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Eidgenössische Elektrizitätskommission ElCom
Technical Secretariat

Market Transparency 2018

ElCom Report

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Table of contents

Table of figures

Foreword by Matthias Finger

Globalisation and digitalisation are leading to increasingly complex markets, which in turn is making their governance increasingly important and more challenging. In this context the main challenge is to ensure that all market participants are on a level playing field. As the financial crisis has shown, a certain degree of market transparency is indispensable. This applies to all exchanges, all markets and especially to electricity and energy trading.

Sufficient transparency is an integral part of market development. Defining the appropriate scope is the significant challenge.

The main focus is on the transparency of the most important data necessary for traders: what is the “right” average amount of data for a functioning market to be able to develop? On the one hand, too much data and information only benefit large retailers, as they have the necessary tools, resources and capabilities to deal with this flood of data in order to extract the information relevant to their business. On the other hand, excessive regulation can hinder the market. For this reason, ElCom decided to publish certain market-relevant data in a clear and comprehensible form on its website in the form of weekly spot and futures market reports.

These transparency requirements formed the basis for the implementation of the Regulation on Wholesale Energy Market Integrity and Transparency (REMIT) in the EU and Articles 26a ff. of the Electricity Supply Ordinance (StromVV) in Switzerland. The findings of the corresponding transparency developments in the energy market are still at an early stage and time is needed for them to develop their potential. These developments not only benefit the integrity and transparency of wholesale electricity markets; they also contribute to improving the standardisation of market participants' energy data and information management processes, i.e. they pursue long-term objectives.

The market integrity and transparency of the Swiss wholesale electricity market are continuously improved by the implemented surveillance methods on the basis of the experience gained. Surveillance methods must also be continuously adapted to evolving markets and made more efficient. In addition, the question of the technological challenges of market surveillance is raised, with algorithmic and high-frequency trading becoming increasingly important. ElCom faces all of these challenges and attempts to meet them to the best of its knowledge and belief.

Due to the current legal situation, however, ElCom only receives data that Swiss market participants report to foreign authorities. Trade in electricity that takes place exclusively within Switzerland remains closed to us. As a result, ElCom is unable to fully monitor the Swiss wholesale market. There are also no possible sanctions in the event of market abuse or insider trading. In our view, this circumstance entails the danger that Switzerland could become an ethical sink with regard to the wholesale electricity market.

1 The history of the origins of wholesale electricity market surveillance

As a result of the financial and economic crisis, it was agreed at the G20 summit in Pittsburgh, Pennsylvania (PA) in September 2009 to make the financial markets more efficient, more resilient and, above all, more transparent. These decisions resulted in recommendations from the *Financial Stability Board* (FSB), of which Switzerland is a member. These recommendations included the prevention of speculation in computer-controlled high-frequency trading and trading in raw materials. Electricity and gas trading were therefore also affected by these developments. A sector-specific regulation has been developed to ensure that companies in the energy industry are not fully subject to this financial market regulation. In December 2011, the European Union (EU) published Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency (REMIT).

REMIT obliges market participants to transmit information on wholesale energy products to EU authorities or to those of the member states among other things. The aim is to ensure the integrity and transparency of wholesale energy markets in the interests of a functioning market and to prevent misconduct such as market manipulation or insider trading.

According to REMIT, Swiss market participants are also obliged to report information regarding their transactions in the EU to the authorities of the EU and its member states and to publish insider information. There was no analogous obligation towards the Swiss authorities. For this reason, the Electricity Supply Ordinance of 14 March 2008 (StromVV; SR 734.71) was expanded to include Section 4*a Informationen zum Elektrizitätsgrosshandelsmarkt* (Information on the wholesale electricity market).

The new section comprises Articles 26a-26c StromVV, which essentially relate to the obligation to supply information on the wholesale electricity market and insider information to ElCom, as well as ElCom's powers to evaluate this information. In accordance with these requirements, Swiss market participants domiciled or resident in Switzerland must provide ElCom with the same information as they provide the authorities of the EU and its member states at the same time and in the same form. The market participants concerned must also provide ElCom with insider information, such as planned power plant outages. This regulation entered into force on 1 July 2013.

Based on this newly assigned task, ElCom decided to establish its own Market Surveillance Section as of 1 June 2014 and to commission it with the implementation of Articles 26a ff. of the Electricity Supply Ordinance. In a short time, a secure IT system was set up, which made it possible to register market participants subject to reporting requirements and to start receiving data reports almost simultaneously with the EU.

To ensure that the wholesale transaction data and fundamental data as well as the reports on insider information can be delivered to ElCom, the data suppliers commissioned by the market participants (*registered reporting mechanisms* [RRM]), the *European Network of Transmission System Operators for Electricity* (ENTSO-E) and the European Energy Exchange Transparency Platform (EEX TP) have been connected to ElCom's IT infrastructure. After an appropriate quality check, this information is made available for data analysis and enables ElCom to monitor the Swiss wholesale electricity market.

2 Market surveillance in Switzerland: Facts and figures

2.1 Registered market participants

The registration of market participants in Switzerland is carried out via the registration tool. It was successfully introduced and activated at ElCom at the beginning of May 2015, five months before the effective entry into force of the obligation to report. The registration of Swiss market participants was thus launched early and before the specified date for the first data reports on 7 October 2015.

