

# INDUSTRIAL AUTOMATION

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## THE CARBON CONUNDRUM – HOW OIL & GAS COMPANIES CAN HELP

■ HOW DOES CARBON  
CAPTURE WORK?

■ IEC AUTOMATION WEEK 2024:  
HONOURS AND AWARDS

■ REDUCING DOWNTIME IN CRITICAL  
INDUSTRIAL OPERATIONS

# CONTENTS

**AUTOMATION  
EXPO2025**<sup>TM</sup>  
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**INDUSTRIAL AUTOMATION**  
ESTABLISHED IN 1980

Editorial	8
Contents	10
News	12
The Carbon Conundrum – How Oil & Gas Companies Can Help	20
How Can Oil and Gas Companies Adapt to Sustainable Technologies?	26
Six Ways Oil and Gas Companies Are Addressing Sustainability and What It Means for Automation	28
Reducing Downtime in Critical Industrial Operations	32
How Does Carbon Capture Work?	36
Online Continuous Emission Monitoring System	38
'Delta IAQ solutions provide both convenience and enhanced energy efficiency'	40
New Standards in Level Detection	42
Not Just for Cars: Exploring CANbus Technology in Diverse Industrial Landscapes	44
Improving Efficiency, Productivity, and the Bottom Line in Oil & Gas	46
The Role of Compressed Air in Evolution of Automotive Industry	48
'Rapid technological advancements require us to stay agile and adapt to new trends'	50
Making Manufacturing Actually Green with PPP Enabling It	52
'We are agnostic to where our customers use our end polyester recycled material'	54
IEC Automation Week 2024: Honours and Awards	56
European Continental University Convocation	60
Learning AI in Healthcare	66
Instrumentation Reliability – Users' Perspective	68
Events, Exhibitions & Conferences	69
Products	70
Advertisers Index and Index of Companies Featured	78



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Managing Director,  
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Director – Process Industries,  
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Process Engineering Manager.



**Dr Shambhu Sajith**  
Assistant Professor,  
UPES Online.



**Ms Smitha Shetty**  
Regional Director for  
APAC at Achilles Information Ltd.



# **THE CARBON CONUNDRUM – HOW OIL & GAS COMPANIES CAN HELP**

# **COVER STORY**

# The Carbon Conundrum – How Oil & Gas Companies Can Help

Experts debate the various options before oil and gas companies to pursue the cleaner energy goal.

Oil and gas companies can help address climate change by reducing emissions and investing in carbon removal technologies. The global oil & gas industry is responsible for an estimated 42% of carbon emissions, directly or indirectly. Reducing operational emissions at the wellhead and refineries, improving leak detection and repair, installing vapour-recovery units, and using the best available technology are among the measures that can be implemented by the industry. Investing in carbon capture, utilisation and storage (CCUS) technology is another option that is actively promoted by the International Energy Agency even as critics point out it is unproven and highly inadequate. Others suggest market-based approaches, such as creating financial incentives for carbon removal, which can help drive innovation and attract capital. So against these various available options, how are oil & gas companies rethinking their operational strategies to prioritise carbon emissions reduction?

**When it comes to emission reduction, we are seeing increasing interest in pinch analysis technology**

“Oil and gas companies are increasingly adopting comprehensive strategies to reduce carbon emissions, focusing on both environmental commitments and regulatory compliance. This shift includes the implementation of advanced leak detection systems, vapour recovery units, and significant improvements to operational efficiency throughout the entire value chain, from extraction and transportation to processing and distribution. Companies are also re-evaluating energy use across facilities, aiming to optimise resource allocation and integrate new sustainability standards directly into core operations to meet evolving regulatory requirements and public expectations,” says Dr Bijal Sanghvi, Managing Director, Axis Solutions Pvt Ltd. Dr Sanghvi also suggests how his company is dedicated to supporting these



ambitious goals with industry-leading emissions monitoring and detection solutions, which provide clients with real-time visibility into multiple parameter outputs across critical areas such as wellheads, pipelines, and refineries.

