

ERCO SMARTS™

ClO₂ Plant Advanced Process Control

Over 100 years of experience in control and
communication technology



ERCO™
WORLDWIDE

What is ERCO Smarts™?

ERCO Smarts modular Advanced Process Control software that can dynamically optimize the operation of your chlorine dioxide plants for increased functionality and cost savings. Once installed in a local computer that communicates with the Data Communication Server (DCS) via Open Platform Communication (OPC), ERCO Smarts transfers critical process data to ERCO Worldwide via encrypted files to our cloud API. This results in increased process control, stability, reduced costs, and improved efficiency.

What can ERCO Smarts™ do?

CONTROL

Generator level.

Key to maintaining steady-state operation.

Chemical feed flows.

Using proprietary algorithms to maintain optimum generator liquor inventories.

Production rate.

Simply set your target and ERCO Smarts controls the rest.

Production target.

Based on bleach plant demand and storage levels.

REDUCE

Chemical and steam costs.

Chemical losses.

Due to production swings and disturbances.

Upsets, white-outs, liquor carry-over.

Environmental excursions.

Biological oxygen demand (BOD) loading. Through methanol consumption optimization.

Energy consumption.

Through optimization of chilled water use.

IMPROVE

Operational uptime.

Enabling maximum continuous operating rate.

Product quality.

Consistent ClO₂ concentration leads to improved pulp brightness control.

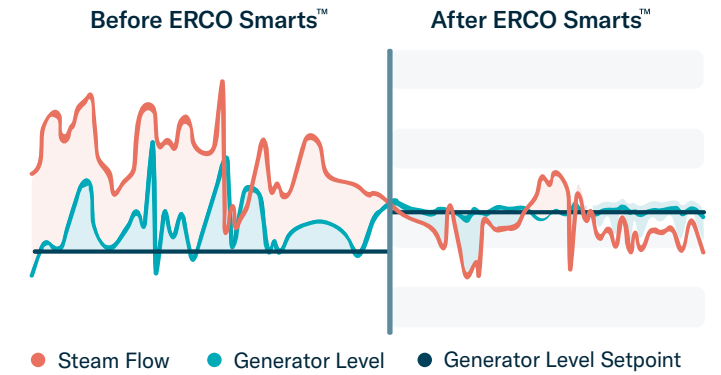
Operation stability. Variance between target and operating parameters.

Troubleshooting ability.

Real-time data is available to ERCO Worldwide specialists.

Process Improvement Results

Chemical and steam savings* are achieved through reduced variability and increased process stability.

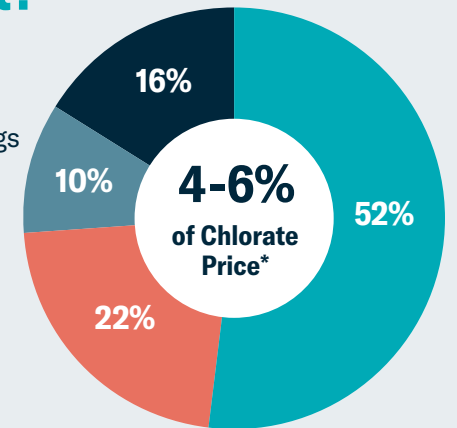


*Example of level control improvement.

What is the Return on Investment?

The actual ROI depends on each mill. ERCO Smarts delivers results well beyond any typical capital barriers. With zero additional payments to ERCO Worldwide, 100% of cost savings are retained at the mill. The average chemical consumption reduction of all ERCO Smarts customers are as follows:

