

Insights



SCILA SURVEILLANCE INSIGHTS

Surveilling Japan's power market

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Keeping pace with a complex market

Exchange trading is established in Japan's power market alongside developed balancing arrangements, financial power trading, and a range of active domestic and international participants.

For surveillance teams, this creates a complex environment. Trading activity often needs to be assessed alongside market conditions, physical generation, and related exposures, as unusual behaviour cannot always be understood from the transaction alone.

As participation broadens, market surveillance plays a role in supporting fair and transparent markets.

Japan's market structure creates a distinct surveillance context

The Japan Electric Power Exchange (JEPX) operates at the centre of Japan's short-term wholesale power market. Its day-ahead market trades 48 half-hour products through a blind single-price auction, while intraday trading allows participants to adjust positions closer to delivery.

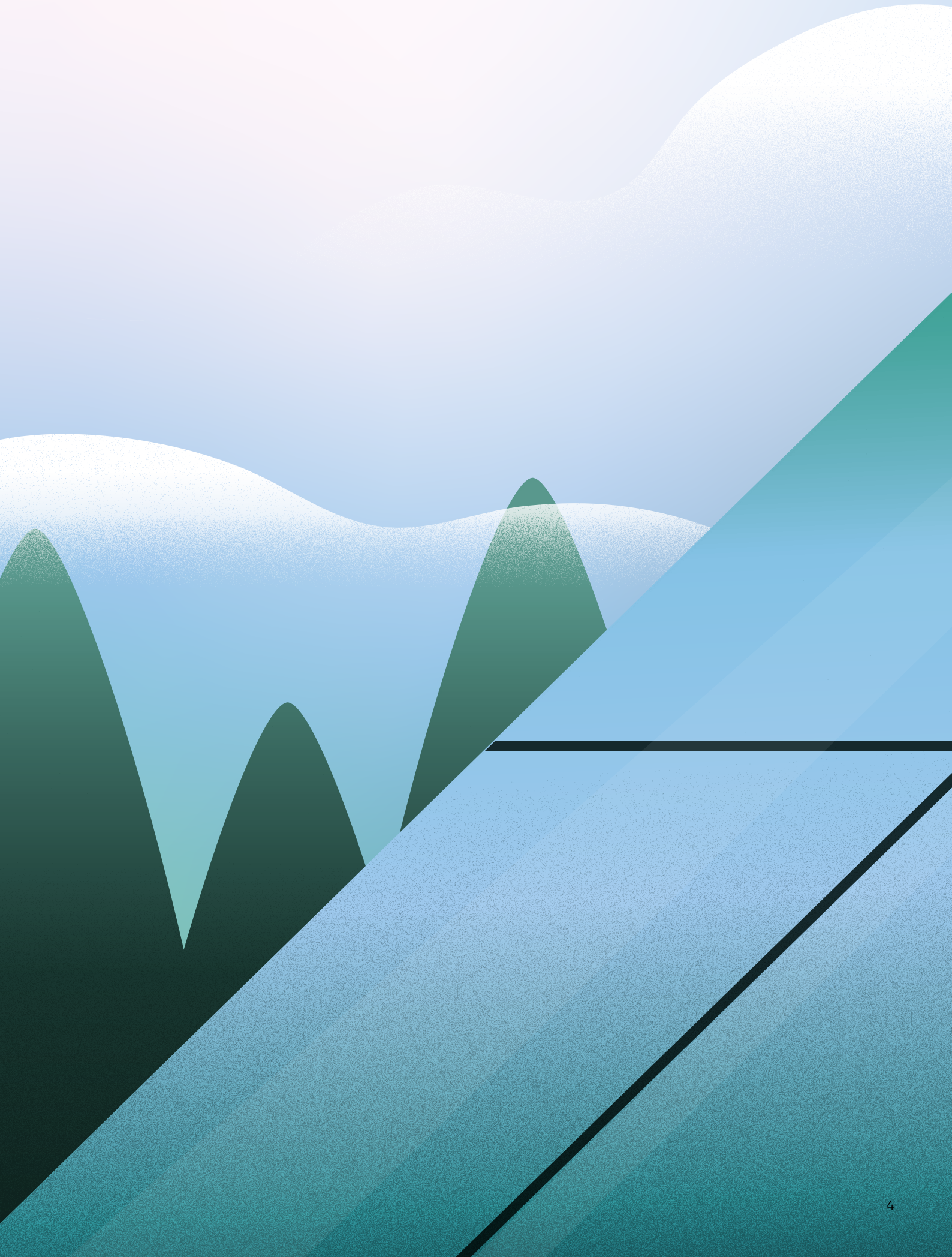
Japan's regional market structure adds another layer of complexity. JEPX publishes prices across nine interconnected areas - Hokkaido, Tohoku, Tokyo, Chubu, Hokuriku, Kansai, Chugoku, Shikoku, and Kyushu - alongside a system price. Transmission constraints between these areas can result in different regional prices for the same delivery period.