Manjunath Rao, Director – Process Industries, Utthunga is of the view that the industrial and energy sector, currently among the largest contributors to the global carbon crisis, is under immense global pressure to reduce emissions of carbon dioxide and methane. “When it comes to emission reduction, we are seeing increasing interest in pinch analysis technology – a transformative new method to optimise energy use in industrial operations. By systematically identifying the ‘pinch point’ – the location in a system where the temperature difference between hot and cold streams is smallest – this approach maximises heat recovery, minimising the need for external energy sources like natural gas, electricity, or steam. The result is a dramatic reduction in energy consumption, directly translating to lower emissions. Beyond just energy savings, pinch analysis also helps design low-carbon systems by integrating renewable energy sources and enabling waste heat recovery,” he emphasizes.

“It’s fundamental to understand that there is not a magic solution to promote real decarbonisation in the oil & gas industry; the advances are incremental, and, in this sense, we are seeing good advances. The efforts to maximise energy efficiency of the process, especially in the downstream sector, are a relevant part of the strategic planning of any downstream player and this has a deep impact on carbon emissions. Another good advance is the development of carbon capture



**‘Oil and gas companies are adopting comprehensive strategies to reduce carbon emissions’**

**Dr Bijal Sanghvi**  
Managing Director, Axis Solutions Pvt Ltd.

technologies and green hydrogen production routes,” says Dr Marcio Wagner da Silva, Process Engineering Manager in Brazil. According to him, the oil & gas companies are engaged to reduce their carbon emissions, and this is reflected in their strategic planning, but it’s important to consider which is fundamental to look for a balance between carbon intensity reduction and the energetic security of the nations.

Carbon capture and storage (CCS) is considered a short-term solution to climate change whereby captured carbon is stored indefinitely. CCUS, on the other hand, which stands for carbon capture, utilisation, and storage, is a long-term solution to climate change and the captured carbon is used to produce products like plastics, concrete, or biofuel. Both CCS and CCUS are important tools for reducing emissions and combating climate change. They can be used together to create carbon-neutral processes. Now, what role do emerging technologies, such as CCS/CCUS or hydrogen, play in reducing emissions in the oil & gas sector?

“CCUS and H2 are vital in reducing the emissions – capturing carbon at the source helps oil and gas companies increase their



## **‘Biofuels are certainly a promising alternative energy source with immense potential’**

**Manjunath Rao**  
Director – Process Industries, Utthunga.

spending on exploration while limiting the environmental impacts. Oil and gas companies have existing technologies which might suit CCUS. Green Hydrogen forms less than 1% of H<sub>2</sub> generated and stored; gas is the cheapest option to obtain H<sub>2</sub>, and adding CCS to it forms blue H<sub>2</sub>, and this will enhance the profitability of the oil and gas companies since it diversified their portfolio and opened up new revenue streams. Cutting emissions will be the priority for oil and gas companies – CCUS and H<sub>2</sub> are options worth exploring to build sustainability in operations,” explains Dr Shambhu Sajith, Assistant Professor, UPES Online.

Ms Smitha Shetty, Regional Director for APAC at Achilles Information Ltd, opines that while emerging technologies like CCS/CCUS and hydrogen are crucial for driving the energy transition in the oil and gas sector, these technologies are still under development and can be expensive, even as they hold immense potential for significant emissions reduction. “At Achilles, we understand the importance of supporting early-stage innovations in this space. Our approach involves collaborating with industry leaders who are at the forefront of validating new carbon reduction methods. This collaborative effort ensures that we remain informed and aligned with the latest advancements in sustainable practices,” she says. The Achilles IOGP Compliance module is a comprehensive, risk-based solution that helps oil and gas companies effectively manage their contractors.

Dr Bijal Sanghvi also believes technologies such as CCS/CCUS and hydrogen fuel are



becoming crucial components in the oil and gas sector’s efforts to lower emissions and transition to a more sustainable energy landscape. “CCS works by capturing CO<sub>2</sub> emissions at their source and securely storing them, preventing greenhouse gases from entering the atmosphere, while hydrogen fuel provides a cleaner alternative to conventional energy sources, with minimal emissions at the point of use. Although these technologies hold significant promise, they still face challenges related to scalability, the need for extensive infrastructure, and high costs. Nevertheless, CCS and hydrogen are increasingly viewed as essential solutions in the journey toward a low-carbon future,” he asserts.