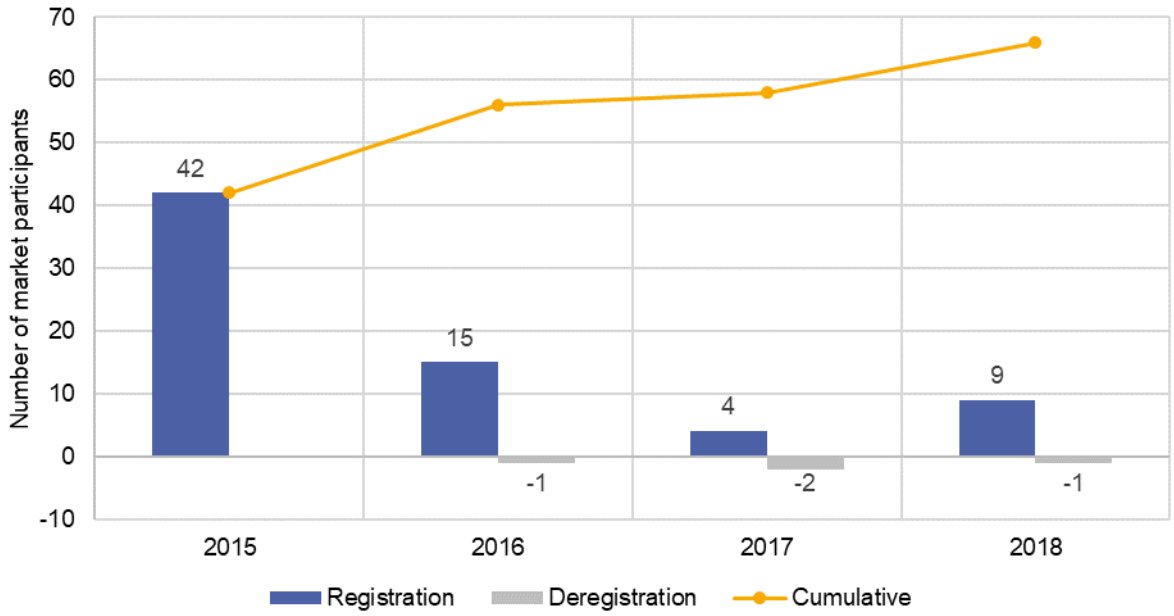

Figure 1: Number of registered Swiss market participants

Since Articles 26a ff. of the Electricity Supply Ordinance entered into force and the IT system was put into operation, a total of 70 Swiss electricity trading companies have registered with ElCom. Four of them ceased trading activities subject to reporting requirements under REMIT and therefore de-registered themselves. As a result, there were 66 Swiss market participants registered with ElCom at the end of 2018.

The largest number of registrations by market participants took place in 2015 (see Figure 1). Further rounds of information by e-mail and as part of the annual market surveillance workshop, as well as continuous, proactive contact with Swiss electricity trading companies, had the result that all companies based in Switzerland that report data to the European authorities in accordance with REMIT are now also registered with ElCom.

Registration with ElCom requires an existing entry in the *Centralised European Register of Energy Market Participants* (CEREMP) of the *Agency for the Cooperation of Energy Regulators* (ACER) and the possession of an ACER code. For this purpose, market participants based in Switzerland must register with one of the *national regulatory agencies* (NRAs) of the individual EU member states. The choice of regulator is left to the market participants. The majority of Swiss companies have decided to register with the German regulator, the *Bundesnetzagentur* (BNetzA), followed by the Italian regulator, the *Autorità di Regolazione per Energia Reti e Ambiente* (ARERA) and the British regulator, the Office of Gas and Electricity Markets (Ofgem). Five Swiss companies have registered with the French regulator, the *Commission de régulation de l'énergie* (CRE). Three market participants each chose the Austrian regulator, *Energie-Control GmbH* (E-Control) and the Dutch regulator, the *Autoriteit Consument & Markt* (ACM). One market participant each opted for the Irish regulator, the Commission for Regulation of

Utilities (CRU), the Polish regulator, the *Urząd Regulacji Energetyki* (URE) and the Spanish regulator, the *Comisión Nacional de Energía* (CNE). In addition, there is one market participant who only trades within Switzerland and has voluntarily registered with ElCom. An overview of the breakdown of Swiss market participants by country of registration can be found in Figure 2.

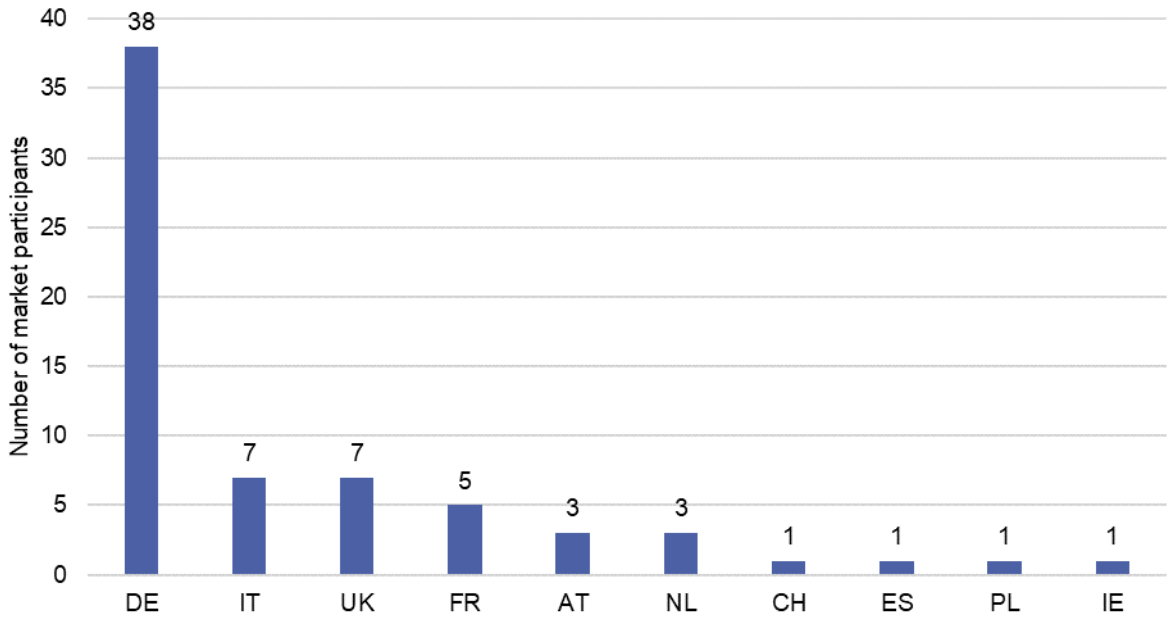

Figure 2: Distribution of Swiss market participants by country of registration

A list of market participants currently registered with ElCom is published on ElCom's website under the heading “Market Surveillance”. The list is updated twice a year.