From a market surveillance perspective, activity cannot always be assessed against a single national price. The relevant context may include the participant's location, regional generation availability, inter-area constraints, and the relationship between system and area prices.

JEPX publishes system and area prices, bidding curves, and price-sensitivity information, providing context around how orders influence market prices and execution likelihood.

Additionally, Japan's supply-demand balancing market includes five trading balancing-capacity products.

As a result, the same underlying asset can have relevance across regional spot pricing, intraday activity, balancing, and financial products, each with different economic and operational drivers.



What should surveillance look for?

Several risk scenarios are particularly relevant where exchange trading, physical generation, and financial exposure interact:

- **Economic withholding:** Available generation is offered at prices that materially reduce the likelihood of getting traded. Surveillance needs to distinguish potentially unusual behaviour from legitimate fuel costs, start-up economics, scarcity, and technical constraints.
- **Physical withholding:** Capacity appears to be available but is not offered. Identifying this requires data beyond exchange orders and depends on asset availability, outages, operational constraints, and physical information.
- **Auction-price influence:** Unusually large or strategically priced orders have the potential to influence market prices or the execution likelihood of other orders, particularly during periods of regional constraint or where the participant has a related economic exposure.
- **Cross-market behaviour:** Activity becomes significant when spot, intraday, balancing, or financial positions are considered together.

The aim is to determine whether unusual activity remains unexplained once the wider market and physical context are considered.

When the absence of an order matters

Recent enforcement in Japan provides an example of how these risks appear in practice.

In 2024, Japan's Electricity and Gas Market Surveillance Commission acted against a power company after finding that, over several years, part of the surplus output associated with generation units being shut down had not been offered into the day-ahead spot market. The regulator concluded that the conduct amounted to market manipulation because the participant was aware that the non-offering could affect market prices.

Subsequent regulatory analysis found that around 5.4 billion kWh had not been offered over several years. In some periods, the regulator estimated that the effect increased market prices by more than ¥50/kWh.

The surveillance lesson: there may be no unusual exchange order for a conventional surveillance system to detect.

Instead, identifying potential physical withholding requires comparing what was available against what was offered. Asset capacity, outages, technical constraints, and physical information may need to be assessed alongside the order book. Japan provides operational disclosures to support this, including mandatory public reports on power plant availability and outages.

Different market, similar surveillance challenge

A separate enforcement case in the Asia-Pacific Region demonstrates another issue.

In a regional electricity-futures market, a firm was sanctioned after clients entered suspicious orders in the final moments of trading. The activity affected settlement prices in a direction favourable to existing positions and displayed characteristics consistent with marking the close.

While a more familiar market-abuse scenario, the lesson remains relevant: generic manipulation alerts are often insufficient. Surveillance parameters need to reflect the specific characteristics of the power products, settlement mechanisms, trading windows, and reference prices being monitored.

Together, the two cases highlight the breadth of the surveillance challenge: one involves suspicious market orders, while the other involves electricity withheld from the market. Effective power surveillance addresses both.

Surveillance across physical and financial power markets

JEPX remains central to physical spot trading, while EEX operates a Japanese power derivatives market across Tokyo, Kansai, and Chubu. EEX Japanese power products can be economically linked directly to JEPX prices. For example, Tokyo and Kansai monthly options are settled against the average JEPX spot price for the relevant area.

This creates a cross-market surveillance consideration. Activity in the physical market may have relevance to a participant's financial exposure, while derivatives positions can provide context for activity around spot-market prices.

Exchange-traded derivatives require scenarios such as marking the close, unusual order activity, and price manipulation. Physical markets introduce questions around asset availability, bidding behaviour, and withholding. Where products are economically linked, surveillance evaluates the relationship between the two.