According to statistics released by Ember, a global energy think-tank, the world has achieved a record 30% share of renewable electricity in 2023 and is well on course to achieve 50% by 2030. So **how are companies integrating renewable energy sources (e.g., wind, solar) into their operations to reduce reliance on traditional hydrocarbons?**

“While the adoption and recognition of renewable energy sources is witnessing an exponential rise, the high cost of transition continues to be a major roadblock. The only way to combat this is to develop an innovative operational system that combines wind, solar and tidal energy, and explores integration with hydrogen as well,” says Manjunath Rao. This includes the installation of solar panels in refineries, usage of solar or wind power to power offshore drilling rigs, solar-driven desalination and water treatment and replacing diesel powered pumps, compressors and other equipment with solar-powered alternatives. “Today, we are also seeing rising adoption of nuclear energy as a reliable, low-carbon source of energy, especially for applications such as offshore platform energy supply and enhanced oil recovery (EOR),” he notes.

According to Dr Marcio Wagner da Silva, the renewables coprocessing routes in crude oil refineries are an interesting route to achieve decarbonisation, but there is a limit considering



## **‘Closer relations with clean tech start-ups are beneficial for oil & gas players’**

**Dr Marcio Wagner da Silva**  
Process Engineering Manager.

the quality of final derivatives and process restrictions like hydrogen consumption in hydrotreating units and the necessity to develop specific catalysts to deal with high amount of renewable raw material in the feed of processing units. “As quoted earlier, hydrogen is still produced by an intensive carbon emissions route and increasing the renewables participation in the feed of hydrotreating units will not close the circularity cycle. Another key question is ensuring an adequate and secure supply chain of raw materials,” he reasons.

## **Emerging technologies like CCS/CCUS and hydrogen are crucial for driving the energy transition**

“Oil and gas companies have opted for renewables to reduce Scope 1 and Scope 2 emissions. Solar energy is the cheapest form of energy source in most countries now. Solar energy is abundant in oil-rich countries. Substituting the electricity use from fossil fuels with solar energy has been found to reduce costs and increase efficiency. Wind energy has had a cost decline of 23% in the last decade, making it another clean energy option,” says Dr Shambhu Sajith. “Hybrid renewable energy solutions have also made their way into the priority list of oil and gas companies. The complementarity between solar and wind will increase the chances of reducing the intermittency challenges associated with renewables,” he adds.

For oil and gas companies, any shift from their core business to alternatives is not going to be easy due to a host of factors. **What exactly are the challenges and opportunities then, in transitioning to cleaner energy sources like biofuels or green hydrogen?**

“The shift towards cleaner energy sources, such as biofuels and green hydrogen, presents both intricate challenges and significant opportunities for the oil and gas industry. Key hurdles include technical issues, like the substantial need for infrastructure adjustments, as well as economic considerations, including high initial investment costs and scalability difficulties,” says **Ms Smitha Shetty**. “At Achilles, we are committed to facilitating this crucial transition by enhancing transparency within supply chains and connecting oil and gas companies to a vetted network of environmentally conscious suppliers through our Achilles Network model and Carbon Reduce Programs. This structured approach to supplier management empowers companies to confidently navigate the evolving energy landscape, bolstered by access to a reliable network of sustainability-focused partners,” she informs.

## The complementarity between solar and wind will increase the chances of reducing the intermittency challenges

**Dr Bijal Sanghvi** agrees that this presents a range of challenges, including high production costs, significant infrastructure requirements, and the development of appropriate regulatory frameworks. “Despite these obstacles, biofuels and green hydrogen offer immense potential to reduce greenhouse gas emissions, diversify energy sources, and help companies align with global sustainability and climate goals. These energy alternatives play a pivotal role in reshaping the future of energy production, contributing to a more resilient and sustainable energy mix,” he suggests. “By leveraging innovative solutions, companies in the energy sector can navigate the complexities of this transition with confidence, optimising production processes, improving efficiency, and ensuring high-quality outputs that contribute to a successful, sustainable energy future,” he adds.

“Biofuels are certainly a promising alternative



energy source with immense potential to transform India’s energy strategy. However, unlocking this potential depends largely on government support to raise the permissible blending percentage. When it comes to green hydrogen, the key challenge lies in the high investment costs and the safety risks associated with its handling, particularly given its high explosivity,” says **Manjunath Rao**. “While technological advancements and innovations are progressively developing components that will help lower costs, the real breakthrough will come when market demand increases. As the market matures and costs come down, hydrogen will emerge as one of the most viable energy options available,” he opines.