2.2 Reported data

According to REMIT, the reporting obligations for standard contracts traded on *organised marketplaces* (OMPs) such as exchanges, brokers or via a PPAT (*person professionally arranging transactions*) started in the EU on 7 October 2015. The reporting obligations were extended to include the provision of information on non-standardised contracts with effect from 7 April 2016. These include *over-the-counter* (OTC) transactions and transport contracts. In 2017, information that qualifies as insider information was also included in the reporting.

Swiss market participants that are obliged to report information on their trading activities to ACER in accordance with REMIT and to ElCom in accordance with Articles 26a ff. of the Electricity Supply Ordinance usually do so via a data supplier (RRM). The current list of RRMs linked to ElCom is shown in the table below and can also be found on ElCom’s website under the heading “Market Surveillance”. It is constantly updated.

	Name	ACER Code
1	EEX	B0000104M.DE
2	EPEX SPOT	B0000258F.FR
3	Equias	B00001014.NL
4	Trayport	B00001100.UK
5	Webware Internet Solutions GmbH	B0001064H.DE
6	JAO	B0005876N.LU

Table: List of RRMs connected to ElCom

The fundamental data is transmitted to ElCom via an interface to ENTSO-E. Fundamental data is publicly available data and includes, for example, electricity demand, the production of the various types of power plants, cross-border capacities and reports on planned and unplanned power plant outages. ElCom obtains this data both for Switzerland and for all neighbouring countries.

Since the majority of Swiss market participants (around 90%) publish their reports on insider information on EEX TP, an RSS feed was set up between EEX TP and ElCom for the purpose of transmitting this data to ElCom. Due to the small number of market participants who publish their reports via the *Gestore dei mercati energetici* (GME), ElCom decided not to connect the IT infrastructure directly to that of the GME for the time being. The market participants concerned were requested by ElCom to inform ElCom simultaneously by email of every publication via the GME. The same applies to those market participants that have decided to publish insider information on their own website instead of via a transparency platform.

In addition to the reported data, further information necessary for the analysis of market participant behaviour, such as settlement prices (reference prices for important trading products), is also obtained via the link to the EEX. ElCom also obtains reference data such as coal, gas and CO_2 prices from various other sources. Weather data and additional data on reservoir levels, import and export capacities at the borders and planned and unplanned power plant outages are also included in ElCom's analyses.

2.3 Statistics

By the end of 2016 - the first full year after the obligation to report entered into force - ElCom had received 19,670,365 data reports via RRM alone. This corresponds to a total data volume of approx. 70 gigabytes. A large part of these data reports (17,424,692) consisted of the trading activities of Swiss market participants in the form of standard contracts. Approximately 30 percent of these contracts were trades and 70 percent were the corresponding orders; 87.6 percent of the contracts were short-term trades and 12.4 percent were futures trades with electricity as the underlying asset. As can be seen in Figure 3 there were over 1,000,000 additional fundamental data reports following the establishment of the ENTSO-E channel in the second quarter of 2016 alone. Reporting on non-standardised contracts also began in the same quarter.

The number of standard contracts supplied increased significantly in 2017. Over 18 million transactions (orders and trades) were registered for standard contracts. This corresponds to 30 percent more energy trading transactions than in 2016. The ratio of orders to trades from the previous year (around 2:1) was confirmed again in 2017. The ratio of spot transactions to futures transactions remained similar. More than 90 percent of the transactions were processed on the spot market. Futures and forwards therefore accounted for less than 10 percent of the total number. Compared with standard contracts, the number of reported non-standardised contracts was very low: only 3,500 were reported in 2017. ENTSO-E reported more than 2.3 million fundamental data reports in 2017, which was double the volume of data reported the previous year.

The trend of an increase in data reported to ElCom was pronounced in 2018, as with previous years. The balance sheet at the end of 2018 indicates that more than 60 million transactions were reported to ElCom as standard contracts since the start of reporting. The breakdown of trading transactions was similar to that of previous years. 85 percent of the reported data fell into the standard contracts category. Over 23 million transactions (orders and trades) were registered. These represent 30 percent more transactions than in 2017. The ratio of orders to trades (around 2.5:1) revealed only minor deviations compared to the previous year. The proportion of transactions on the spot market was also similar to that in 2017, at over 90 percent. Futures and forwards therefore continue to account for less than 10 percent of the total number. As in previous years, the number of non-standardised contracts registered remained low: only 3,200 were registered in 2018. A total of more than 4.2 million fundamental data reports were received in 2018, almost twice as many as in 2017. This year also saw the start of insider information reporting. Since then, ElCom has received 15,785 automated reports of insider information from EEX TP. By contrast, no reports of insider information had been received by ElCom via email by the end of 2018.

