

ENERGY AND COMMODITIES

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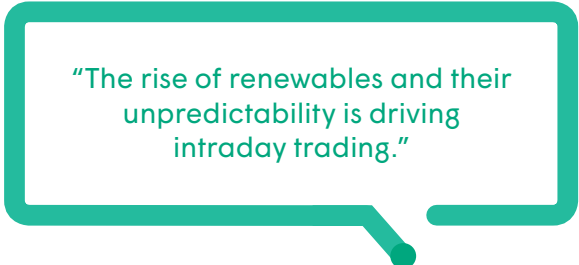
THE STATE OF SHORT-TERM POWER TRADING IN EUROPE

Driven by a number of dramatic shifts across a variety of business areas, European power trading is now increasingly focused on short-term markets. Factors such as the rapid and massive move in generation to more unpredictable renewable sources, the impact of smart grid and smart devices on the demand side and the European Union's push for a single energy market have all contributed to moving the trade opportunity closer to the point of dispatch. As a result, continuous intra-day power markets have begun to flourish and, as the speed and volume of data has accelerated, automated trading has increasingly been used as a tool to respond to these challenges.

We investigated the rise of automated trading in short-term markets and its potential impact on the industry. We invited Gary Vasey, Partner and Managing Director of ComTech Advisory to moderate the discussion with three industry experts:

- **Philippe Vassilopoulos**, EPEX SPOT
- **Chris Whellams**, Nord Pool
- **Simon Tywuschick**, Baringa Partners

This paper gives an insight into the discussion and outlines what we learned.



"The rise of renewables and their unpredictability is driving intraday trading."

The rise of intraday trading

The rise of renewables and development of the smart grid have had a significant impact on European power and gas trading. Intraday power trading is on the rise in countries like Germany and the UK, where trade signals can occur rapidly and the volume and velocity of information available to traders can be almost overwhelming. EPEX, Nord Pool and others now actively support intraday trading across the Nordics, Germany, Switzerland, UK, and France. Recently, EPEX Spot and ECC introduced 30-minute continuous trading of power spot contracts on the intraday markets in France, Germany and Switzerland, while Nord Pool offers up to 0 min gate closure in Germany and 30 and 60 minutes in UK and the Nordics and Baltics.

Meanwhile, the European Commission has established some of its objectives for intraday trading and these are based on continuous energy trading where cross-zonal transmission capacity is allocated through implicit, continuous allocation. Additionally, European power exchanges, such as EPEX SPOT, GME, Nord Pool, and OMIE, have also responded by setting up transparent, continuous intraday trading environments to facilitate the trade out of intraday positions. Furthermore, the power exchanges, together with the Transmission System Operators (TSOs) from 12 European countries, launched the XBID Market Project to create an integrated intraday cross-zonal market that will allow continuous cross-zonal and intraday trading on the single cross-zonal intraday market across Europe¹. This solution will help to create and facilitate an integrated European intraday market. Additionally, ancillary services markets are also going intraday, providing traders with a choice to trade with either the TSOs or to the exchanges on an intraday market, which will increase flexibility, but may reduce liquidity on the continuous intraday power market.

Automated trading

While automated trading with robots has been a feature of the broader financial markets for some time now, the commodity and spot commodity markets have lagged in its adoption. In fact, it arguably took the launch of the intraday continuous spot markets by EPEX and Nord Pool to create an environment in which automated trading was not just attractive, but in some instances perhaps, necessary. The rise of automated trading in these markets can be seen as a direct consequence of the human brain's limits to handle data and decision making in such a high speed and data intensive environment, according to Philippe Vassilopoulos of EPEX. Meanwhile, Nord Pool's Chris Whellams expects to see automated trading activity levels continue to increase to the point that quantitative traders may eventually replace more traditional traders. Baringa's Simon Tywuschick broadly agrees, suggesting that small to medium traders are using automated trading to bring their positions to market offering them significant operational efficiencies and cost savings while helping to prevent errors.

Increasingly, intraday traders find themselves in between unpredictable renewable generation on one side and a smarter grid on the other, requiring almost instantaneous reactions on their part. In markets such as Germany with 15-minute increments, the human trader is faced with vast amounts of near real-time data, trends and events. Automated trading using bots makes sense in this high-pressure environment, whether those algorithms simply identify the trade and require the trader to perform it, or the trading is fully automated via an API to the exchange. Our three experts unanimously see a potential trend away from traditional traders toward automated trading with analysts mainly focused on defining trading strategies.