For oil and gas companies, it is not going to be an easy transition on their own. **How important are partnerships between oil & gas companies and clean tech startups or government initiatives in driving emissions reduction?**

“This synergy is fundamental! As previously quoted, there are no clear policies about carbon markets in countries and incentive policies to install carbon capture technologies by the oil & gas players, it’s a fundamental part of the strategy to promote real decarbonisation without great impact over the energy cost for final consumers,” says **Dr Marcio Wagner da Silva**. “Closer relations with clean tech start-ups are beneficial for oil & gas players once these companies have more agility and experience in developing and launching new technologies. As a secular industry, oil & gas companies tend to have extremely rigid management processes which can delay the development of innovations, and the start-ups partnership can be a strategy to solve this matter,” he elaborates.

To **Dr Shambhu Sajith**, innovation in the energy sector is never-ending, and staying afloat in the industry by experimenting, innovating, and pouring in research and development funding is essential. “Partnering with startups would bring more opportunities to oil and gas majors.



## ‘Oil and gas companies have opted for renewables to reduce Scope 1 and Scope 2 emissions’

**Dr Shambhu Sajith**  
Assistant Professor, UPES Online.

Startups bring agility and innovation, often developing breakthrough technologies like carbon capture, energy efficiency, and renewable energy integration. Chevron partnered with Carbon Clean, a clean tech startup, to develop compact carbon capture technologies for industrial applications. Often, the adoption of new technologies comes with additional risks. Co-funding projects spread financial, environmental, social, and political risks, creating more room for developing and testing new technologies. ExxonMobil partnered with Global Thermostat to pilot advanced carbon capture systems, a prominent example,” he explains.

“Achieving meaningful carbon reduction goals requires a collaborative approach, bringing together key players across the energy landscape. Through the Achilles network model, oil and gas companies gain access to a pool of vetted suppliers committed to compliance and sustainability,” says **Ms Smitha Shetty**. “Furthermore, the Achilles Carbon Reduce Program powered by Toitū Envirocare provides independent verification of emissions reductions and ensures transparent environmental impact metrics. This fosters trust and accountability, encouraging collaborative action and accelerating progress towards a lower carbon future,” she adds.

**What specific processes or operational changes are being implemented to improve energy efficiency and reduce emissions at extraction, refining, and transportation stages?**

**Dr Bijal Sanghvi** believes that to improve energy



efficiency and significantly reduce emissions, companies across the oil and gas sector are increasingly adopting advanced automation technologies, vapour recovery systems, and comprehensive emissions monitoring solutions at every stage of their operations. "These innovative approaches help optimise extraction processes, enhance fuel efficiency in transportation, and improve the overall operational efficiency of refining, all while reducing the carbon footprint of the industry and supporting alignment with global sustainability goals," he says.

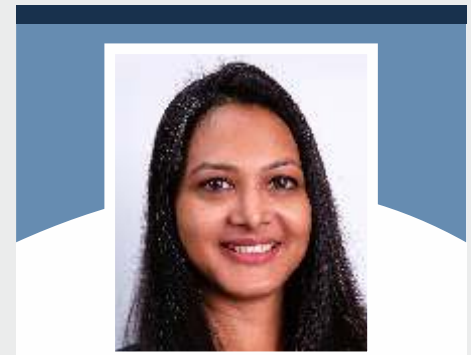
"Currently, alternate fuels such as water, air, tidal, biogas and hydrogen, are being utilised to reduce emissions across all states. Moreover, technology developments like predictive emissions management, IIoT and AI/ML will help companies across all functions in the oil and gas supply chain to better plan, understand and optimise their emissions," says **Manjunath Rao**. According to him, at the extraction stage (upstream), smart rigs can utilise AI/ML, advanced sensors, automation technologies and real-time monitoring to reduce energy consumption and improve operational efficiency. In the downstream phase, CCUS is making tremendous waves in reducing the carbon footprint of refineries. "The use of

combined heat and power (CHP) systems to generate electricity from excess heat will also optimise heat recovery systems and lower fuel consumption. Advanced Process Control (APC) systems are also absolutely critical for the real-time adjustment of variables like temperature, pressure, and flow rates to improve energy efficiency and reduce emissions, while also ensuring the production of high-quality products," he explains.