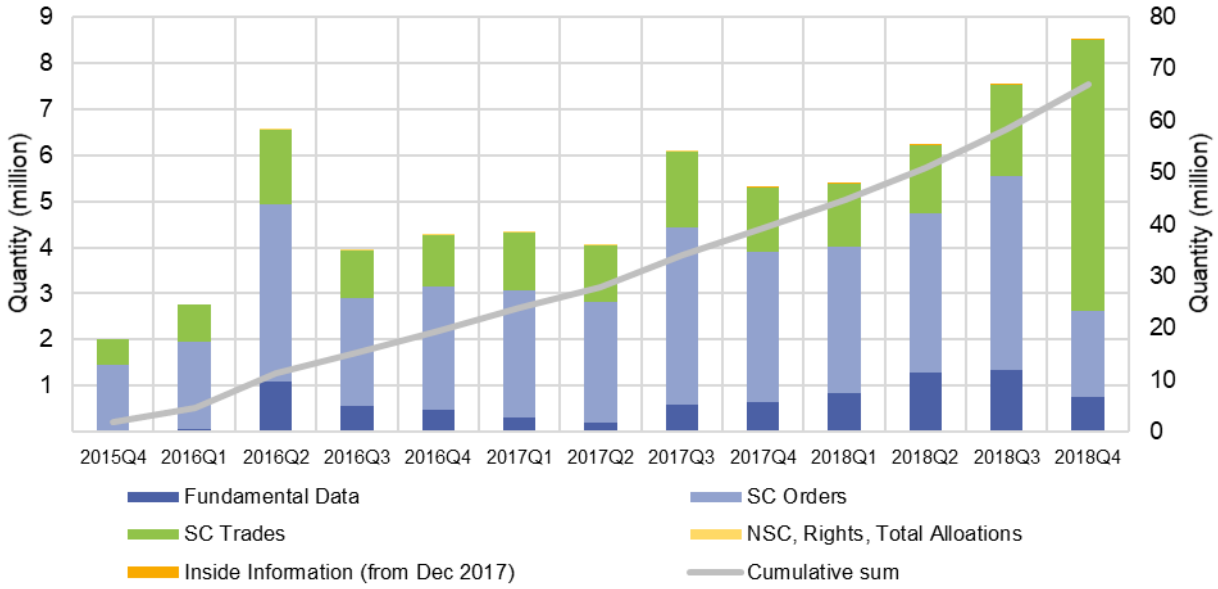

Figure 3: Number of data reports

The distinction between futures and short-term trading as well as between orders and trades for standard contracts at the end of 2018 is shown in Figure 4. The pie chart shows the relationship between day-ahead and intraday transactions in short-term trading, which accounts for the majority of trading transactions.

In short-term trading, the products have shorter maturities and more transactions are reported for the same delivery period. A futures contract, on the other hand, is only covered by a single transaction. Therefore, it should not be concluded from Figure 4 that futures trading is relatively less important than short-term trading.

The continuously increasing trend in data reporting and the growing number of reported transactions indicate that Swiss market participants are very active in the neighbouring wholesale electricity markets. The largest group is clearly based on standard contracts.

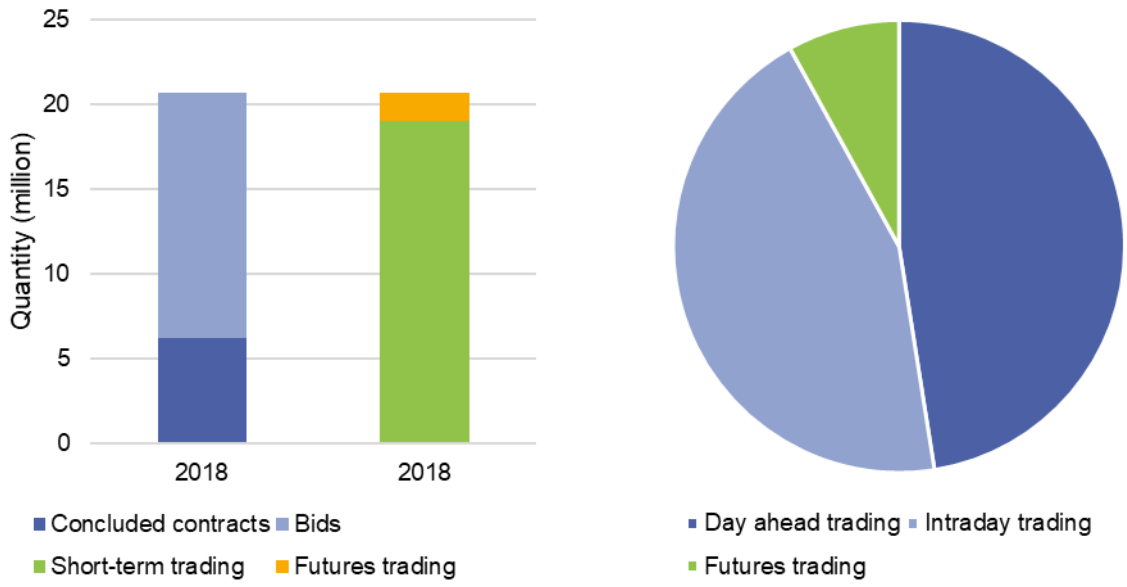

Figure 4: Number and type of trading transactions 2018

The breakdown of the trading activities of Swiss electricity wholesalers by place of supply can be seen in Figure 5. It is clear that Italy and Germany are the largest target markets. This is where more than 85 percent of the business transactions of Swiss market participants take place. Due to the structure of the Italian market (several bidding zones and several daily auctions) the number of transactions in the Italian market area is generally higher.

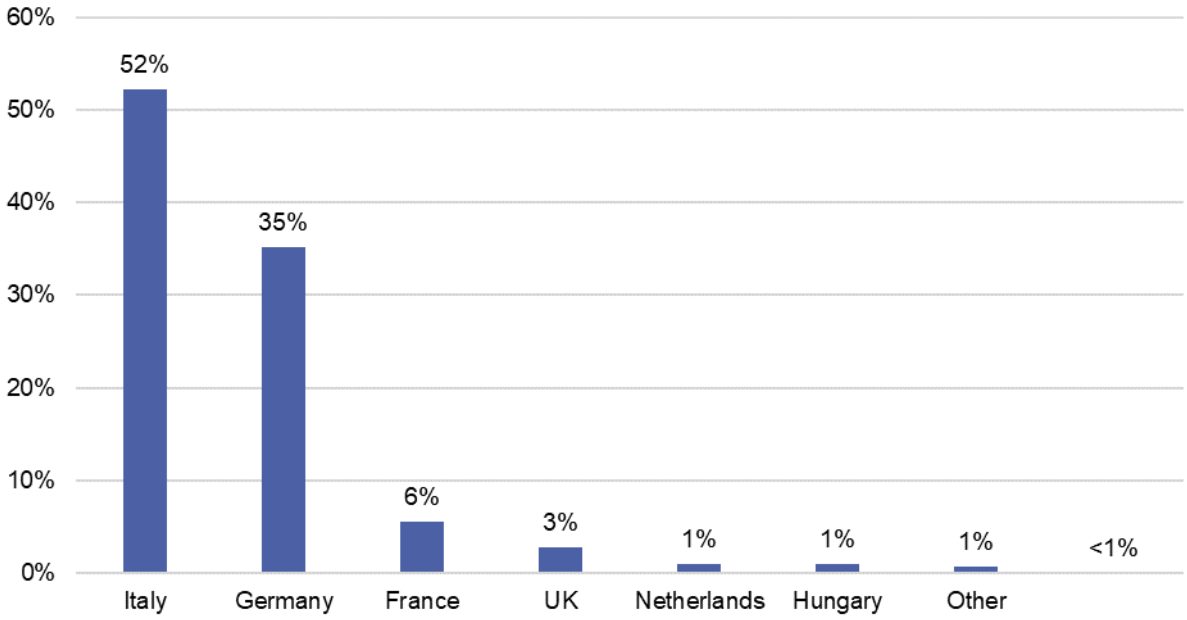

Figure 5: Distribution of trading transactions for standard contracts by place of supply

Swiss market participants trade on 45 organised marketplaces. The breakdown by marketplace type is depicted in Figure 6. The transactions concluded on the exchanges only slightly exceed those concluded via a broker. Only two percent of the trades are made via an *organised trading facility* (OTF).

