

Energy know-how in a nutshell

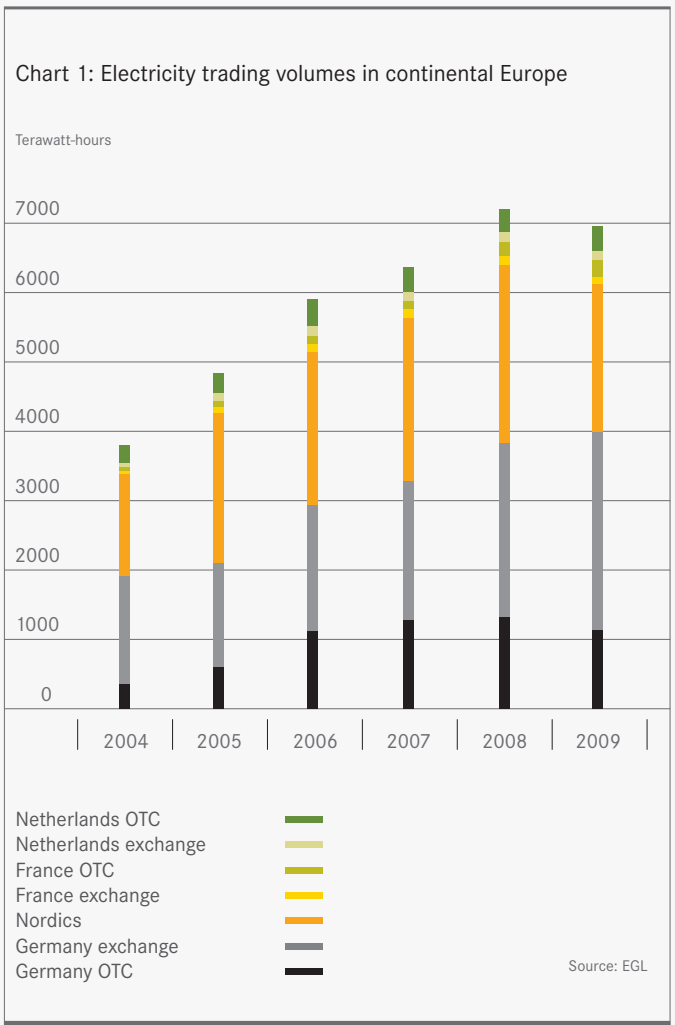
ELECTRICITY TRADING

ELECTRICITY AS A TRADED COMMODITY

DAY AFTER DAY WE CONSUME GOODS WHICH WERE NOT MANUFACTURED IN OUR IMMEDIATE NEIGHBOURHOOD. ALSO ELECTRICITY IS OFTEN NOT GENERATED AT THE PLACE WHERE WE LIVE.

We purchase food, consumables or assets in the preferred quality and at the most attractive prices possible on regional, national and international markets. The same is true of electricity, also a consumer good. Largely unnoticed by consumers, it flows throughout Europe across regional and national borders. From producers it is transported via wholesalers, and in some cases via energy exchanges or other electronic trading platforms, over an extensive transmission network to regional suppliers and from there to private, public and industrial consumers.

International energy exchange is being boosted by the European Union's clear political will to liberalise energy markets and pave the way for more competition. Electricity trading in its present form is a



result of these liberalisation efforts, and simultaneously acts as an instrument for further enhancing competition in the energy markets.

Balancing supply and demand

The inter-regional and international exchange of electricity plays a key role in meeting the social and economic need for a secure and competitive supply of energy. Thanks to access to international energy markets, electricity suppliers can protect themselves and their customers against production outages or price fluctuations. If, for example, it is not possible to produce electricity locally, or only to a limited extent, or if producing electricity locally is not economically viable, the population and industry can be supplied with energy from inter-regional markets.

Moreover, there is a purely physical reason why electricity is traded between regions and countries. Electricity cannot be stored. So a producer for electricity must be found immediately as soon as the energy is needed. This balancing of supply and demand is most successful if electricity producers and consumers meet within as large a geographical radius as possible.

Reliable price signals create security

Inter-regional energy markets and growth in competition offer another advantage: they enable a broad-based comparison of prices for electricity and other forms of energy. Producers and consumers obtain a clear picture of what price is currently justifiable and what price can be expected in the future. The price signals sent out by the international market therefore create security for all market players and provide incentives for long-term investments in large infrastructure projects such as power plants and transmission grids.

This security is all the more important given the large number of factors that influence electricity price movements. On the demand side, these are dependent on fuel prices, climate conditions or the availability of production facilities. On the supply side, such factors include the economic situation or the season and weather situation. The regulatory framework and requirements also dictate electricity costs.

