SIEMENS

Industrial Solutions and Services

Completely Integrated Solutions
for the Pulp and Paper Industry

SIPAPER^{CIS}
More Productivity
More Performance
More Power

Your Success is Our Goal

In the demanding pulp and paper industry,

continuous improvement

is necessary to keep pace with

the competition

- Costs are rising and the pressure of competition is growing everywhere in the world.
- Your products have to meet more and more stringent requirements, chemical and physical.
- Processes in your plants – often involving facilities distributed the world over – are becoming increasingly complex.
- The amount of freedom for entrepreneurial decisions is diminishing.
- The productivity edge that distinguishes who is the best and who is among the rest is becoming finer and finer.

Optimizing production processes. Utilizing industrial IT to boost efficiency. Maintaining competitiveness throughout plant life cycles. Can you afford to ignore the big picture and look at these aspects as if they were separate issues?

Isn’t it time to take a new, integrated approach to ensure that performance improves right across the board?

Our portfolio has always had the power to sustain and improve the competitiveness of your plant – in all dimensions:

Horizontally

along the entire value-adding chain from the timber yard to shipping with products, systems and technological solutions for high production dependability, process efficiency and product quality.

Vertically

from sensor technology from the production to the ERP levels, with industry-specific IT solutions that directly intervene in the production process as well as gather and process data from every source in the company so you can make better based decisions.

Over the entire plant life cycle

with services from consulting and plant construction through maintenance to modernization. This serves as the basis for speedy production rollout, economical manufacturing, and continuously high availability and sustained competitveness.

Now we've taken things
a decisive step further…

...and developed the SIPAPER^{CIS} product family.

The SIPAPER^{CIS} product family consolidates all our capabilities into one integrated offer – our Completely Integrated Solutions. We've made sure that every solution that's related to process improvement is also designed for the integration into the corporate information structures and for the optimization of machine and plant life cycles.

Because they network the horizontal, vertical and chronological dimensions, our solutions intrinsically address the three decisive factors for your plant's production capability:

- Improving the production process
- Directly intervening in the process in real time and providing of all relevant information from the production and secondary processes to the decision-making process for all levels in the organization.
- Maintaining competitiveness using a service that is targeted to optimizing the process and not just individual components.

Competitiveness in every dimension. Completely Integrated Solutions mean …

Rapid and long-term productivity for your investment

Our portfolio includes a solution with a standardized core for every function within the plant. So these tried-and-tested solutions have inherited the wealth of **experience and proven ability** from thousands of applications in virtually every sector of industry. Having this "in their genes" is the best possible way of ensuring **smooth operability** and high productivity.

At the same time, the standardized core means that each solution can be efficiently configured and parameterized to suit your plant. By comparison with a custom solution that has to be built from scratch, the time to productive rollout is significantly shorter.

More dependable operation, more effective service

Because of the standardized solution cores, operators and service personnel need **less training and familiarization**. There is less room for human error and diagnosis is faster and more reliable. You can seriously **reduce spare part efforts** – even forming sharing alliances – and restarts after routine maintenance or modernization outages are more streamlined. This all adds up to lower costs, higher availability and shorter downtimes.

Standardization also permits **more flexible utilization of human resources** and faster troubleshooting, because the knowledge base is globally applicable.

Greater solution performance

The standardized solution cores represent a **wide range** of solutions that are globally applicable. As a result, the pulp and paper industry profits from experiences that we acquire and utilize in every sector of industry. The result is the **continuous improvement** of our solutions – and their performance.

This goal is further supported by straightforward access to secure, unified documentation.

Long-term innovation and investment security

The product family for your industry consists entirely of solutions conceived and implemented with an eye to long-term **rolling development**, and that includes future modernizations.

And you'll find more or less automatically that you benefit (and considerably quicker and cheaper) from the state-of-the-art as each **product innovation** comes along.

At the same time, you have the assurance of working with **unified**, harmonized solutions across all your production facilities, even if you opt for step-by-step installation, one plant or one process at a time. This uniformity affords you the long-term technological and economic **security** you look for in all your investments.

The process of networking.
The networking of processes.

Solutions and services become Completely Integrated Solutions

1 To perform competitively today, it's **no longer sufficient** to optimize the value-added chain, the information structures and the life cycle of a plant in isolation from each other.

2 Therefore we have **restructured** our portfolio ...

3 ... and defined a **standardized solution core** for each plant function that demonstrates its reliability a thousand times every day in almost every industry.

