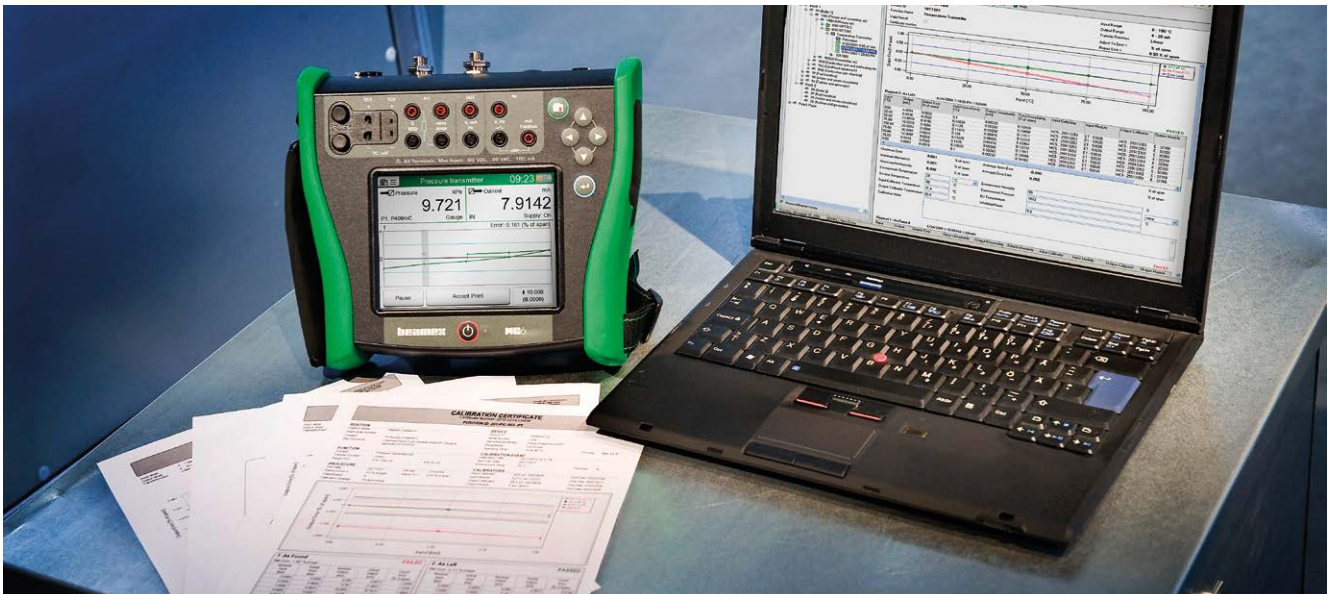


Beamex

Calibration White Paper

www.beamex.com
info@beamex.com



How calibration
improves
sustainability

How calibration improves sustainability

The Beamex Integrated Calibration Solution (ICS) is a system made of documenting calibrators and calibration software that increase economic sustainability by promoting quality and efficiency through faster, smarter and more accurate management of all calibration assets and procedures.

You only live once: A common phrase used around the world to indicate how one should live their life to the fullest. This is a great concept for individuals to take advantage of the life they have been given, but to assure a life for the future, resources need not be compromised in the process. In 1969, sustainability was introduced with the passage of the National Environmental Policy Act (NEPA), and has been an important topic ever since. *Sustainable Plant Magazine* defines sustainability as, “Operating our business in ways that meet the needs of the present without compromising the world we leave to the future.”

Social, economic, and environmental effects are the three pillars often used to define and measure sustainability. Calibration plays a critical role in impacting these pillars to help maintain sustainability throughout all process industries. Calibrating process instruments on a regular basis aids in optimizing processes to minimize production downtime and energy losses. Regular calibration also ensures high and consistent product quality. Calibration is a critical activity in controlling emissions, as emission-related instruments are often associated with the plant’s license to operate.

The pillars of sustainability

Although social effects are hard to quantify and measure, they still play an important role in maintaining sustainability. Safety is one social factor that tends to be more quantifiable than others: Evident across many industries, companies often display the number of days without injury. Employee safety is a social factor made responsible by the company.

A plant’s overall health and performance is important in protecting not only employees, but the community too. The community will not be impacted by on-the-job injury; however, poor maintenance and operations can lead to harmful impacts on the community, such as toxic gas emissions, out-of-spec products, or worst case scenario, an explosion.

Another social factor is the working and living conditions

A plant’s overall health and performance is important in protecting not only employees, but the community too.

of the employees and community. Working conditions could include, working hours, industrial noise, plant temperature, and harmful toxin release. In some cases, employees are required to live where they work. An oil platform is a good example where social sustainability becomes even more important. Social sustainability is important in maintaining industrial performance for the future.

Economic sustainability in plant operations includes using available resources to increase performance with positive returns on investment and overall plant profit. Economic impacts are typically measured monetarily. If the return on investment is desirable, the plant can consider the resources justifiable. For example, if a software solution helps monitor the overall health of the plant to prevent unplanned shutdowns that could cost hundreds of thousands of dollars, that software package is considered an economic solution to help maintain sustainability.