For **Dr Marcio Wagner da Silva**, the main question is using the available technologies to promote deep studies of the process and identify opportunities to reduce energetic intensity of the process. "A question which demands even more study is hydrogen waste in crude oil refineries where the use of 'pinch technologies' can help the refineries to minimise the carbon emissions related to hydrogen production," he says.

To conclude, **Dr Shambhu Sajith** makes the following observations:

- At the extraction stage, it is evident that renewable energy technologies should be employed to reduce Scope 1 and 2 emissions. The adoption of digitalisation and automation has been found to increase efficiency. They use real-time data to simulate and optimise




## 'Emerging technologies like CCS and hydrogen are crucial for driving energy transition'

**Ms Smitha Shetty**  
Regional Director for APAC at  
Achilles Information Ltd.

extraction processes, minimising energy use and emissions.

- At the refining stage, conventional boilers and furnaces should be replaced with advanced heat exchangers and high-efficiency heaters, and waste heat from one refining process should be utilised to power another. Reducing energy waste is found to be effective.

## A question which demands even more study is hydrogen waste in crude oil refineries

- We have seen tanker quality improve at the transportation stage, emitting less CO<sub>2</sub>, SO<sub>2</sub>, and NO<sub>x</sub>. Fleets have become hybrid, and there are many more inroads of H<sub>2</sub> and electric ones. 

*Note: The responses of various experts featured in this story are their personal views and not necessarily of the companies or organisations they represent. The full interviews are hosted online at <https://www.iedcommunications.com/inter-views>*

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## Reducing Downtime in Critical Industrial Operations

Axis Solutions remains committed to delivering innovative, reliable solutions that empower industries, says **Dr Bijal Sanghvi**.

**R**educing downtime in critical industrial operations is essential to maintaining productivity, minimising costs, and ensuring safe, reliable plant performance. Downtime, whether planned or unplanned, directly affects the efficiency and profitability of industrial facilities. Axis Solutions Pvt Ltd, a leader in analytical instrumentation, automation products, and system solutions, has developed specialised expertise to reduce downtime in various industrial settings, contributing to streamlined processes and optimised operational efficiencies. This summary will explore the critical roles of analytical, instrumentation, and automation solutions, emphasising Axis Solutions' strategies and successful approaches for managing downtime.

**Downtime is a significant challenge across industries, from oil and gas to pharmaceuticals, power generation, and chemicals**

### Importance of downtime reduction in industrial operations

Downtime is a significant challenge across industries, from oil and gas to pharmaceuticals, power generation, and chemicals. Even short periods of inactivity can lead to production losses, increased operational costs, and safety risks. For industries where continuous operation is vital, like refineries or manufacturing plants, reducing downtime is crucial to meeting production targets and quality standards.

### Axis Solutions' expertise in analytical instrumentation, automation products and system solutions

Axis Solutions leverages its extensive experience in analytical instrumentation and



Water analyser for continuous monitoring of quality.



automation to enhance productivity and reliability across various industries. Their solutions focus on ensuring accurate, real-time monitoring, rapid diagnostics, and system integrations that prevent failures, optimise performance, and promote predictive maintenance.

### Analytical solutions in critical industrial operations

In industries like oil and gas, water treatment, and power generation, precise analysis of chemical properties, gas composition, and water quality is fundamental. Axis Solutions provides advanced analytical instruments, such as gas analysers, thermal conductivity analysers, and other process analysers, which are essential for process monitoring and control. These tools ensure compliance with environmental and safety standards while helping detect potential issues before they escalate into costly downtimes.

#### Examples of critical applications

- **Oil & Gas:** Gas composition analysis in refineries for process optimisation and emission control.
- **Water Treatment:** Continuous monitoring of water quality to maintain compliance with regulatory standards.

- **Power Generation:** Measurement of flue gas emissions to prevent environmental violations and optimise combustion.

### Approach to reducing downtime

Axis's analytical instruments are designed for durability and high precision, minimising the need for frequent calibration and maintenance. Additionally, Axis employs a proactive approach to monitoring and diagnostics, using advanced analytics to predict potential failures. This predictive maintenance approach allows facilities to address minor issues before they become major disruptions, significantly reducing unplanned downtime.