All these factors can result in price fluctuations. Electricity producers and consumers can protect themselves against such risks by reducing their dependence on individual regional or time-related factors. The best way to do this is if they are able to choose from as many offerings as possible on a large, international energy market. The rise in the electricity trading volume in Europe (see chart 1) indicates that more and more market players are making use of this option.

WIDE RANGE OF PRODUCTS AND TRADING CHANNELS

TRANSACTIONS IN ELECTRICITY TRADING CAN TAKE VARIOUS FORMS. FOR EXAMPLE, TRADERS EITHER WORK ON BEHALF OF A CUSTOMER OR ACT ON THEIR OWN ACCOUNT.

In the customer business, traders seek a particular product on the market on behalf of a customer. For example, a trader procures the electricity required by an industrial company or a municipality. Thanks to in-depth knowledge and a wide network of contacts in the energy markets, the trader can guarantee delivery of the agreed volumes of electricity at the agreed price. In return, the customer undertakes to purchase the electricity and pays the trader for his services.

In proprietary trading, traders act on their own account and take the risk of making a profit. For instance, a trader purchases electricity with a view to selling it on later and possibly in another region at a higher price. If he succeeds, drawing on his experience and ability to correctly anticipate market movements, he generates a positive margin. At the same time, by engaging in such transactions the trader helps to keep the market brisk and competitive, making it attractive for both producers and consumers.

Trading with and without delivery

In addition to trading for customers and proprietary trading, electricity trading also differs in another important respect. Electricity trading can entail the physical delivery of the agreed products, as is the case, for example, when supplying electricity to an industrial company. But products of a purely financial nature are also traded on international energy markets. For example, a trader can acquire from an electricity producer the right to purchase a certain quantity of electricity at a defined price at a particular point in the future. He does this either to hedge against price fluctuations, or with a view to speculating. If his right to purchase gains in value because market prices for electricity rise up to the contract fulfilment date, the trader can sell this right on to other interested parties at a profit without purchasing the agreed quantity of electricity himself.