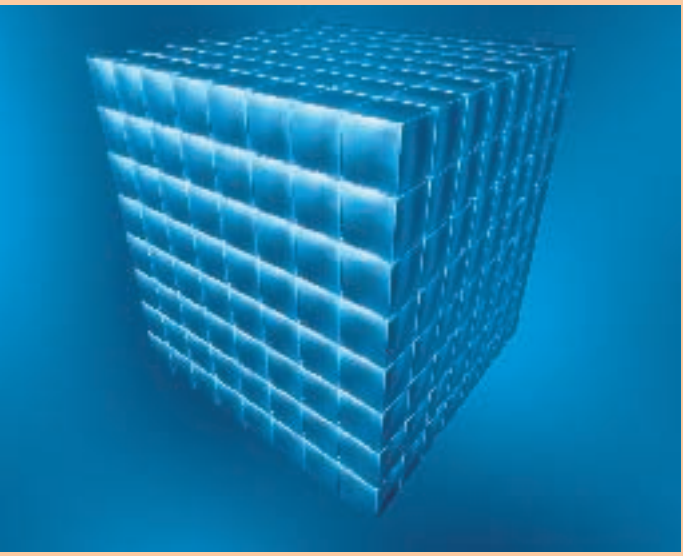
These solution cores are not only designed for **performance** in the production process; they also comprise integration in an end-to-end **communications flow**, in our service concepts and technological developments as part of future **plant modernizations**.

4 Starting from this core, we create **industry-specific solutions** that incorporate our extensive technological experience and systematically improve the process ...

5 ... adding **project- and plant-specific customizing** to tailor an exact solution to your individual requirements.

6 As such, just as every one of our individual solutions **is already optimized within itself,** ...

7 ... so is also the totality of these solutions in the **SIPAPER**[CIS] product family for the pulp and paper industry – open to future developments and flexibly scalable to meet your requirements.



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8 **So for the first time, technical and technological solutions for plant and process optimization, ...**

9 **... industrial IT solutions for the optimal flow of information ...**

10 **... and services for the entire plant life cycle are integrated into a seamless portfolio.**

For more productivity.
More performance.
And more power.

Consistency from the component to the solution.

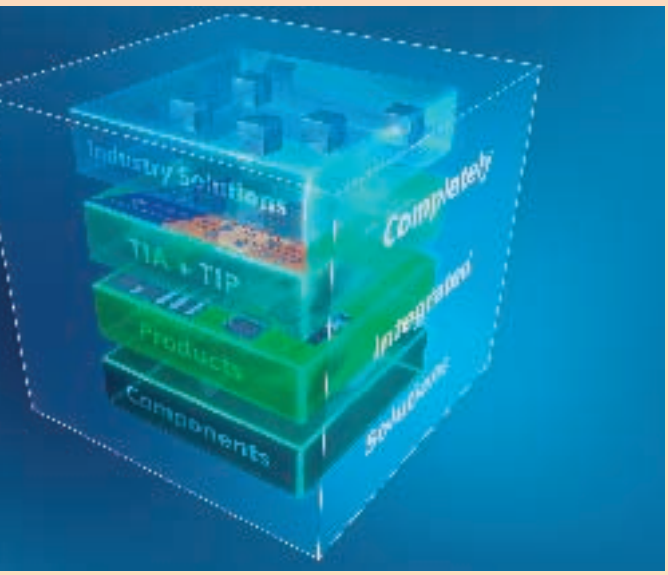
Only Siemens offers such a consistent, comprehensive package for cutting costs and boosting performance.

Integration efforts normally represent a significant block of costs during the life cycle of a plant. That's because components and products need to first undergo a complex adaptation process, both during the original installation and during ongoing upgrades, in order to ensure that they **work smoothly together**.

At this point, other suppliers need to go and purchase additional resources, from automation products to technology expertise or services. Under these circumstances, it's unlikely that an **integrative solution** without start-up difficulties and interface problems will result.

Here's where our approach makes a decisive difference, ensuring cost avoidance and **high productivity** right from the start through implementation of a comprehensive concept from the components to the holistic industry solution. And only Siemens has the expertise and the portfolio to do so.