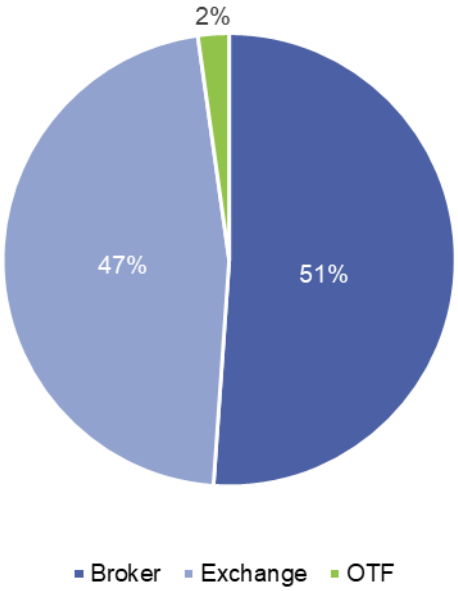

Figure 6: Distribution of organised marketplaces by type

The territorial distribution of the organised marketplaces on which the Swiss market participants operate can be seen in Figure 7. In addition to trading on the national exchanges of EU countries, Swiss market participants often choose broker platforms for concluding their transactions. Most of these platforms are based in the UK, followed by Germany and France.

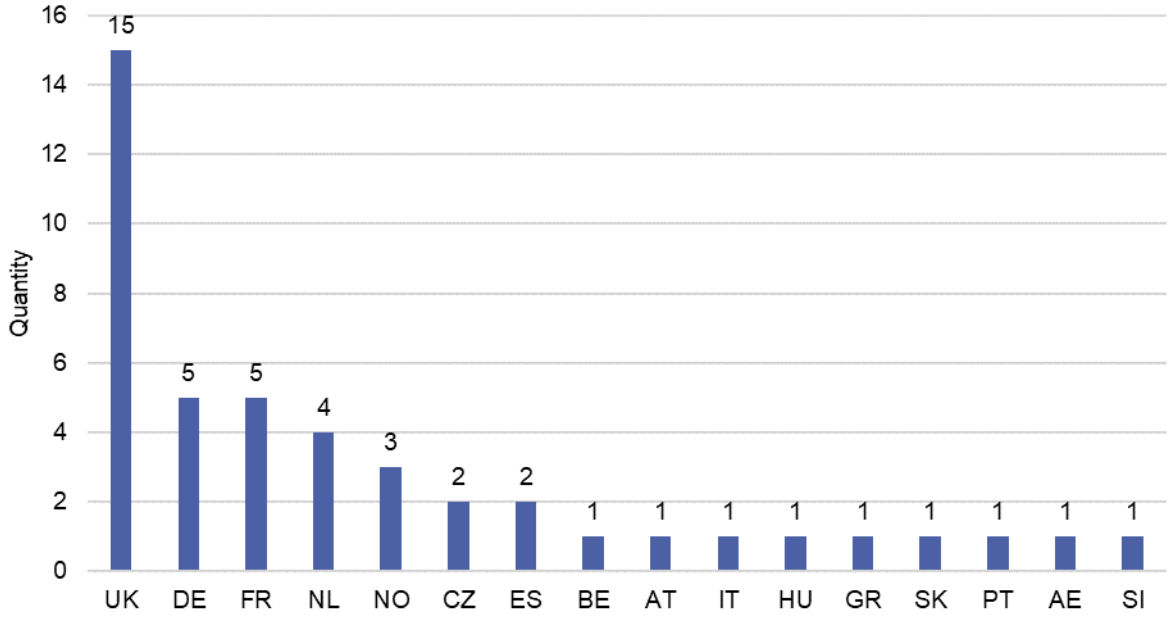

Figure 7: Number of OMPs used by Swiss market participants by country

3 Key market surveillance activities of ElCom

3.1 Monitoring data quality and completeness

In order to ensure efficient monitoring of the wholesale electricity market, complete, good-quality data is essential. An initial assessment at the beginning of 2016 showed that the pre-defined requirements had not been sufficiently fulfilled and that it was therefore not possible to adequately conduct a well-founded, informative analysis in the service of market surveillance. This finding was repeated in the subsequent analysis of the fundamental data and in the evaluation of the reports on non-standardised and transport contracts. The most common issues are conspicuous features such as double reporting, incorrect mapping of life cycle events, or inaccuracies in information such as OMP identification codes, incorrect delivery locations, imprecise time stamps, mismatched contract designations, errors in price, profile, or volume information, etc. Cases of late reporting[1] and cases of completely missing reports were identified and largely corrected. Loopholes and deficiencies in data quality were also identified in the publications on insider information.

Through the constant exchange between ElCom and the parties concerned, it has already been possible to make a significant contribution to improving the quality of the reported data over recent years. In this context, ElCom welcomes constructive cooperation with Swiss market participants. It was possible to clarify and resolve most cases of incorrect reporting in direct dialogue with the market participants.

Even though the guidelines originate from ACER - more than 600 pages of interpretations and instructions regarding implementation of REMIT were made available by ACER to the market participants concerned - ElCom is committed to facilitating compliance with Articles 26a ff. of the Electricity Supply Ordinance for the market participants as far as possible through simplified and user-friendly processes. The development of well-structured reporting processes monitored by market participants and the data providers they commission is intended to achieve greater compliance with the requirements for completeness, accuracy and punctuality of reports. Market participants are expected to take all necessary steps to achieve the necessary compliance and to transmit to ElCom data of a quality that enables comprehensive, informative market surveillance.

