group exceeded $700 million USD.

**DAQO Human Resources and Qualifications**

There are over 2500 employees working at the DAQO Group. Within the DAQO technical group there are 720 technicians, 22 senior engineers, 156 engineers. Of these engineers two have doctorates and 30 have achieved master degrees. All others have achieved at least a bachelor’s degree within their respective fields.

**DAQO Technical Center**

A central technical center has been established to work with all DAQO Group companies. The center has responsibilities for research and development of new product designs, improving existing designs, all computer and networking services, manufacturing engineering and research and all foreign affairs functions.

Daqo group pays vital attention to science and technology creativity in order to pursue the leading technical position. The Daqo Group spends no less than 5% of its sales revenue on technical R&D each year. In 2003, Daqo Group set up Science Research Center and Post-doctor Research institute in Shanghai and combined with Xi’an Jiaotong University to set up another Research Center in Xi’an. On August 2004, “Jiangsu Intelligence Elementary Research Center” was founded within Daqo Group. The Daqo Group also plans to build an overseas research institute.
DAQO Manufacturing Capabilities
All major manufacturing and quality inspection equipment has been imported from USA, Germany, Italy, Sweden, Japan, etc. The quality, cost reductions and training acquired by sourcing the latest equipment technology and processes from around the world keeps DAQO ahead of all Chinese domestic suppliers of the same products.

The presence of the latest global technology, experience and training at all DAQO manufacturing divisions makes DAQO the new global source of electrical equipment related to power generation and industrial markets.

DAQO Demographics
The DAQO Group has produced and delivered its products for 29 provinces in China. This includes projects involving thermal generation, hydro generation, nuclear generation. DAQO has also supplied products and services to industrial and municipal markets, such as for petrochemical, refinery, construction materials, local power, water supply, automobile and public transit systems. DAQO has also delivered product to several international markets.

The DAQO Group is the largest supplier of Isolated Phase Bus in China, boasting a +60% market share, comprised of four IPB suppliers. DAQO is also the largest medium voltage switchgear and low voltage bus duct supplier in China through their joint ventures with Eaton Cutler Hammer and Siemens. DAQO is the second largest producer of low voltage switchgear in China. All in all, DAQO has become one of the most reputable electrical equipment suppliers in the Chinese domestic market. DAQO’s Jiangsu Changjiang Electric Corporation has supplied 100% of the Isolated Phase Bus and medium voltage non-segregated phase bus for the world famous Three Gorges Hydropower Plant.

Three Gorges Hydropower Plant on the Yangtze River
The Jiangsu DAQO Metal Enclosed Systems Co., Ltd.

Jiangsu DAQO ETE Electrical Systems General Overview

Jiangsu DAQO was established by the DAQO Group in 1994 due to the overwhelming demand for Isolated Phase Bus (IPB), non-segregated and segregated phase bar bus duct systems and cable bus duct systems within the China market. JD produces all bus duct system types for almost any application. Jiangsu DAQO also produces all interconnecting equipment such as neutral grounding, hydrogen detection, potential transformer/surge protection, current transformer/metering and relaying equipment, forced air cooling units…almost any interconnecting equipment required to provide a complete electrical system.

Jiangsu DAQO has experience up to 30,000A applications with the IPB product line and has vast established experience with generator turbine units sized 1000MW and below. In 1997 Jiangsu DAQO produced and delivered over 100 IPB system units which have total generating capacity in excess of 40,000 MW.
Jiangsu DAQO busbar division purchased the technical IPB design from EMFORM in England in 1999 to secure technical backing to bid the Three Gorges Project. Soon thereafter EMFORM went bankrupt. Jiangsu Daqo then signed a co-branding agreement with the Calvert Company in USA in 2003 for one year for technical consulting for the Three Gorges Project. In 2005 Jiangsu DAQO contracted the consulting firm Energy System Professionals (ESP) to build and train an international sales force and assist with cost reductions and quality improvements in the factory. ESP has the responsibility for promoting all Jiangsu DAQO products and signing manufacturer’s representatives. ESP has also been contracted to assist in training Jiangsu DAQO personnel in all aspects of manufacturing, project management and quality systems in the factory and to assist in technical product development.