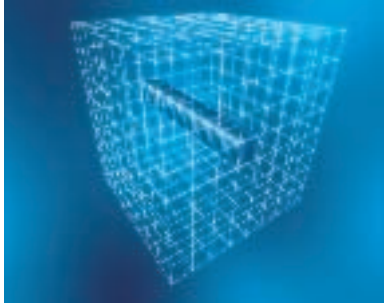
- Electrotechnical and electronic components that have been proven millions of times…
- … form the basis for our globally leading products in drive, automation and energy supply engineering.
- Through the Totally Integrated Automation and Totally Integrated Power platform strategies, these products are combined into cost-optimized, investment-safe "landscapes."
- Supplemented by industry-specific IT and service solutions, we use this as a basis for providing comprehensive solutions for the pulp and paper industry – the SIPAPER^{CIS} product family.



Uniquely integrated capabilities – from individual components to entire solutions.

Horizontal integration
with SIPAPER[CIS]:

Better products.
Better processes.
Better results.



Horizontally, SIPAPER^{CIS} provides solutions primarily designed to optimize production processes in the pulp and paper industry. These include drive and automation systems as well as power distribution and optimization concepts. These Completely Integrated Solutions deliver their full potential only when integrated with the appropriate systems in the vertical dimension (for instance by IT integration) and over time (for instance through maintenance programs) into a unified whole.

Plant and process solutions

In the pulp and paper industry, every gram counts, and the era of unlimited resources is a thing of the past. To be profitable under present market conditions, manufacturers need production processes that are meticulously optimized for efficiency. Every technological solution must therefore fulfill three key requirements for sustained competitiveness and productivity: Assured high process stability, improved product quality, and reduced day-to-day operating costs.

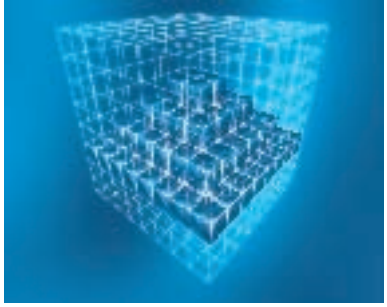
SIPAPER^{CIS} – based on nearly 100 years of industry experience – is designed specifically to meet these requirements. Examples include:

- powerful and robust drive systems, intelligent, networked automation systems and energy concepts for pulp and paper production
- efficient raw-materials logistics and materials preparation systems
- quality assurance and management information systems

Regardless of individual requirements involved, the principle behind our solutions always remains the same: A high level of basic stability based on market leading proprietary products and systems for drive technology, automation, and electricity supply concepts that are proven in a very widespread installed base. Based on this robust technology and our extensive industry understanding, we design process models and automation and control concepts to technologically optimize the plant and operate it more economically. The result? Seamlessly integrated, industry-specific solutions based on a standardized core that are customized to your individual needs and deliver right from the word go.

Vertical integration
with SIPAPER^{CIS}:

Down to the second, you'll know how to get more out of your plant.



Vertically, SIPAPER^{CIS} provides you with products and solutions that link production with management and achieve enormous improvements in productivity and quality as they interact with the process systems. These solutions encompass management information systems, quality assurance and logistics. The value added from these functions results essentially from the efficient transformation of customer orders into production orders, and from the utilization of data from the horizontal level as an information source for solid production, operational and management decisions.