3.2 Monitoring the wholesale electricity market

3.2.1 Market manipulation and insider trading

The purpose of market surveillance is to detect dysfunctions of the wholesale electricity market. The main focus of the analyses ElCom conducts, based on the data supplied to it in accordance with Articles 26a ff. of the Electricity Supply Ordinance, is insider trading and market manipulation. Due to the volume of data concerned, ElCom uses a *market monitoring system* (MMS), which can detect anomalies automatically. In this way it has already been possible to identify several anomalies with regard to the behaviour of Swiss market participants.

[1] For standard contracts, the reporting deadline is set to T+1. For non-standardised contracts, it is T+30.

Information on potential cases of misuse also reaches ElCom from external sources. These are mainly reported by OMPs such as exchanges or brokers via *suspicious transaction order reports* (STORs). A total of six STORs was transmitted to ElCom by the end of 2018. These include cases of potential market manipulation such as *layering*, *wash trades* and *cross-market manipulation*.[2] ElCom has not yet received any notification from a PPAT.

In all the incidents investigated by ElCom in which market manipulation was suspected, dialogue with the market participants concerned was sought in order first to understand the background to this behaviour and then, if necessary, to discuss measures to prevent market manipulation in the future.

ElCom also conducts ad-hoc analyses based on topical circumstances and developments. In 2018, these included the extremely cold days in February and the exceptionally warm days in August. In this context, ElCom analysed the behaviour of market participants in particular with regard to *capacity withholding*. Additionally the launch of the *Cross-Border Intraday* (XBID) market project, from which Switzerland is excluded, and the associated reintroduction of explicit auctions on Switzerland's borders was analysed.

By advancing the market analyses with the aid of the market surveillance system, ElCom was able to build up expertise regarding market behaviour, market processes and price developments. This expertise is used by ElCom in decisions regarding future developments in the Swiss marketplace.

3.2.2 Capacity withholding

Day-ahead auctions are important in electricity trading. Auctions are held the day before for electricity supply on the following day. Market participants must submit their orders for the purchase and sale of electricity by a fixed time. Orders may be submitted for supply or acquisition for any hour of the next day. After the auction closes, the auction platform calculates the supply and demand curve and the resulting market clearing price per hour that each market participant pays or receives. Withholding a significant amount of electricity production in the auction can artificially increase the market clearing price, especially if the system is already strained (e.g. during a cold spell or heat wave).

In this context, ElCom analysed the behaviour of Swiss market participants in the periods February/March 2018 and July/August 2018. February 2018 saw unusually low temperatures. Temperatures in the summer of 2018 exceeded 35 degrees at times. The purpose of the analysis was to clarify whether there had been any production capacity withholding in these periods which would influence market prices for electricity.

[2] Layering is a market manipulation strategy in which a trader places many orders in the market and later deletes them. When placing orders, the trader does not intend to effectively execute these orders on the market, but instead seeks to influence the trade price in a desired direction.

A wash trade is a self-trade. This is the case if someone concludes a legal transaction either with himself as the representative of a third party (self-contracting) or as the representative of two or more parties (double or multiple representation). Wash trades fall under the category of market manipulation because they can send the market false or misleading signals with regard to liquidity, price (especially at the daily closing price) or volatility or are entered into with the aim of price positioning.

In some cases of cross-market manipulation there are overlaps between the intraday and the balancing energy market. Arbitrage opportunities between the two markets are exploited. This is an aspect of market design that has attracted particular attention in France.

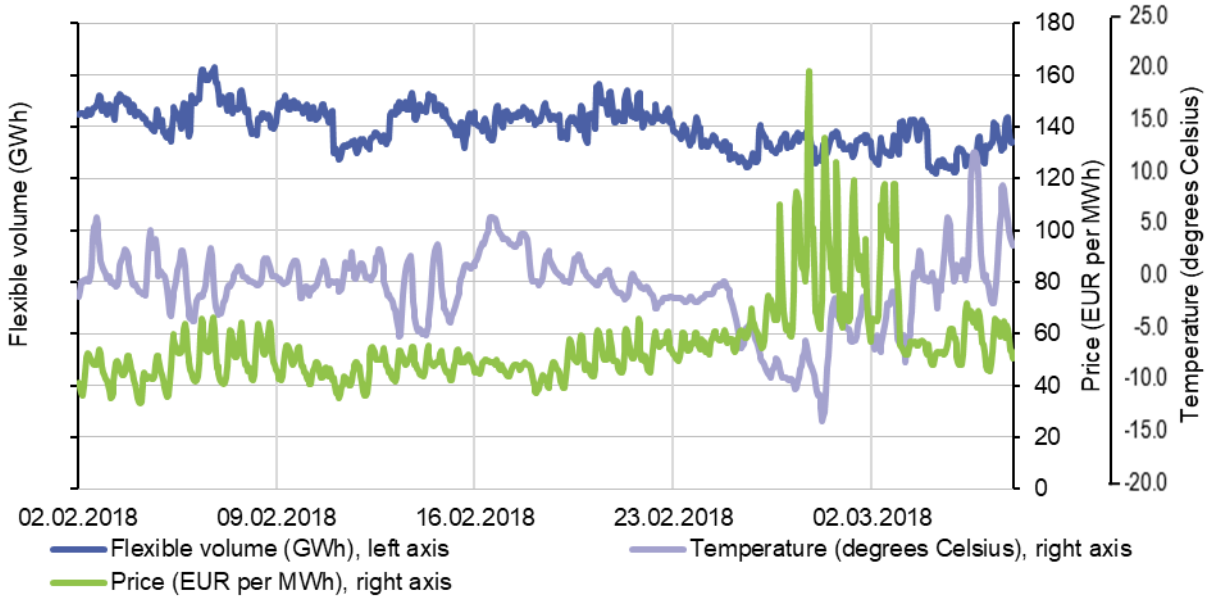

Figure 8: Total flexible volume in the Swiss day-ahead auction, February/March 2018

In order to determine the flexible volume, it was necessary to reconstruct the daily day-ahead exchange matrix for each market participant in the Swiss day-ahead auction on the basis of the orders received. In February/March 2018 alone, this corresponded to an analysis period of 34 trading days and an evaluation of over 1.5 million orders from 62 market participants.