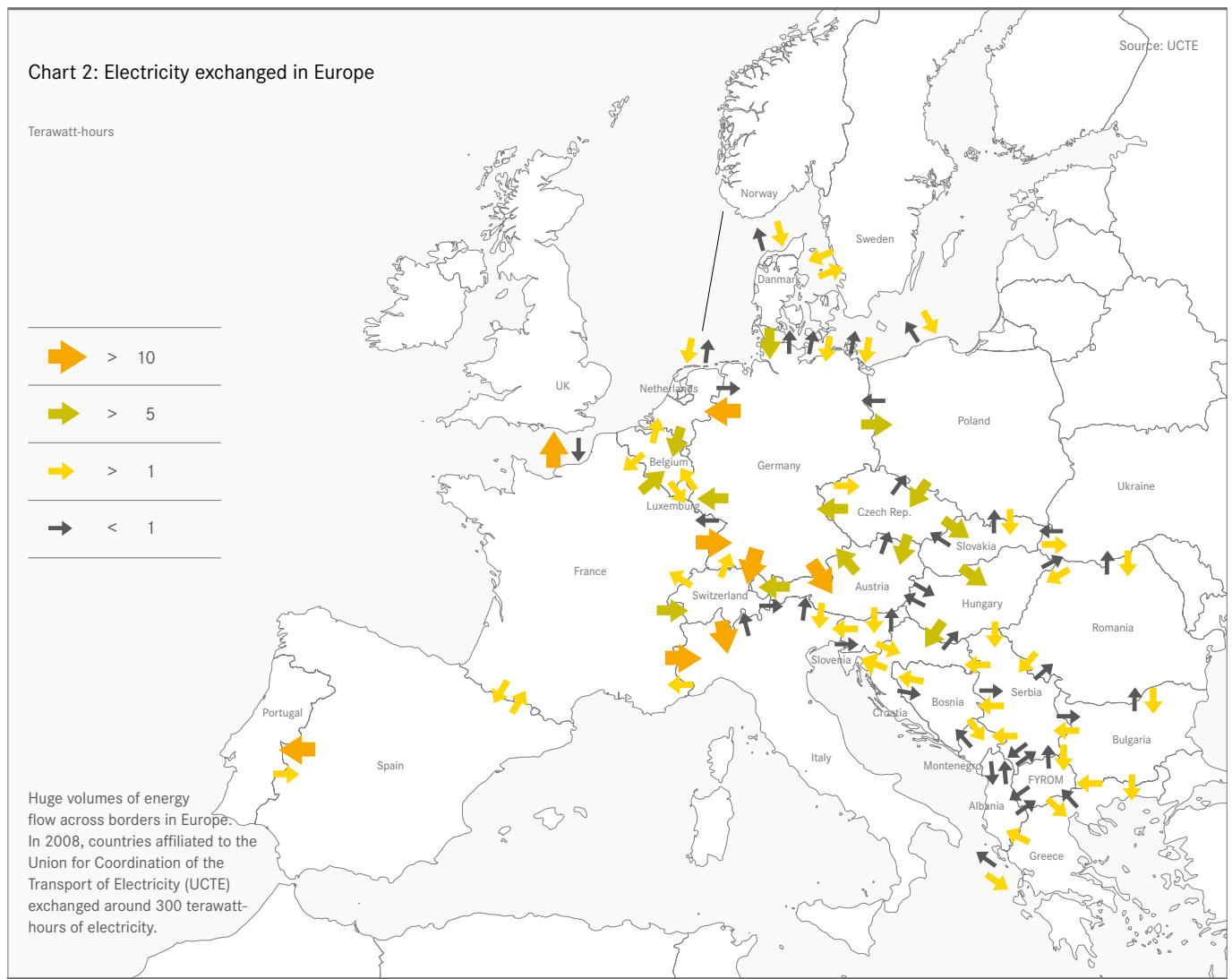
Off-the-shelf or customised

In addition to financial products and classical electricity deliveries, a wide range of other products are offered on international energy markets. These can be standardised and simply structured. For instance, when an energy trader purchases the certificates required by

an industrial company to offset its CO₂ emissions. However, these products can also be highly complex and customised. Energy traders, for example, can take responsibility for marketing the electricity generated by wind farms. On behalf of the plant owner, an experienced trader with a good network of market contacts can sell the electricity at a good profit. This can be generated one day by feeding the electricity into the national grid under the government-subsidised feed-in system and on another day by selling the electricity on the open market via an energy exchange.

Across national borders

In electricity trading, the trading channels are as varied as the products traded. Transporting electricity across national borders is now the rule rather than the exception (see chart 2). Cross-border trading is an interesting business proposition. It systematically exploits the fact that various demand and supply situations result in regionally different price levels. Electricity traders buy electricity in low-price markets and sell it in higher-price markets. The transport capacities required for this purpose at national borders are limited, and in the event of congestion are auctioned off to the highest bidder.



VARIETY OF PLAYERS AND RELATIONSHIPS

VARIETY IS A KEY FEATURE OF INTERNATIONAL ELECTRICITY TRADING – BOTH IN TERMS OF THE PLAYERS INVOLVED AND THE FORMS OF COLLABORATION.

Today, representatives throughout the electricity value chain engage in trading: sellers of fuels such as natural gas or oil, power plant or grid operators, utility companies, bulk consumers, energy traders and even banks.

Exchange or OTC

These partners conduct individual trading transactions almost exclu-

sively over electronic trading platforms – either via one of the 20 or so energy exchanges in Europe or in OTC (over the counter) trading.

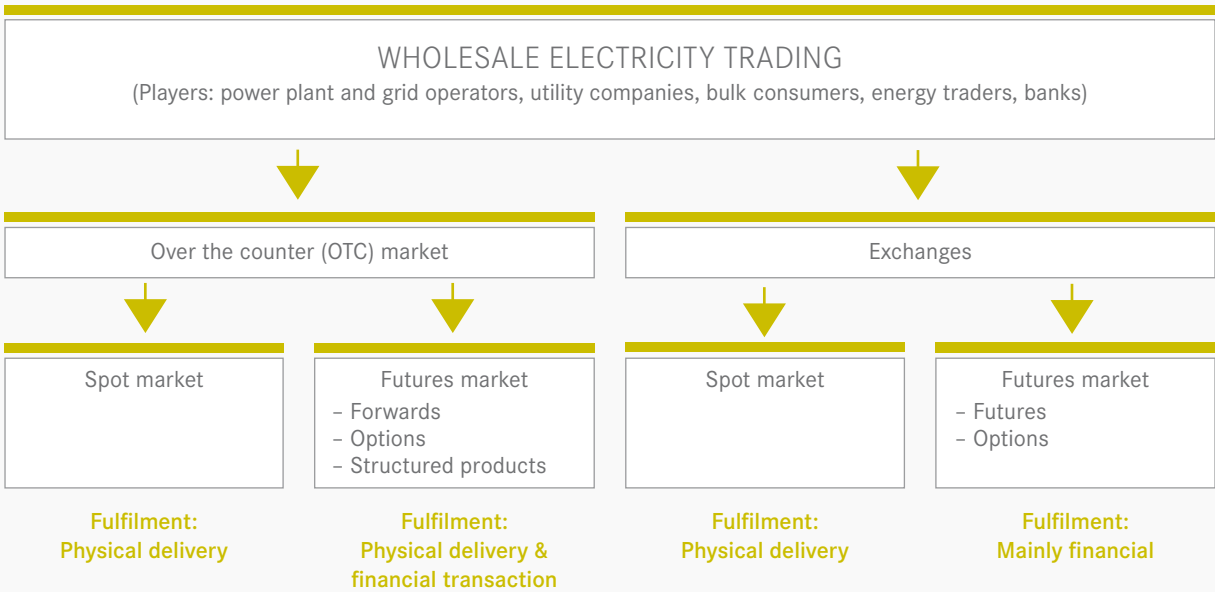
Regional energy exchanges, on which prices are dictated by supply and demand, function in a similar way to securities exchanges. They bundle supply and demand, making it easier for market players to trade and increasing market liquidity – i.e. the number of transactions conducted. Anyone wanting to trade on an energy exchange must apply for a licence, meet certain financial criteria and provide collateral. Only standardised products are traded on energy exchanges. This ensures regulated trading and creates simple instruments of comparison. Electricity trading on exchanges offers additional benefits: it complies with a clear regulatory framework and is supervised, promotes fair, transparent pricing, and keeps handling costs low. The exchange acts as a trading partner, thereby assuming the default risk of a counterparty.