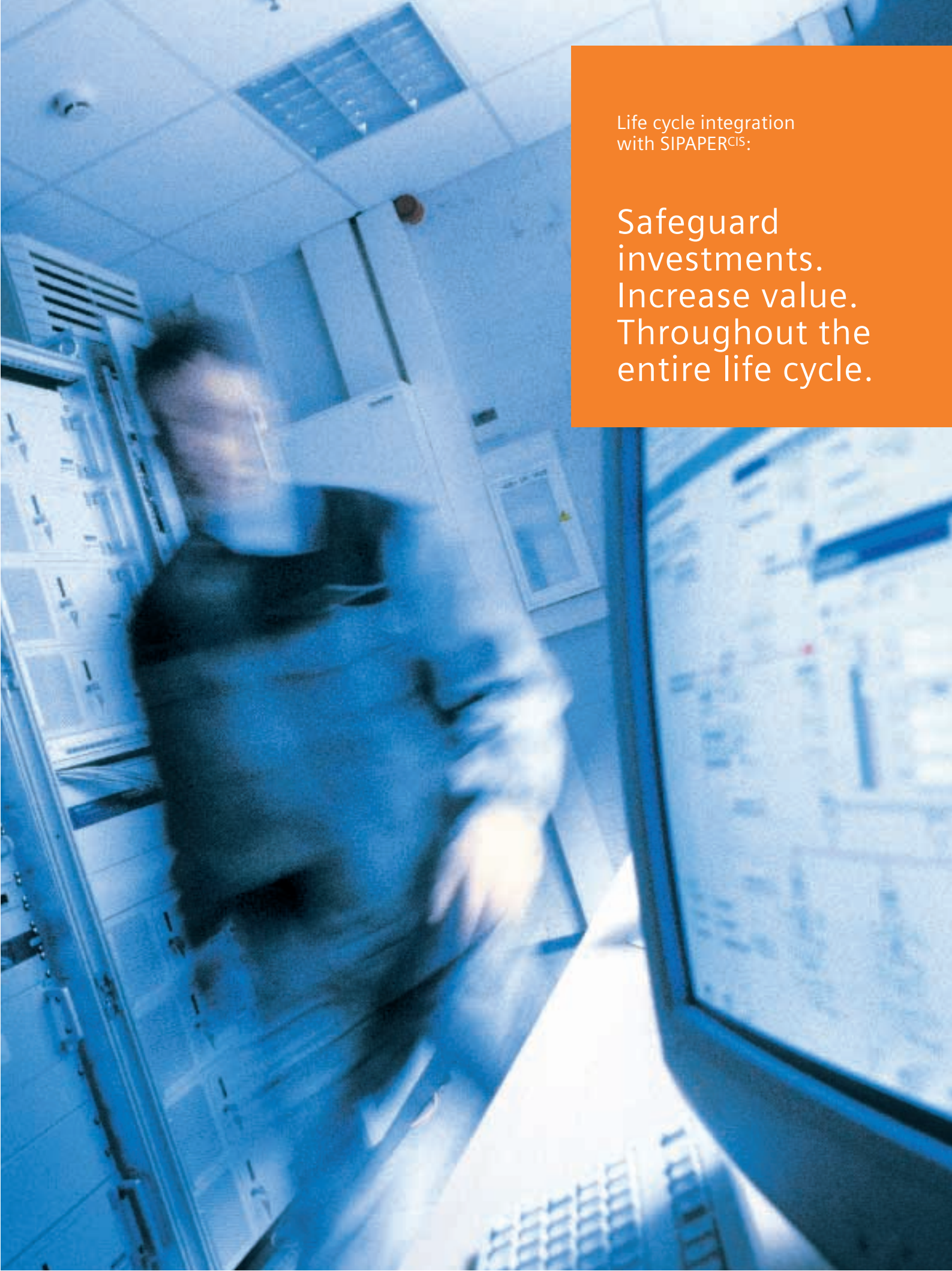
Industrial IT

Controlling production processes at the engineering and technology levels is one aspect of profitability. A closely related task is the timely processing of customer orders at the required quality level, which involves the optimized application of all technical, personnel, chronological, spatial and financial resources – even when unforeseen events occur.

That's a challenge that can't be handled just at the production level, nor at the corporate management level alone, but only by a combination of both in which data is seamlessly integrated company-wide and processed in real time to hard and credible information. The resulting transparency allows everyone involved in the company's effectiveness to reach swift, solid, optimal decisions even in the most complex environments.

We provide IT solutions powerful enough to do exactly this as an integral part of SIPAPER^{CIS}, our Completely Integrated Solutions for the pulp and paper industry. These solutions would be inconceivable without our expertise from 30 years of experience in industrial IT, and our nearly 100 years in the paper industry. Both play an equally important role, because it takes someone who understands the process to truly optimize process control through information technology.

One way to measure our expertise is by our many patents for IT solutions for the pulp and paper industry. But the real proof is to be found at our customer's facilities, where we've been able to reduce process costs and improve decision-making capabilities time after time.



Life cycle integration
with SIPAPER[CIS]:

Safeguard investments. Increase value. Throughout the entire life cycle.

The chronological component of our integrated SIPAPER^{CIS} solutions is related to services we provide throughout the life cycle of your plant. Specifically, these are services related to plant construction, maintenance and modernization. Systems and their functions on both the vertical and horizontal levels clearly play a part in this context, too. That's because system automation must be uniform, and it must be networked all the way up to the management level in order for strategies such as low-cost maintenance to be implemented on a plant- and company-wide scale.

Plant construction, maintenance and modernization

Your overall bottom line is determined by the total life cycle cost of your plant. So the interesting questions are these: How fully are my machines utilized? How reliably can I meet a critical delivery date? How often and for how long do shutdowns interrupt the production? Will the system still deliver competitive performance five years from now?

We provide the answers to these questions within the framework of SIPAPER^{CIS}, with our complete spectrum of professional life cycle services ranging from consulting and financial engineering, plant planning and construction, training and ongoing maintenance to modernization.