¹https://www.epexspot.com/en/market-coupling/xbid_cross_border_intraday_market_project

Market participants

As these markets are physical markets, the players involved also tend to be physical traders and so far, the larger banks and hedge funds do not appear to be as involved. In fact, Mr. Vassilopoulos sees them as ideal for small and more agile players as larger traders tend to be subject to more regulations and have invested less in the past. Mr. Whellams largely agrees, saying that participation comes down to appetite and skills in a physical market where traders have to be able to either produce or consume power. Pure speculation in these markets is very risky due to the strong possibility of an imbalance and penalties and large financial players are unlikely to enter as these are physical markets requiring both physical power market expertise and the IT staff to do so. These risks can be balanced out with intraday auctions that allow traders to refine physical positions before final balancing measures are taken by the TSOs. Intraday auctions have already started in the Nordic and Baltic regions, Germany and the UK and there are likely to be more in the future. While they may take some volume away the continuous market, Mr. Vassilopoulos sees better price reference and more liquidity there.

Regulations?

Although all parties in the industry are currently adapting to these continuous spot markets in power and gas, both the exchanges and the regulators are likely monitoring developments. The exchanges are monitoring trade activity and if they or the regulators see any manipulation or abuse, they will likely act. Manipulation of cross-border capacity in spot power is already an issue but regulation is probably still a long way off as these markets remain small and are not liquid enough yet. Certainly, these markets cannot be defined as financial (though that may be best addressed by a lawyer), they are currently not covered by many existing regulations. However, there is an increased emphasis around trade surveillance generally and it could well be that at some point in the future, bot trading will become the subject of some additional, all-encompassing regulations around their use in markets as well.

The Role of Capacity

Capacity is always an issue especially for cross-border trading. Exchange products, including implicit capacity and auctions are available for explicit capacity; however, at the end of the day, capacity is limited to the actual infrastructure on the ground. There are also some pilots at exchanges offering products around transmission rights for participants, but the issue of infrastructure and how fast TSOs can adjust the grids remains, according to Mr. Tywuschick.

What impact will this have on OTC bilateral trading? The three experts agreed that OTC trading will always be around, but the degree of OTC trading activity will depend on regional market characteristics to some extent. For example, in the Nordics, OTC trading is thinner and the transmission operators have given all of their cross-border capacity to the exchanges (implicit capacity) whereas the UK has a buoyant OTC market, Mr. Whellams tells us. All of the experts agree that if regulations or standards dictate that capacity becomes implicit then there will be a trend toward the exchange. Mr. Tywuschick also points out that it is difficult to create a spot OTC market for intraday due to the frequency of trading – with no time to call counterparties, automated trading is simply more attractive. He therefore suggests that spot markets will be exchange-based.

Systems in an intraday environment


The biggest challenge the experts see on the systems side is the need for integration across a variety of disparate platforms and solutions in a near real-time environment expressed as a general move to automation across the board. In essence, automated trading is just one aspect of how intraday trading needs to be conducted in the future, while greater integration across power generation forecasting, load forecasting, weather, outages and other types of systems is needed along with a means to allow traders to visualize that information in a meaningful way. In the future, the collection of supply, demand and disruption data will be automated in real time, requiring artificial intelligence or machine learning capabilities. In result, the market will require the intraday trading software to support an increased demand for visualization, big data capabilities and integration via standard APIs.

Summary

Intraday trading is a growing feature of European power and gas trading but its impact remains somewhat regional at the moment. For example, currently in the Nordics, intraday trading has quite a small volume as there are not many renewable power generation sources to drive it and the hourly market trading. On the other hand, the German market has a growing intraday component with significant solar and wind and 15-minute increments, making it almost physically impossible to track everything inside a trader's brain. The UK market lies somewhere in the middle with 30-minute resolution and growing renewable power generation.