Transactions conducted by market players outside the exchange are referred to as OTC trading, and are generally handled by a broker who receives a fee for his services. OTC traded products are largely heavily standardised but can also be customised. Unlike exchange trading, the risk of default due to delivery or payment difficulties is borne by the trading partners alone.

Time horizon: from very short to very long

The time horizons for both OTC and exchange trading transactions vary widely. On the long-term futures market, electricity is traded for the years ahead. A power plant operator can, for example, sell electricity produced in the future by his plant at a price defined now, so

Chart 3: Structure of the wholesale electricity market



International electricity trading is conducted via energy exchanges or bilaterally (OTC). In both „worlds“, products are traded with short or long-term horizons, either for the physical delivery of electricity or on a purely financial level.

Source: EGL

as to secure future sales for the coming years. Or a manufacturing company can purchase the electricity needed in the future at an early stage and at a defined price.

On the short-term spot market, products are traded for delivery within hours or, at the latest, on the following day. If an energy supplier suffers a power plant outage, the company can use the spot market to purchase the electricity it needs to deliver to its customers in the short-term. Depending on the current price, short-term procurement on the market can be more expensive or cheaper than the electricity produced in the company's own plant or through electricity purchased ahead on the futures market.

Complex technical handling

Trading transactions for the physical delivery of electricity necessitate the organisation of its transport between the parties involved. The technical aspects are handled by the operators of the relevant national transmission systems. The delivery quantity and timing are notified to the grid operator, who has an overview of all relevant schedules. A transport fee is payable for use of the grid infrastructure.

KEEPING A CLOSE EYE ON RISKS

EVERY BUSINESS TRANSACTION ENTAILS OPPORTUNITIES AND RISKS. AND ELECTRICITY TRADING IS NO DIFFERENT. THEREFORE, ENERGY TRADERS HAVE AN EXTENSIVE RISK MANAGEMENT SYSTEM IN PLACE.

Successful trading transactions are dependent on close monitoring of the risks involved. Wherever possible, these risks must be actively managed and mitigated. Risk management is therefore an essential part of the corporate culture of leading energy trading houses.

Wide range of risk factors

International trading in electricity can be used by producers and bulk consumers to hedge against price risks. At the same time, trading operations themselves are exposed to various risk factors. These can be classical trading risks such as market and credit risks – for instance the possibility that electricity prices will fall or the inability of a customer to whom electricity has been delivered to pay his bill. Then there are operational, regulatory and political risks. Regulatory and political conditions vary widely from one region to another, and are continually changing. Detailed knowledge of these factors and the ability to correctly anticipate trends are key criteria for successful electricity trading.

Internal and external control mechanisms

Various instruments are used by electricity traders to optimally gauge the risk landscape and effectively control individual risks. Firstly, trading activities are governed by exchange regulations and monitored by national supervisory authorities. Certain types of transactions are also subject to legal provisions such as the European Union's Markets in Financial Instruments Directive (MiFID).

In addition, electricity traders have extensive internal structures and processes in place for risk management. To hedge against market risks, electricity traders continually analyse the current market situation and anticipate price trends. Thorough credit checks are carried out on trading partners and customers in order to minimise credit risks. And clear limits set for each individual trader, coupled with close monitoring, prevent traders from acting improperly and taking uncontrollable risks.

Opting for a specific trading strategy can also help to minimise trading risks. For example, shifting trading operations to electricity exchanges safeguards against credit risks due to the default of a trading partner. Risks related to individual contracts can also be neutralised by arranging a second transaction – usually a forward contract (hedging).

Large volumes need not entail greater risk

Finally, one interesting but little-known fact: trading in large volumes of energy does not automatically entail greater risk. In the course of a day, an energy trader buys and sells numerous positions of varying value, which can add up to a large trading volume. But the factors that actually determine the market risk are the open positions, i.e. positions which have not been offset by a counterposition. Energy traders usually define clear limits for such open positions.

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