Total flexibility is measured by the absolute difference between the volumes demanded or offered at -500 EUR/MWh and 3,000 EUR/MWh. This corresponds to the price range prescribed by EPEX within which market participants can submit their orders.

The results of the analysis show that in the coldest phase of 2018, despite very high prices, there was a slight decline in the flexible volume offered (see the dark blue line in Figure 8). At ElCom's request, the market participants concerned plausibly explained that the production capacities offered in the day-ahead market would be lower if they were increasingly used in the reserve energy market instead, because more attractive conditions might prevail there. The appetite to take risks in day-ahead trading also decreases in very cold temperatures. Illiquidity in the intraday market, price peaks due to high demand, or possible power plant outages can further exacerbate the tense market situation.

Analysis of the heat wave in the summer of 2018 has shown that there is no tendency to withhold production capacity even in the case of very high temperatures (see Figure 9).

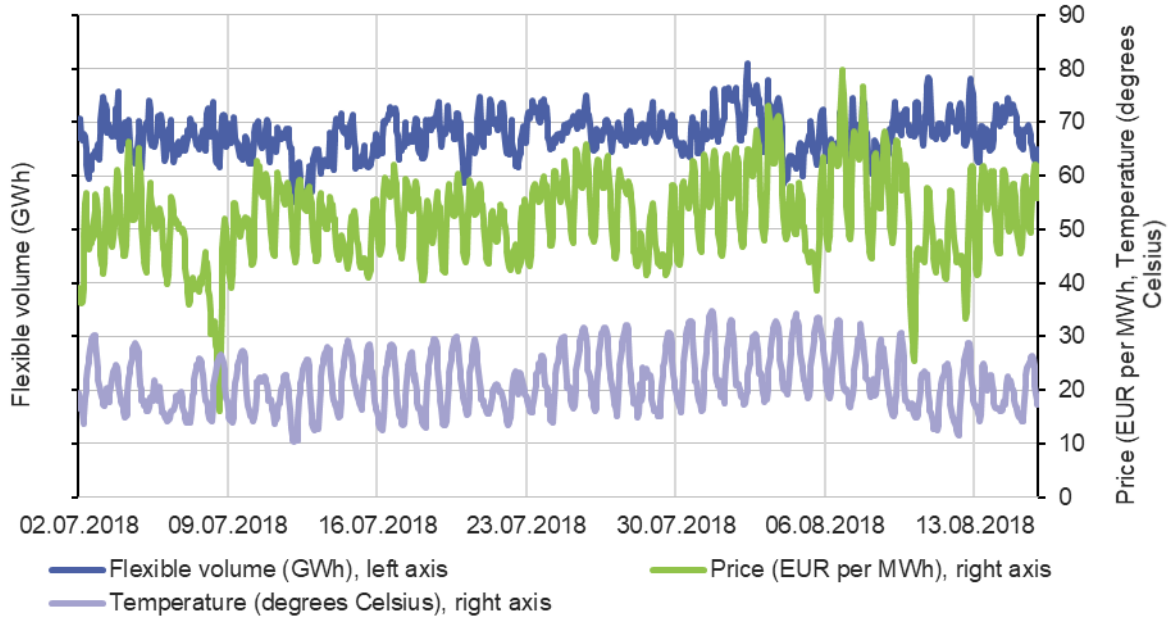

Figure 9: Total flexible volume in the Swiss day-ahead auction, July/August 2018

In summary, it can be concluded that the day-ahead market in Switzerland is generally not subject to price manipulation due to production capacity withholding. The day-ahead market will continue to be monitored for this purpose.

3.2.3 Impact of XBID on the intraday market in Switzerland

The Cross-Border Intraday (XBID) market project was launched in the EU on 13 June 2018. XBID is a target model developed by the European Commission which creates the basis for continuous cross-border intraday electricity trading based on the continuous allocation of cross-border capacities. It therefore allows what is known as implicit trading. Traders can buy or sell electricity with the corresponding network capacity across borders in a single step.

With the introduction of XBID, the previous system, the *Flexible Intraday Trading Scheme* (FITS), which enabled implicit intraday trading at the borders between Switzerland and Germany and between Switzerland and France, was withdrawn.

Switzerland is excluded from participation in XBID. It has therefore been necessary to take two steps in cross-border energy transactions at the borders between Switzerland and Germany and between Switzerland and France since the introduction of XBID: In addition to actual energy trading, it is necessary to reserve the required cross-border capacity separately. The intention of the legislation according to Article 17 paragraph 1 of the Electricity Supply Act is the efficient use of cross-border capacity according to a market-based procedure. Since the incentive for conservative reservation is not sufficiently great and the costs for intraday trade are also increased, the risk of capacity hoarding also increases. In *capacity hoarding*, a significant amount of capacity is purchased and later returned, without using or ever wanting to use the capacity for transporting electricity. This prevents equal opportunities existing for all market participants with regard to cross-border energy transactions.

ElCom considers the hoarding of significant quantities of capacity as problematic from the point of view of electricity supply law and as a case of potential market manipulation. For this reason, ElCom monitors the conduct of market participants on the borders.