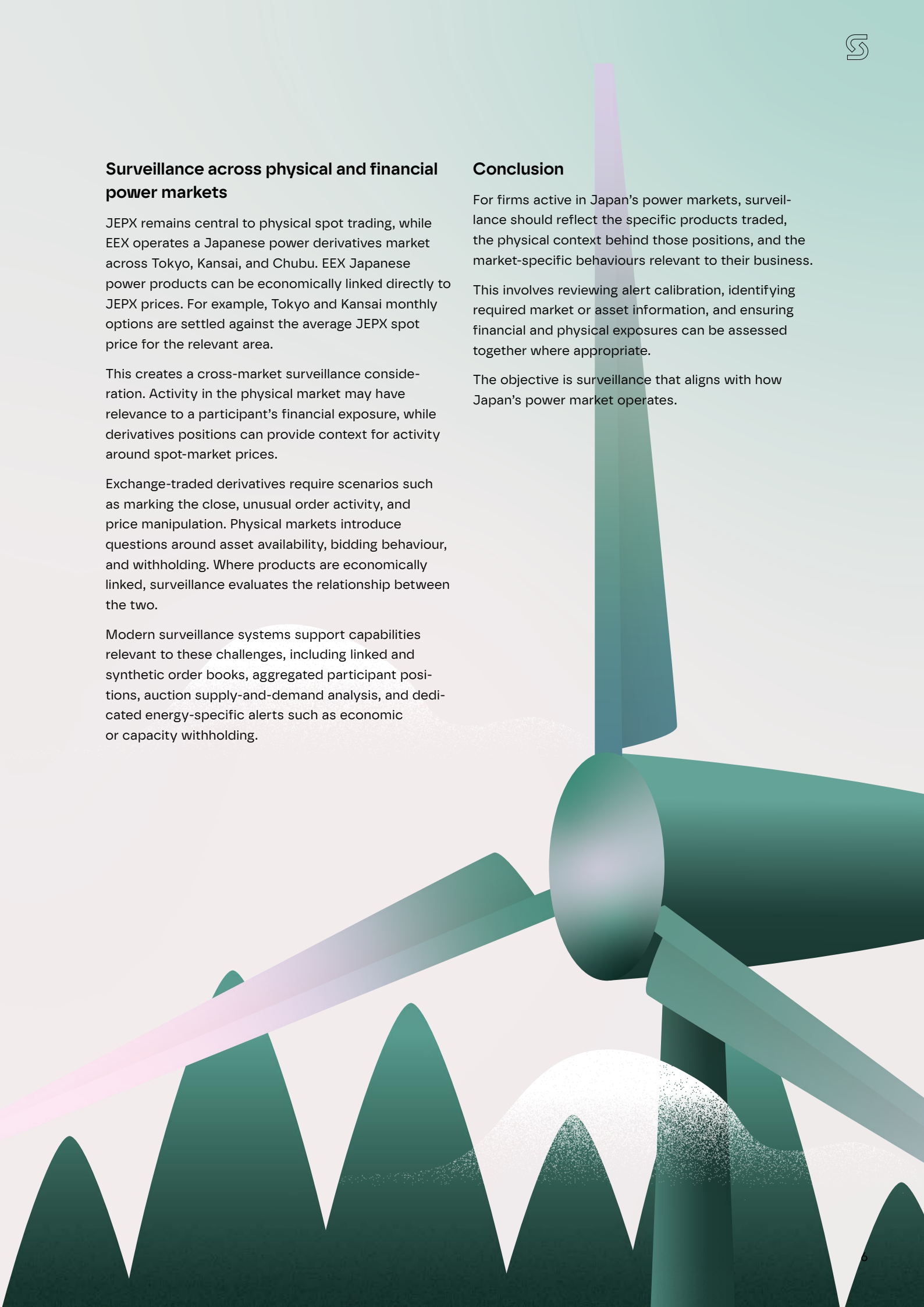
Modern surveillance systems support capabilities relevant to these challenges, including linked and synthetic order books, aggregated participant positions, auction supply-and-demand analysis, and dedicated energy-specific alerts such as economic or capacity withholding.

Conclusion

For firms active in Japan's power markets, surveillance should reflect the specific products traded, the physical context behind those positions, and the market-specific behaviours relevant to their business.

This involves reviewing alert calibration, identifying required market or asset information, and ensuring financial and physical exposures can be assessed together where appropriate.

The objective is surveillance that aligns with how Japan's power market operates.



About Scila

Scila is a provider of trade surveillance and risk management solutions for market participants, marketplaces, and regulators.

Founded in Stockholm in 2008, the company delivers technology designed to help clients manage market surveillance, risk management, and regulatory compliance.

Scila offers two main product platforms:

Scila Surveillance: a market surveillance solution.

Scila Risk: a multi-asset risk management platform.

The company delivers solutions tailored to specific client requirements across different financial markets.

Its client base includes exchanges, financial institutions, and regulatory bodies globally.

Scila is headquartered in Stockholm, Sweden, with offices and local representation in Chicago, London, Paris, and Singapore.

The Scila logo consists of a stylized 'S' icon followed by the word 'SCILA' in a bold, uppercase, sans-serif font.

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