In essence, it is the rise of renewables and their unpredictability that is driving intraday trading. As more renewables come into play, the need to balance with more frequency also rises. As this trend continues, more real-time automation and integration is required to cope at the system level. Big data and bot trading will play an increasingly bigger role in intraday markets. Indeed, it can be argued that markets that adopt 15-minute increments can only be traded efficiently using robots. Presently, there is already a need for a different flavor of trading software to help manage intraday power and gas markets – one that supports automated trading via APIs with the exchanges, while allowing traders or bots to observe vast amounts of data at increased velocity in a meaningful way.

The challenges around intraday power and gas markets in the future will revolve around how they actually develop with respect to issues like the role of implicit versus explicit capacity, the role of the regulators and the oversight they determine might be required, the role of auctions versus continuous intraday spot trading, and the need for integration and automation across the supply chain from supply to consumption. This in turn will drive the evolution of the systems and technology. Automated trading using bots is on the rise in intraday markets where the velocity and quantity of data in a short time frame is forcing automation.



“Big data and robot trading will play an increasingly bigger role in intraday power markets.”

More about the participants of the paper

Dr. Gary M. Vasey, Partner and Managing Director, ComTechAdvisory

Dr. Gary Vasey is an industry expert noted for his analysis, consulting, marketing and branding skills. With over 29-years' experience in the energy and commodities trading industry, Mr. Vasey has experienced the industry's volatility as an executive of a trading firm, geologist, consultant, software developer, analyst and marketing practitioner, providing him with unique insights, not just into the entire value chain, but also into how to position, brand and deliver products and services to the industry. He is a noted expert on the commodity trading, transaction and risk management software industry and an accomplished industry analyst and thought leader.

Philippe Vassilopoulos, Head of Product Design, EPEX SPOT

Philippe Vassilopoulos is Head of Product Design at EPEX SPOT where he also served as Economist and Market Surveillance Officer. Before joining EPEX SPOT, Mr. Vassilopoulos was an Associate Director with IHS CERA. He specializes in the European wholesale power and gas markets. His expertise includes market design, price formation and price modelling, asset valuation and due diligence, regulations, and market surveillance. Dr. Vassilopoulos also carried out applied research on price signals and investment incentives in the European electricity markets for the Commission de Regulation de l'Energie. He holds a master's degree and a PhD from the University of Paris-Dauphine.

Chris Whellams, CTO, Nord Pool

Chris Whellams is responsible for Nord Pool's tech strategy and future vision. Mr. Whellams works closely with customers, partners and key stakeholders and also represents Nord Pool at industry events and conferences. Mr. Whellams led the transformation and development of Nord Pool's new exchange platform and has worked for over 20 years in the software industry, with extensive experience of financial markets.

Dr. Simon Tywuschik, Director, Baringa Partners

Dr. Simon Tywuschik is a senior energy and commodities expert and business leader with more than 10 years of relevant experience. At Baringa, Mr. Tywuschik is a regular adviser to energy and commodity companies on strategic, regulatory and operational challenges. This includes the elaboration of business and market entry strategies (including due diligence), regulatory reviews (e.g. renewable energy acts, MiFID II/CRD), and execution of complex organizational and technology related transformation projects.

About FIS Solutions for Energy and Commodities

FIS solutions for energy and commodities help utilities and retailers, pipeline and storage operators, marketers and traders as well as integrated energy companies compete efficiently in global markets by streamlining and integrating the trading, risk management and operations of physical commodities and their associated financial instruments. Through real-time data, connectivity and analysis, FIS solutions help you achieve transparency and regulatory compliance, optimize end-to-end transaction and operational lifecycles and meet time-to-market needs with flexible deployment options. As your technology partner, we can help take advantage of the latest innovation and explore new opportunities. For more information, email us at getinfo@fisglobal.com.

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FIS is a global leader in financial services technology, with a focus on retail and institutional banking, payments, asset and wealth management, risk and compliance, consulting and outsourcing solutions. Through the depth and breadth of our solutions portfolio, global capabilities and domain expertise, FIS serves more than 20,000 clients in over 130 countries. Headquartered in Jacksonville, Florida, FIS employs more than 55,000 people worldwide and holds leadership positions in payment processing, financial software and banking solutions. Providing software, services and outsourcing of the technology that empowers the financial world, FIS is a Fortune 500 company and is a member of Standard & Poor's 500® Index. For more information about FIS, visit www.fisglobal.com



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