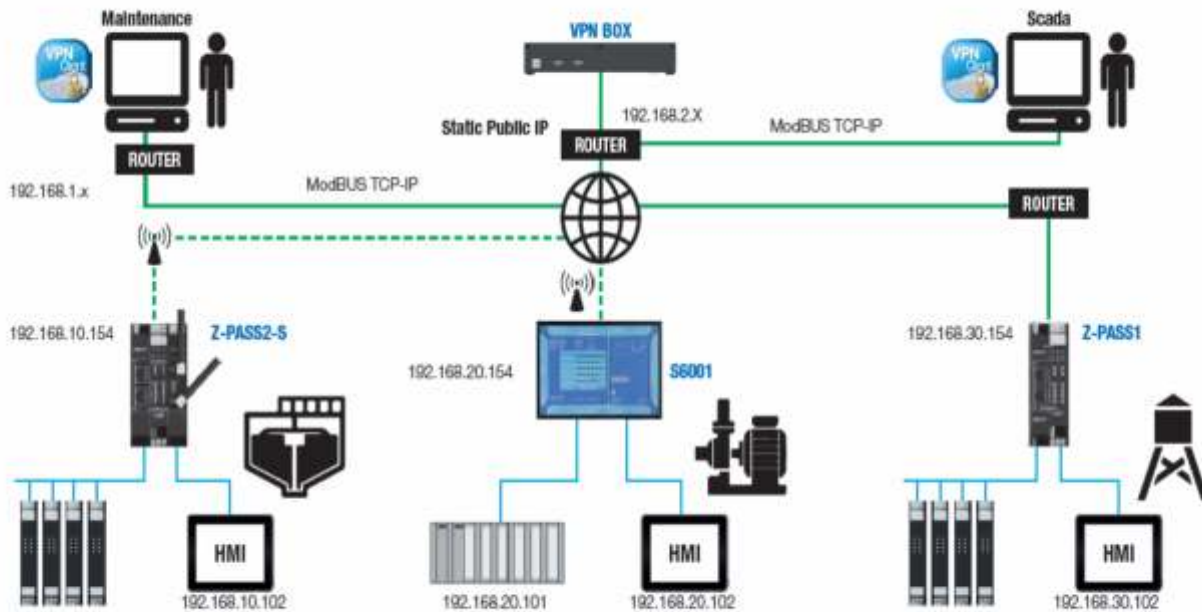
### Instrumentation solutions in critical industrial operations

Instrumentation systems, such as pressure, temperature, and flow sensors, play a critical role in controlling and monitoring various aspects of industrial processes. Axis Solutions offers robust instrumentation solutions that maintain the accuracy and stability of critical parameters, ensuring safe and efficient operations across sectors.

#### Examples of critical applications:

- **Chemical Manufacturing:** Monitoring of pressure and temperature in reactors to prevent hazardous reactions.





Remote connectivity solution.

- **Pharmaceuticals:** Control of temperature and humidity in production areas to ensure product quality.
- **Food & Beverage:** Regulation of flow and pressure in production lines for consistent product output.

### Approach to reducing downtime

Axis integrates advanced instrumentation with real-time monitoring systems, ensuring continuous oversight of key parameters. This approach includes IoT-enabled sensors that provide instant alerts on deviations, allowing teams to address issues before they lead to shutdowns. Axis Solutions' instrumentation products are also designed to withstand harsh industrial environments, ensuring long-lasting reliability with minimal maintenance needs.

### Automation solutions in critical industrial operations

Automation is vital in reducing human intervention, minimising errors, and ensuring continuous, efficient operations. Axis Solutions provides end-to-end automation solutions, including programmable logic controllers (PLCs), distributed control systems (DCS), and advanced software along with Protocol Converters and Ethernet Switches following the IEC 62443 Internationally Recognised Data Protection standard for process optimisation. These solutions streamline operations,

enhance safety, and allow for rapid response to process changes.

### Examples of critical applications

- **Power Generation:** Automated control of boilers and turbines to optimise power output and fuel efficiency.
- **Mining:** Remote operation and monitoring of heavy equipment to minimise risks and improve productivity.
- **Automotive Manufacturing:** Automation of assembly lines for consistent and high-speed production with minimal downtime.