If available resources are not being used, the plant may not be sustainable in the future. In many of those situations, plant personnel do not understand what types of sustainable solutions are available and if they are right for a particular situation. Fortunately, many solution providers make available different sustainability and return on investment reports to help distinguish sustainable solutions.

Although economic sustainability involves increasing plant profit by using available resources, the environment cannot be compromised in the process. For example, if cheaper raw materials exist which improve overall profit but create harmful and toxic waste that compromise the environment, that solution is not considered sustainable. Environmental conditions must be considered in sustainable solutions.

Sustainability initiatives, regardless of the positive impacts on the social and economic pillars, all depend on the impact made on the environment, because ultimately, the future depends on today’s efforts to maintain a livable environment. Environmental initiatives could include

many different projects to decrease negative effects on natural resources available today. One such project includes promoting paperless environments to not only maintain trees and reduce waste, but also to create a more economical solution that decreases time spent using paper and pen. Other projects include the design and construction of green buildings that use less energy and water, manufacturing process modification that reduce greenhouse gas emissions that destroy the atmosphere, and restoration of different aspects of the environment that have been destroyed in the past, such as greenery and natural streams and rivers.

Different governmental agencies and acts, such as the EPA, OSHA and NEPA, have set regulations to help advance sustainability initiatives that promote positive influence on the social, economic, and environmental aspects indicating the importance of sustainability to ensure a future for this planet.

How calibration helps improve sustainability

Calibrating process instrumentation adheres to the social, economical, and environmental pillars of sustainability. Social sustainability includes the safety of the employees and community. Toxic gas emissions are monitored by instrumentation which must be calibrated and documented to ensure accurate readings and representation required by the EPA and OSHA regulations. The Beamex CMX calibration software reminds plant personnel when these instruments are due for calibration, reducing the chance for these instruments to be overlooked which could result in drifting or failure leading to more emissions. Out-of-spec, end products could harmfully affect the end user. Process instrumentation exists to monitor how much, how high, how little, how often, contents are being used to create a product. Again, these instruments can drift or fail resulting in out-of-spec products that could be harmful or deadly to the community. Calibration helps to ensure proper function, reliability and accuracy of instrumentation.

The Beamex Integrated Calibration Solution (ICS) is a system made of documenting calibrators and calibration software that increase economic sustainability by promoting quality and efficiency through faster, smarter and more accurate management of all calibration assets and procedures. An automated, integrated calibration program, such as the Beamex ICS solution, can connect to other computerized

maintenance management systems (CMMS), which increases quality and decreases the time and money spent on calibration, especially when compared to manual systems, such as pen and paper. Many plants receive work orders from the CMMS requiring them to open the calibration system to locate required calibration work. Results are often written down using paper and pen and inserted into some database twice, once in the calibration system and once in the CMMS. This manual process can take hours of work while the Beamex ICS can save a considerable number of man-hours per year. Streamlined calibration processes have fast returns on investment and improve plant profit by catching potential failures before they cause unplanned shutdowns.

Calibration plays an important role in monitoring the impacts on environmental sustainability. Instrumentation directly reflects the measurements of greenhouse gas emissions, but how certain are these measurements? Proper calibration of these instruments is required by the EPA and OSHA to ensure accurate readings. Often times, audits require calibration certificates to prove proper maintenance and calibration. The Beamex CMX calibration software helps maintenance groups to schedule and store calibration records for proper upkeep.

The Beamex Integrated Calibration Solution promotes paperless environments which saves trees and reduces waste. With advanced technology that supports download and upload of instruments requiring calibration from the Beamex CMX database to Beamex MC-series portable calibrators, the paper and pen phenomenon is erased, which saves time and money. For example, after implementing the Beamex CMX calibration management system, a GSK plant in Cork, Ireland eliminated 21,000 sheets of printed paper on a yearly basis, as the entire flow of data occurs electronically, from measurement to signing and archiving. In line with the interval extensions defined by the calibration blueprint, CMX also identified over 100 hours of savings in the first three months of operation.

Beamex products are sustainable

Not only does calibration promote sustainability, but Beamex calibration solutions are manufactured with sustainability in mind as well. Beamex's product development and production teams have received training on the environmental impact of product design. Beamex



products are also designed to have a long operating life – typically a customer uses a Beamex calibrator for over ten years. This minimizes the waste generated from the products.

The Beamex production process follows the Waste Electrical and Electronic Equipment (WEEE) directive 2002/96/EC that sets collection, recycling and recovery targets for electrical goods and is part of a European Union legislative initiative to solve the problem of huge amounts of toxic electronic waste. Beamex also takes into consideration the ISO 14001 environmental standards in their ISO 9001 quality system.

REFERENCES: Larson, Keith. “Why Sustainability Now?” Sustainable Plant. Putnam Media. 2013. Web. 26 March 2013. <<http://www.sustainableplant.com/about-us/>

All specifications are subject to change without prior notice.
© Beamex Oy Ab 2013. All rights reserved.
Beamex is a trademark of Beamex Oy Ab.
HART® is a registered trademark of the HART communication Foundation.