The task
Global consumption of paper - and consequently also pulp - is increasing. High rates of growth are expected, especially in Latin America, Asia and Eastern Europe. China is responding to the cost pressure in the market by building mills with high production capacities.

This was the reason why APP, one of the leading paper and pulp companies and one of Asia’s biggest paper and pulp producers outside Japan, decided to build the Hainan Pulp Mill on Hainan Island in China’s southernmost province. The new mill has fresh and wastewater plants, a woodyard, a power plant, digester, a pulp line, chemical plants, a drying plant and many other process sections. The mill has been designed with an annual capacity of over one million tonnes of pulp.

Industrial Technologies was appointed as general contractor for the entire electrical engineering, while Siemens Energy won the order for the Hainan Pulp Mill’s power plant. The order was secured on the basis of the well-matched SIPAPER pulp and paper industry products.

Customer:
Asia Pulp&Paper with Hainan Jinhai Pulp & Paper Co., Ltd. and Hainan Jiang Lin Trading Co., Ltd.
Implementation period:
June 2003 to December 2004
Scope of supply and services:
- Project management
- Engineering
- Supply of the complete electrical engineering systems
- Steam turbines
- Installation supervision
- Commissioning
The solution
The success of the Hainan Pulp Mill project was closely linked to the strategic planning and the collaboration with the customer during the tendering and execution phases. Nevertheless, 40 percent of the specifications and scope of supply had not been settled when the order was awarded. In addition, the very tight time schedule constituted a particular challenge, with only 20 months between the initial bid submission and commissioning and a mere five months between commissioning and reaching full production levels.

Siemens applied its SIPAPER modular concept to the Hainan Pulp Mill project, supplied all the electrical engineering equipment for the production lines from a single source and monitored the installation of all the power generation and distribution systems, electrical equipment, motors, drive systems and automation equipment. Siemens specialists handled the engineering, project management, installation supervision and commissioning. For example, some 2,400 drives, over 110 transformers, 220 high and medium voltage bays (ranging from 220 V to 6 kV), 3,000 MCC outputs and 800 km of power cable were supplied, and modern SIMATIC PCS 7 DC systems were assembled and put into operation.

In addition to the tight schedule, coordinating the supply of both local and imported Siemens products also represented a special challenge, as did completing the engineering and manufacturing on schedule and in line with specifications under all the different political and legal conditions. Scheduling pressure resulted in a closely meshed project organization being set up, not only in Germany but also in Shanghai and on the Hainan construction site. The Shanghai project office of Siemens Ltd. China played a key role in liaising with local subcontractors and maintained contact with the local Siemens production plants as well as the back-up office and project management in Germany.

This created an international team of German and Chinese specialists, with interfaces to other work units and international partners, such as Andritz and Kvaerner. Installation, testing and commissioning went hand in hand. The large number of standardized SIPAPER solutions considerably reduced the number of interfaces and substantially shortened the implementation period.

The Hainan Pulp Mill went on stream in December 2004. Only five months later, management announced a new production record of 3,287 tonnes a day, thereby exceeding at this early stage the design capacity of 3,250 tonnes per day. The mill is now running at an annual capacity of almost 1.5 million tonnes of pulp.

The result
- Awarding the complete electrical engineering and drive systems to a single supplier enabled the entire facility’s power engineering to be optimized
- Optimized production costs make customers less vulnerable to the usual fluctuations in the market price of the end product
- Reduced energy consumption and CO₂ emissions
- Drastically reduced number of interfaces led to commissioning in record time and lower OPEX costs for maintenance, training and spare part inventories