- Sodium chlorate: 2.3%
- Methanol: 7.8%
- Sulfuric Acid: 4.3%
- Steam: 10%

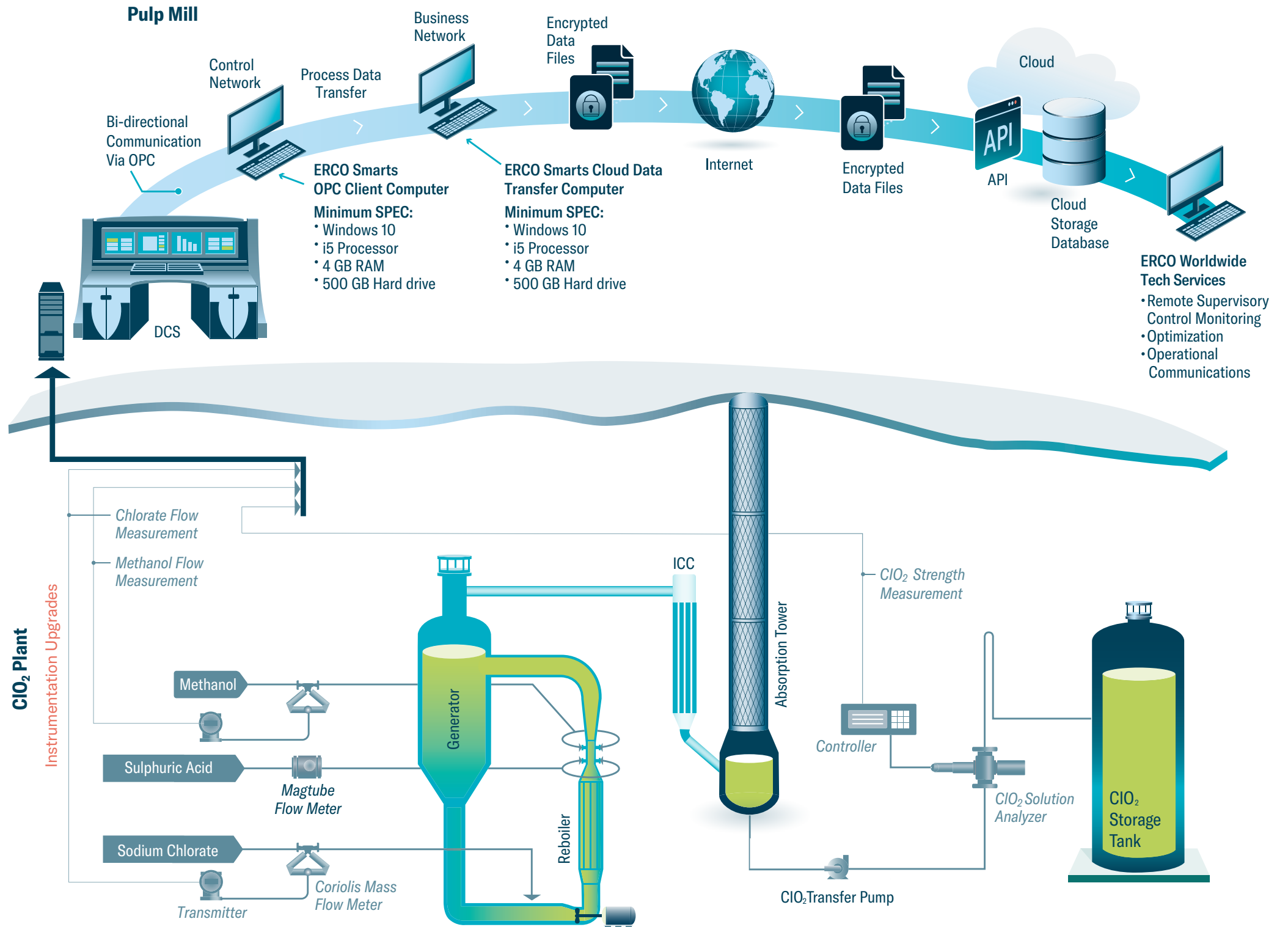


*Overall chemical savings converted to chlorate pricing based on approximate 2021 chemical costs.

