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CO2 risk is now structural, not seasonal, says Nippon Gases

By **Anthony Wright** on Jan 23, 2026

When it comes to navigating structural change in the CO2 market, Europe's Nippon Gases is increasingly focused on redesigning its supply chain for resilience rather than reacting to short-term volatility.

Speaking during a recent **gas**world webinar, Angelica Cortinovis, Renewable Energy Business Manager at Nippon Gases, said persistent energy price swings, plant closures and seasonal peaks are reshaping how suppliers plan for the years ahead.

"Closures, the energy price swings, the seasonal peaks, are still impacting the CO2 market [in Europe and around the world], and that of course changes everything about planning," she said. "It's not about reacting to short-term volatility, but it's about redesigning our whole supply chain."

That redesign, she explained, centres on diversification, plant optimisation and cross-border flexibility to manage regional imbalances.

"It means diversifying sources, optimising our production facilities for reliability and efficiency, but it is also about building cross-border flexibility to balance regional imbalances when there are peak CO2 demands or planned shutdowns," said Cortinovis.

"Without cross-border logistics and alternative sources, customers are likely to face shortages in supply."

She described security of supply and sustainability as inseparable priorities rather than competing objectives.

"Balancing security of supply and sustainability are just the two faces of the same coin," she said. "You cannot ignore one ... without compromising the other one."

On a practical level, Nippon Gases is integrating biogenic CO2 into its supply streams, alongside efforts to improve efficiency across

its European production network.

“We integrate biogenic CO2 in our supply streams, backed by certification to meet food and beverage standards,” said Cortinovis. “We are optimising our network of plants all around Europe.”

She added that on-site recovery solutions are increasingly being developed in collaboration with customers.

“This is a win-win situation for customers, because it limits the risk of shortages, reduces Scope 3 emissions and also reduces transport costs,” she said.

Cortinovis acknowledged that the industry remains heavily dependent on traditional CO2 sources, which are increasingly exposed to energy volatility and policy-driven disruption.

“For decades, the CO2 market relied on ammonia and ethanol plants, and we have all realised that this is a model that is no longer sustainable,” she said.

In response, Nippon Gases is building a broader sourcing portfolio, including biogas upgrading, anaerobic digestion and fermentation recovery, while continuing to use natural CO2 from underground wells for medium- to long-term stability.

“Natural CO2 still plays an important role, because those sources provide predictable availability in the medium to long term,” she said.

Diversification, however, extends beyond sourcing. Cortinovis highlighted the role of gas treatment expertise, cross-border transport, and digital planning tools in maintaining flexibility across Europe. She also noted that this requires sustained investment in storage and logistics infrastructure.

Despite these efforts, she warned that vulnerabilities remain as fossil CO2 sources decline in Europe more quickly than new low-carbon alternatives can reach the market.

“The risk is structural and not seasonal,” she said. “It is the combined impact between climate policies, energy volatility, and infrastructure gaps.”

She added that geopolitical uncertainty and transport bottlenecks further complicated the outlook.

“This is a risk profile that you cannot solve with a short-term contract,” said Cortinovis. “We need to work together with our customers in terms of resilience, certification readiness, quality standards, collaborative planning, and open cooperation. We need to rebuild flexibility into the system.”

CO2 safety and education

When it comes to CO2 safety and smart sensor technology, LogiCO2 is constantly focused on how best to instil confidence in customers and contribute to their development.

By training and certifying well-established partners around the world, it aims to provide the same customer service across a wide range of applications including breweries, wineries, retail, soft drinks, slaughterhouses and ships.

Business Manager Ross Olsen described its work as “pretty narrow” in the broader sphere of CO2 but recognised its safety systems impact a lot of people.

During the webinar, he highlighted some new safety additions and opportunities in refrigeration as more companies switch away from harmful F-gases.

“As these large supermarket chains and food freezing facilities switch to CO2, there needs to be safety involved,” he said. “As the refrigeration systems get bigger, the risk increases. One of our larger programmes in 2025 was in central and south America – there is an enormous facility in Guatemala, for example, where you could park a Zeppelin in it, and the amount of CO2 needed to keep that freezer cold is enormous. Elsewhere we did another big push in Australia.”

LogiCO2 has been handling data integration for a number of years, primarily around two key areas.

“The first is collecting data for employers to report exposure risks for employees, and the other avenue is connecting building management systems – we’ve done this with a very large well-known name across Canada, it’s about providing real time CO2 tracking and building management for efficiency,” said Olsen.

“Every manager has a matrix that they are measured against, and CO2 exposure is another matrix where managers are being held accountable. We’ve seen [growth in] real time leak detection, and employee exposure levels and streamlining operations – CO2 is expensive, and is only going to get more expensive.”

Education will remain another core focus moving into 2026.

“The best tool I’ve found is a one-on-one meeting with sales people and technicians who install the equipment,” he said. “We have quite a few meetings lined up at trade shows, and we’re working on small documentaries and have some fun things in the pipeline – it’s all about getting real world installations out to the public to keep people safe, and see how easy it is.”

Biogenic CO2 is ‘prized’

Stephen B. Harrison, Managing Director and Founder of sbh4 consulting, outlined the changes in CO2 souring models and need for new sources to meet commercial demand, and explained the potential of biogenic CO2 from biogas digesters and competition from “a vibrant” voluntary carbon market.

“Liquefaction of the captured biogenic CO2 is low cost because it requires minimal additional capital expenditure and operational expenditure,” he said. “Biogenic CO2 is now prized for its ability to permanently remove CO2 from the atmosphere and there is now tremendous competition for biogas derived from CO2, which is driving up prices [up to €200 a tonne]. Alternative CO2 sources must be found to enable industrial gases or properties to serve their customers reliably and protect emerging CO2 revenue streams.”

He added that with the biogenic CO2 market being targeted for CO2 removal, the most attractive merchant CO2 sources will shift to other industry sectors.

During his presentation he also reflected on CO2 capture industrial developments in the GCC, highlighted the importance of partnerships and capital investment in scaling up CO2 management infrastructure, and emphasised the opportunities in the emerging energy-to-waste sector.

“For my money, that fossil CO2 fraction from waste-to-energy CO2 capture schemes will be a major opportunity for industrial gases companies to source low-cost CO2 for their merchant businesses,” he said. “That’s where I see the next frontier.”

To watch the webinar on demand, click **here**

European CO2 Summit 2026

The **European CO2 Summit 2026** will be held from 17–19 March in Rotterdam, bringing together industrial gas companies, CO2 suppliers, technology providers, policymakers and investors to examine how the CO2 value chain is evolving.