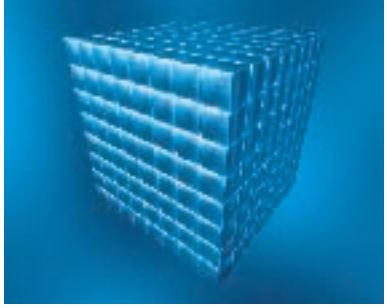
Only Siemens is able to answer these questions in the breadth and depth you need to get the most of your enterprise. Our services do much more than just optimize components. By integrating our process and technological expertise, we improve the entire production process, the secondary processes, and the efficiency of maintenance. As your single-source partner, we help you utilize service fully as a strategic tool in achieving your corporate goals.

New production line makes Hogla-Kimberly one of the most technically advanced manufacturers in the Middle East.

As a turnkey solutions provider, Siemens received a contract from Hogla-Kimberly, a joint venture between Kimberly Clark and AIPM (American Israel Paper Mills Ltd.), to replace the electrotechnology of the entire production line in Naharija. In effect, that meant swapping out the entire previous production line for a new one. The project included all equipment such as the SIPAPER^{CIS} drive and process automation technology for tissue machines, stock preparation and de-inking facilities, as well as instrumentation and all low-/medium-voltage supply and distribution systems. The contract also involved linking up field instruments using Profibus PA and integrating single- and multiple-motor drives into the overall automation design utilizing Profibus DP. The complete solution consists of standard SIPAPER^{CIS} modules and is uniformly integrated into all levels thanks to the pre-configured components. It's another classic example of a Completely Integrated Solution by Siemens for industry-specific applications.

By bundling an electrical package into the overall contract, Hogla-Kimberly has now found in Siemens a technological partner for any issue. To ensure optimized project development, our in-country partner MITUG took over local, on-site manufacturing of the switching stations. Siemens Israel provided overall project management and carried out assembly of all electro-technological equipment. The project leader also ensured that timely coordination with Hogla-Kimberly and the machine suppliers took place.

Our global presence, supported by a local network, enabled us to carry out the project on time and within budget. The use of the latest, integrated technologies will allow the company to increase its output of Molett hygiene paper to 70 metric tons per day.



Completely Integrated Solutions with SIPAPER^{CIS}:

A selection of reference projects

Rhein Papier relies on a proven plant concept.

The sustained, added value of a new plant recently developed by Siemens for Lang Papier in Ettringen convinced the Myllykoski Group to put a similar mill into operation for Rhein Papier in Hürth, Germany.

The contract included the complete electrotechnology for the facility within the scope of a Completely Integrated Solution for recycled paper processing and paper manufacturing machines. The solution also involved field instrumentation, drive technology using single- and multiple-motor SIPAPER^{CIS} drives, a SIPAPER^{CIS} DCS process automation system based on SIMATIC PCS 7, as well as integration of a SIPAPER^{CIS} QCS quality management system. The electrotechnology implemented by Siemens also comprised energy supply and distribution solutions such as power-related components, transformers, drives, and low-/medium-voltage switching stations.

The Siemens project team took over all construction phases up to and including start-up. Rhein Papier can also count on Siemens – its single-source supplier – for expertise regarding any facility issues during the mill's ongoing life cycle.

The results of this investment are readily apparent. Thanks to a machine that runs at the considerable speed of 1,800 meters per minute, the facility currently churns out 280,000 metric tons of newsprint paper per year from 100% recycled paper.

On a gigantic scale: electrotechnology for the Veracel pulp mill

Veracel, a 50-50 joint venture between Stora Enso and Aracruz, will soon complete commissioning of the world's largest pulp mill after years of preparation. In addition to processing, this huge project in Brazil also includes the planned cultivation of eucalyptus trees in the region as well as the protection of existing forest tracts within the scope of a comprehensive environmental program.

As a partner with extensive experience with large-scale projects, Siemens was awarded contracts from the suppliers of various process parts to provide most of the pulp mill's electrotechnology. The contract includes implementing SIPAPER^{CIS} drive technology hardware and energy distribution systems using SIPAPER^{CIS} components, as well as various phases of the overall mill project from engineering to start-up. The customer decided for Siemens based on its reputation for efficiency and system availability coupled with investment security. Using the latest technology derived from the integrated SIPAPER^{CIS} program, the plant expects to achieve a production output of 900,000 metric tons of pulp annually.

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