Implementation Requirements

- Computer with Windows operating system and .NET framework 4.7 or greater, with read/write OPC connectivity to DCS
- DCS programming
- Coriolis mass flow meter on chlorate and methanol feeds
- Optek ClO₂ analyzer on ClO₂ to storage

Critical Instrumentation and Network Architecture



ERCO SMARTS™

3 Flexible Solutions

ERCO DNA

Cost: ~\$5K USD
Timeline: 2 weeks

Quick and cost-effective improvements

- Remote data monitoring
- Consumption baselining
- Operational analytics
- Service support
- Rapid implementation

Requirements: Computer with Windows operating system and .NET framework 4.7 or greater, with read-only OPC connectivity to DCS and DCS programming.

ERCO Essentials

Cost: ~\$65K USD one-time capex with delivery
Timeline: 14-16 weeks

Enhanced level control for real-time solutions

Everything included in ERCO DNA, plus:

- Advanced generator level control, accounting for ~40%-50% of total chemical savings
- Improved chemical savings
- Moderate DCS programming

Requirements: ERCO DNA setup + Coriolis mass flow meter on chlorate feed.

ERCO Smarts™

Cost: ~\$150K USD one-time capex with delivery
Timeline: 14-18 weeks

Industry-leading technology for maximum savings

Everything included in ERCO Essentials, plus:

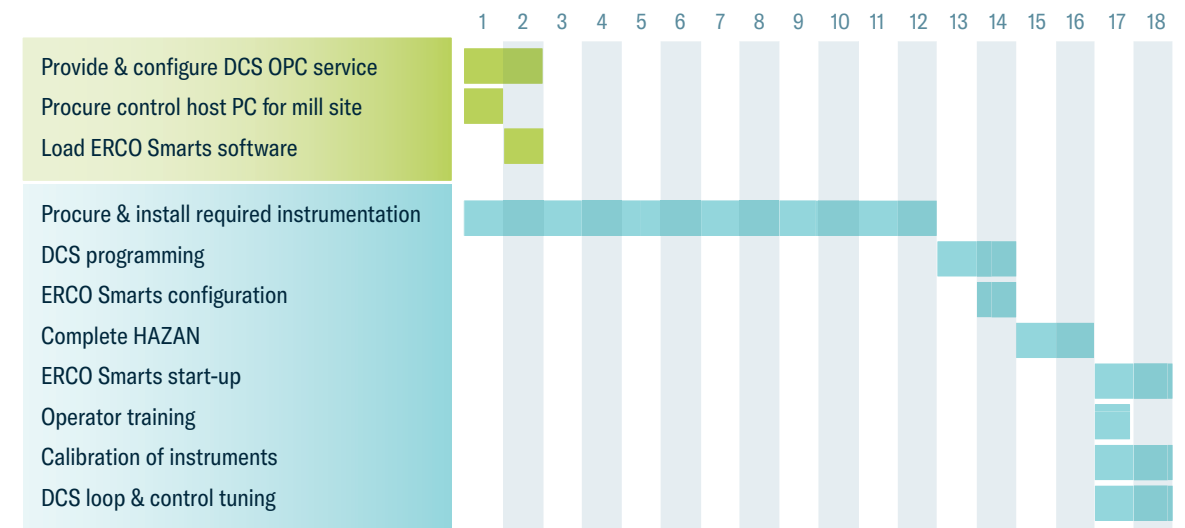
- ERCO's full suite of process optimization, chemical savings and inventory control solutions modified to maximize your ROI
- Monthly savings summary
- Advanced DCS programming

Requirements: ERCO DNA setup + Optek ClO₂ analyzer on ClO₂ to storage. Coriolis mass flow meter on chlorate and methanol feeds.

Implementation Timeline

Activities

Weeks



ERCO DNA (2 weeks) ERCO Essentials & ERCO Smarts (14-18 weeks*)

*Dependent on individual mill requirements and available resources.



After Sales Services

ERCO Worldwide is North America's largest supplier of chlorine dioxide technology, providing unmatched expertise and customer support. We are proud to include the following with every installation:

- Dedicated service team available for on-site or remote technical support
- Automatic software updates
- Ongoing process control tuning as necessary

Please contact us
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Responsible Care[®]
Our commitment to sustainability.



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