**Axis Solutions also understands the importance of future-proofing in the rapidly evolving industrial landscape**

### Approach to reducing downtime

Axis Solutions' automation systems are equipped with intelligent diagnostics and self-healing capabilities, allowing rapid response to potential failures. The automation frameworks are designed for seamless integration with existing systems, minimising the complexity and downtime associated with upgrades. Axis also emphasises redundancy and failsafe mechanisms, which keep critical operations

running smoothly even in the event of a system component failure.

### Benefits of Axis Solutions' downtime reduction strategies

The approaches Axis Solutions employs for downtime reduction provide measurable benefits across several dimensions:

- **Enhanced Safety:** By enabling real-time monitoring and rapid response, Axis Solutions reduces the risk of equipment failures and hazardous incidents.
- **Cost Savings:** Minimising downtime translates directly to lower operational costs, as plants avoid expensive repairs and the costs associated with lost production.
- **Operational Efficiency:** Continuous monitoring and automation keep operations running at optimal levels, reducing waste and improving overall output.
- **Predictive Maintenance:** Axis Solutions' predictive maintenance capabilities allow for planned maintenance schedules that minimise disruptions and extend the lifespan of critical equipment.
- **Regulatory Compliance:** Accurate, reliable data from analytical and instrumentation solutions helps industries meet regulatory standards and avoid fines or penalties.

**Axis Solutions' strategic approaches to reducing downtime are integral to supporting the efficiency, safety, and profitability of critical industrial operations**

## Axis Solutions' unique approaches to addressing downtime

Axis Solutions focuses on a few key strategies to ensure that its products and solutions significantly reduce downtime:

- **Robust Product Design:** Axis Solutions engineers its products to endure challenging industrial environments, ensuring they require minimal maintenance while delivering consistent performance.
- **Customised Solutions:** Understanding that every industry has unique requirements, Axis provides tailored solutions that integrate seamlessly with existing infrastructure, allowing for smooth and non-intrusive upgrades.
- **Proactive Diagnostics and Predictive Maintenance:** By utilising advanced analytics and IoT technology, Axis's products support

predictive maintenance, enabling customers to preemptively address potential issues.

- **Integrated Systems Approach:** Axis emphasises holistic solutions that bring together analytical instrumentation, automation, and monitoring systems into a cohesive framework. This approach not only streamlines operations but also simplifies troubleshooting and maintenance.

## How Axis Solutions can be helpful in critical industrial operations

Axis Solutions' experience in industrial automation and instrumentation makes it an ideal partner for industries looking to minimise downtime. The company's comprehensive portfolio includes products and systems tailored to a wide range of industries, from petrochemicals to water treatment and power generation. Axis Solutions' customer-centric approach, combined with its technological expertise, enables it to provide solutions that are reliable, efficient, and tailored to specific industrial needs.

## Future-proof solutions

Axis Solutions also understands the importance of future-proofing in the rapidly evolving industrial landscape. The company continuously invests in research and development, bringing the latest innovations in

automation, remote monitoring, and AI-based diagnostics to its clients. This forward-thinking approach helps clients stay competitive, reduce their long-term costs, and ensure that their operations are prepared for future demands.

In summary, Axis Solutions' strategic approaches to reducing downtime are integral to supporting the efficiency, safety, and profitability of critical industrial operations. Through its advanced analytical, instrumentation, and automation solutions, Axis Solutions remains committed to delivering innovative, reliable solutions that empower industries to operate at peak performance with minimal disruptions.



*Dr Bijal Sanghvi is the Managing Director of Axis Solutions Pvt Ltd, a distinguished first-generation company having a Domestic as well as Global Presence, which has achieved*

*remarkable milestones. His role spans across various verticals ranging from managing the overall development and operations of the firm with leadership roles across business strategy, business development and management of various business functions such as Production, Engineering, Manufacturing and R&D.*

## HIMA expands in India to elevate rail and process safety

HIMA Group, a global leader in safety-related automation solutions for the Process and Railway industries, has announced the opening of its first facility in India. The inauguration ceremony was held on 21 November and prominent figures from India's Industrial Safety and Rail sectors, as well as key members of HIMA's global leadership team, attended.

