



# Enhance Your Operations and Assets

*Ammonia competition will soon be much more intense. The 2012 global capacity of 198 million metric tons will likely increase 18% by 2019.*

**“Market Study: Ammonia (UC-3705),” 2012. Ceresana market studies.**

## What if...

...you could improve your overall operations while protecting equipment from degradation?

...your control system and control loops always helped—and never hindered—your plant’s operation?

...you could reduce calibration and verification time while simplifying device maintenance?

You want to keep operating costs as low as possible while making as much ammonia as possible—and while fulfilling your regulatory obligations.

Controlling energy efficiency is crucial to containing operating costs, but utility problems and unexpected events can interfere. Similarly, you can miss production targets due to troublesome equipment or unreliable instruments. Unreliable instruments can also plague your efforts to fulfill regulatory responsibilities—a problem that gets even more complicated when you’re required to take even more measurements, or when you have trouble closing mass and energy balances.

There are plenty of ways for things to go astray. It’s your job to be sure that they don’t.

## DIFFICULTY MEETING ENERGY EFFICIENCY TARGETS

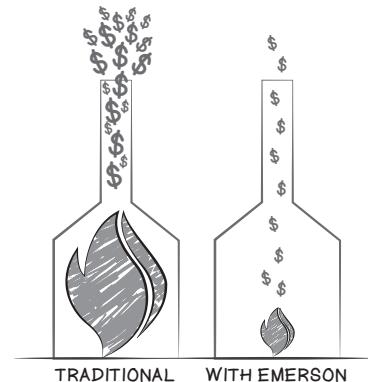
Many of the factors draining your energy efficiency are difficult to predict or prevent, including unplanned shutdowns, equipment degradation, and inconsistent utilities.

Dealing with these problems requires detailed and broad supervision of your devices and equipment, as well as a judicious maintenance strategy that prevents problems or solves them in the most efficient manner possible.

## MISSING TOO MANY PRODUCTION TARGETS

Plenty of things can throw your production off track, and few of those are under your immediate control. Steam-methane reformer inefficiency hinders your progress, while reformer trips can interrupt it entirely.

High-vibration critical equipment, such as compressors and turbines, can also impair or completely stop operations, with similar effects. And at the same time, unreliable or fickle instruments sap production in their own ways—by obscuring key process variables and by inducing your personnel to “play it safe” by running the process too conservatively.



*With Emerson solutions, you’ll be able to use more efficient control, maintenance, and production to increase energy efficiency.*

## FACING INCREASINGLY STRINGENT REGULATORY REQUIREMENTS

Your regulatory obligations are extremely important, but the extra effort and time—as well as the consequences of mistakes and ambiguity—can hamper your plant’s other critical activities.

You have to make sure you’re able to add required measurements without impeding operations, you have to be sure your measurements stay reliable, and you have to be able to close your mass and energy balances. But each one of those tasks can be huge when you face degrading devices, inaccurate instruments, and variables that are difficult to measure.

## AMMONIA

With Emerson, you can hit energy efficiency and production targets more consistently, while simplifying regulatory compliance.

### BUILD ENDURANCE AND EFFICIENCY FROM BOTTOM TO TOP

You'll be able to avoid circumstances that cause you to lose efficiency and miss targets.

Avoid the efficiency losses associated with unplanned shutdowns by using predictive maintenance on critical and essential equipment, while protecting compressors and heat exchangers from common causes of damage. At the same time, raise equipment efficiency and reduce failures by closely managing assets and improving maintenance and control.

Finally, get a better understanding of how to guarantee reliable, quality utilities by more closely monitoring your utility system and predicting developing problems.

### INSTILL RELIABILITY AND RESILIENCE INTO THE PROCESS

Consistently achieve production targets using better control, intelligent maintenance, and dependable instruments.

Boost plant efficiency and reduce reformer trips by decreasing process variability, improving operator effectiveness, and enhancing process responses. Prevent inefficiency and failure in compressors and turbines by using equipment health information to manage degradation, predict problems, and schedule cost-effective maintenance.

Promote confidence in your instruments with easy-to-verify flow meters, precise control valves, and detailed predictive instrument-health data —your personnel can know exactly when it's safe to push process limits. They'll also be able get the plant quickly back to production after a turnaround.

### MONITOR YOUR PROCESS AND EMISSIONS WITH EASE AND ACCURACY

Alleviate regulatory compliance problems when you have automated monitoring, reliable instruments, and the ability to consistently close mass and energy balances.

Measure emissions accurately and dependably—and document them automatically. And save time and effort by verifying the accuracy of flow meters without removing them from the process.

Avoid compliance headaches by quickly calibrating and verifying devices, while predicting and diagnosing problems affecting their performance. Consistently close your mass and energy balances using Emerson's wide variety of flow measurement devices—including high-accuracy Coriolis meters. At the same time, take advantage of our expert engineering consultants to improve your process.



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***"By tapping into device diagnostic information, we are able to predict with reasonable accuracy how long an instrument or valve will continue to perform satisfactorily before repairs or replacement will be necessary."***

**Joel Holmes**  
Site Tactical Reliability  
Engineer  
Monsanto



**EMERSON**  
Process Management