**General Financial Aspects of Jiangsu DAQO**

In 2003 JD reached an annual sales figure of RMB 55.8 Million ($6.7 Million USD). In 2004, JD increased its sales revenue of 2003 by a huge margin reached an annual sales figure of RMB 250 Million ($35 Million USD). JD exceeded 2004 revenues in 2005 of almost $50 million USD. The busbar division currently has a backlog of over RMB 313 Million ($40 Million USD) and expects 200 revenues to exceed RMB 415 Million ($50 Million USD). In 2007 Jiangsu DAQO exceeded $70 million in revenue for bus systems

**Jiangsu DAQO Human Resources**

JD, when founded in 1994, selected technical personnel from a special design institute in China, a HV apparatus graduate school, other Chinese universities and hired other special positions from already established competitors in the bus duct manufacturing business, and received the cooperation and support from relevant specialty technical center in Shanghai Jiao Tong University and Xi’an Jiao tong University.

JD currently has a total of approximately 350 employees. There are 8 department managers and 8 deputy or assistant managers. There are over 25 technical personnel including 5 senior engineers, 12 assistant engineers and 18 technical personnel. Within the technical group there is one doctor of science degree in electrical engineering, one Master of Science degree in electrical engineering. All engineering functions, mechanical, electrical and civil/structural are performed by the Jiangsu DAQO factory engineering staff; therefore there are no “outsourced” engineering functions.

There are 232 factory employees. The remaining employees are make up Jiangsu DAQO’s sales, human resource, project management, quality control, foreign affairs and general office departments.
Jiangsu DAQO Manufacturing Capabilities
Jiangsu DAQO’s new manufacturing facility covers over 15,000 square meters (~200,000 sq. ft.). The facility has some of the latest equipment technology in the bus duct business. All major equipment, such as plate rolls, radial and seam welding machines and manual welding and cutting machines were imported from Europe.

Multiple machines of each type used for plate rolling, radial welding and longitudinal welding processes are performed on state of the art CNC machines.

In 2004, production capacity of IPB exceeded 200 generator sets of IPB. Production capacity of non-segregated phase bus in 2004 reached to more than 400 unit bus runs. In 2005, utilizing two production shifts this capacity increased to a level of approximately 40,000 MW of bus duct production

Annual revenue in 2007 exceeded RMB 575 Million ($70 Million USD).
JD Qualifications and Certificates
In 1996 Jiangsu DAQO passed the expert appraisal for the Electric Industrial department and water and electricity department. QZFM-15/8000 type IPB passed the appraisal hold by Jiangsu Mechanical Industrial Office and Jiangsu Electric Power Bureau.

In 2002 Jiangsu DAQO passed the QZFM-20/26000 IPB design test for the Three Gorges Project. Once the left bank, 14 Units, had been installed JD also passed an “expert appraisal” organized by the Three Gorges inspection department.

Jiangsu DAQO currently holds the ISO 9001:2000 Quality Certificate.

General Engineering Design Capabilities
The technical center possesses UG-integration production soft system imported from America. The design process applies 3 dimensional modeling parameterization methods achieving virtual assembly and interference analysis and gap inspection to assure design functionality, improve manufacturing cycles and to eliminate costly production errors. The projects are all designed utilizing AUTOkad. In general all mechanical, electrical and structural calculations are performed and then the general arrangement drawings are drawn and submitted for approval. Typically, the general arrangement drawings will be submitted with all major equipment located and will provide preliminary steel support locations so that foundation locations can be confirmed. All other required design drawings such as terminal interface and auxiliary equipment are then prepared for approval submittal. All design drawings are approved by the Director of Engineering prior to submittal.

General Products and Ratings
IPB – Voltage rating 3kV~69kV, current rating up to 30000A
Non-segregated phase bus – Voltage rating 35kV, current rating up to 6300A
Segregated phase bus – Voltage rating 35kV, current rating up to 6300A
Cable enclosed bus – Voltage rating up to 10.5kV, current rating up to 4500A
Compact-IPB – Voltage rating 10.5kV, current rating up to 4000A

Major Projects = 70,000MW