This expansion marks a significant step in the company's international growth strategy, aligning with India's Vision 2047 (Viksit Bharat), a national initiative aimed at transforming India into a developed nation by 2047. By leveraging over 50 years of certified safety expertise, HIMA is set to provide localised safety solutions that will address the growing needs of India's industrial and rail sectors.

Steffen Philipp, Managing Partner and Shareholder of HIMA Group, expressed his



enthusiasm about the company's future in India, stating, "We are excited to support India's transformational journey and contribute to the improvement of its rail and process infrastructure safety."

HIMA's new Indian facility will bring advanced safety automation solutions to the local market, emphasizing the importance of the digitalisation

of functional safety, and taking OT security into account. The company will focus on developing and implementing localized safety applications to address the specific needs of the Indian industrial landscape, contributing to the protection of both people and the environment. The facility will support key industries such as rail, chemical, petrochemical and Oil & Gas, ensuring that these sectors benefit from the latest safety standards and technologies.

HIMA's expansion into India is about more than just establishing a physical presence; it's about nurturing long-term business relationships that will drive mutual growth. The company will engage in partnerships with Indian firms, contributing to local workforce development and innovation. HIMA's expertise will help train and develop India's next generation of safety professionals.

# Advertisers **Index**

## DECEMBER 2024



Advantech Industrial Computing India Pvt Ltd	7
AlStrut India Pvt Ltd	C - II
Apexix	35 & 51
Axis Solutions Pvt Ltd	17
Delta Electronics India	3
Edmund Optics India Pvt Ltd	C - III
EIP Enviro Level Controls Pvt Ltd	31
Endress+Hauser (India) Pvt Ltd	9
Global Teknocrats Inc	43
Icotek India Pvt Ltd	39
Mitsubishi Electric India Pvt Ltd	13
MOXA India	15
Novimeq Automation by EPIQ	25
Prima Equipment	19
ReeR Safety India Pvt Ltd	47
Rittal Private Limited	C - IV
UWT Level Control India Pvt Ltd	27

### Companies featured in this edition

Company Name	Page No.
Advantech Industrial Computing India Pvt Ltd	46
Ametek Inc/Virtek Vision International	67
AqTronics Technologies Pvt Ltd	73
ARC Advisory Group	30
Atlas Copco (India) Pvt Ltd	49
Autodesk	16
Baumer Management Services AG, Switzerland	73
Climaveneta Climate Technologies	49
Damson Technologies	14
Druk Green Power Corporation Ltd	18
EIP Enviro Level Controls Private Limited	70
Endress+Hauser (India) Pvt Ltd	37 & 70
Energy Consortium – IIT-Madras	18
esmo Singapore, Singapore	74
European Continental University	60
FAULHABER Asia Pacific Pte Ltd, Singapore	76
Festo Controls Pvt Ltd	77
Geek+	41
GEMÜ Gebr. Müller Apparatebau GmbH & Co KG, Germany	72
GlobalLogic	16
HARTING Technology Group	77
HellermannTyton GmbH, Germany	75
HIMA Group	34
icotek India Pvt Ltd	71
igus (India) Private Limited	77
Indian Institute of Technology Bombay	16
Indian Institute of Technology Delhi	67
Instrumentation Experts Club	56
LAPP India	12
NMDC Limited	14
NORD Drivesystems Private Limited	14 & 72
NTPC Limited	12
Otto Ganter GmbH & Co KG	76
Parker Hannifin India Pvt Ltd	75
Pepperl+Fuchs (India) Private Limited	75
Phoenix Contact (I) Pvt Ltd	75
Pollution Control India	18
Portescap India	74
Prima Equipment	38 & 72
Rabatex Industries	50
revalyu Group	54
Rockwell Automation India Pvt Ltd	77
Rohde & Schwarz India	12 & 74
Runaya Private Limited	52
Sandvik Asia Pvt Ltd	74
Schmalz India Pvt Ltd	76
Seco Tools India (P) Ltd	73
Tata Power Company Ltd	18
Teledyne Gas & Flame Detection	18
TURCK India Automation Pvt Ltd	73
ULVAC Singapore Pte Ltd – India Branch	76
UWT Level Control India Pvt Ltd	42 & 71
Watlow	16

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