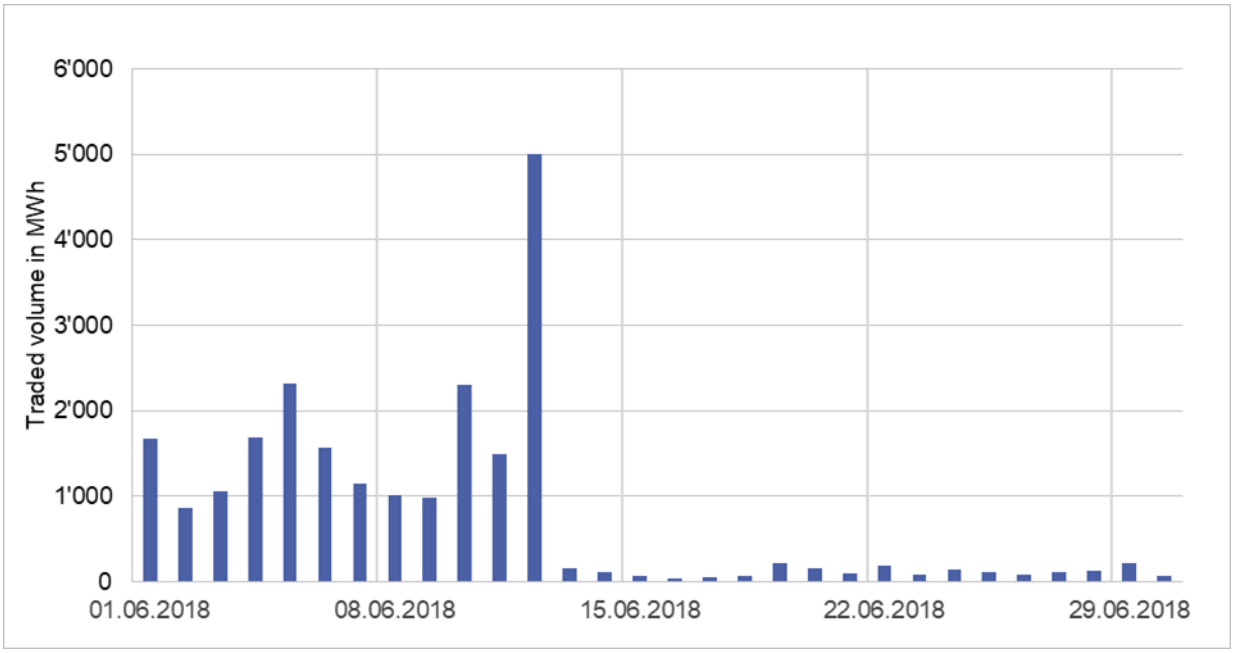

Figure 10: Volume traded in the Swiss intraday market before and after the introduction of XBID

As Figure 10 illustrates, the introduction of XBID led to a significant fall in liquidity in Swiss intraday trading. Figure 11 clearly illustrates that the trading activities of Swiss market participants in intraday trading in Germany simultaneously increased. The same applies to intraday trading in France.

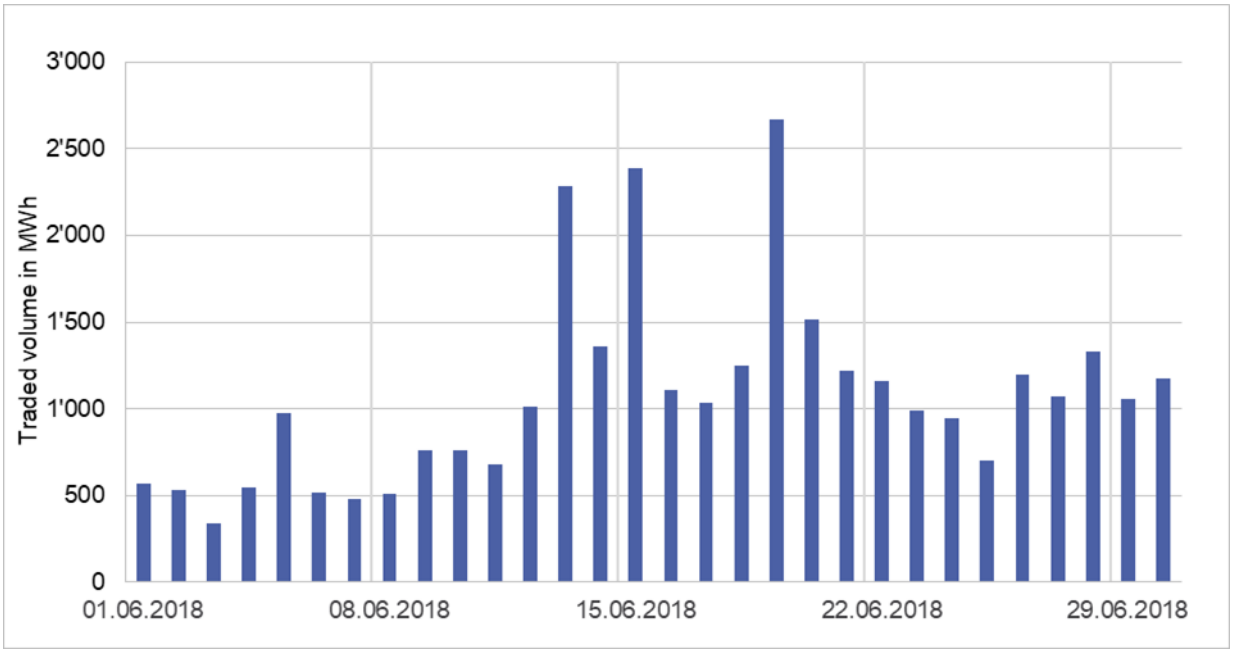

Figure 11: Volume traded in the German intraday market before and after the introduction of XBID

3.2.4 Effects of the separation of the bidding zones of Germany and Austria

Until the end of September 2018, Austria was in the same price zone as Germany. On 1 October 2018, a separate bidding zone was introduced for Austria. This eliminated the possibility of unrestricted electricity trading between Austria and Germany. Austria is now a relevant market in its own right and available grid capacity must be taken into account for this market in cross-border electricity trading. The maximum available network capacity was set at 4.9 GW.

The following factors led to price differences between Austria and Germany:

- Demand and production differences between Austria and Germany
- Price-determining generation technology (run-of-river power, pumped storage, gas-fired power plants, etc.)
- Market coupling processes (day-ahead flow-based market coupling in the CWE region [northwest Europe], XBID)
- Loss of liquidity in Austria, changes in procurement and hedging strategies, and restricted competition

In order to hedge price differences between Austria and Germany, *financial transmission rights* (FTRs) are used. These are auctioned monthly at the *Joint Allocation Office* (JAO). An FTR is used to hedge the price difference between two price zones. For this purpose, the difference in the respective clearing price between two market areas is used and multiplied by the acquired capacity in MW. This amount is refunded to the holder of the FTR. It is not possible to nominate or reserve FTRs.

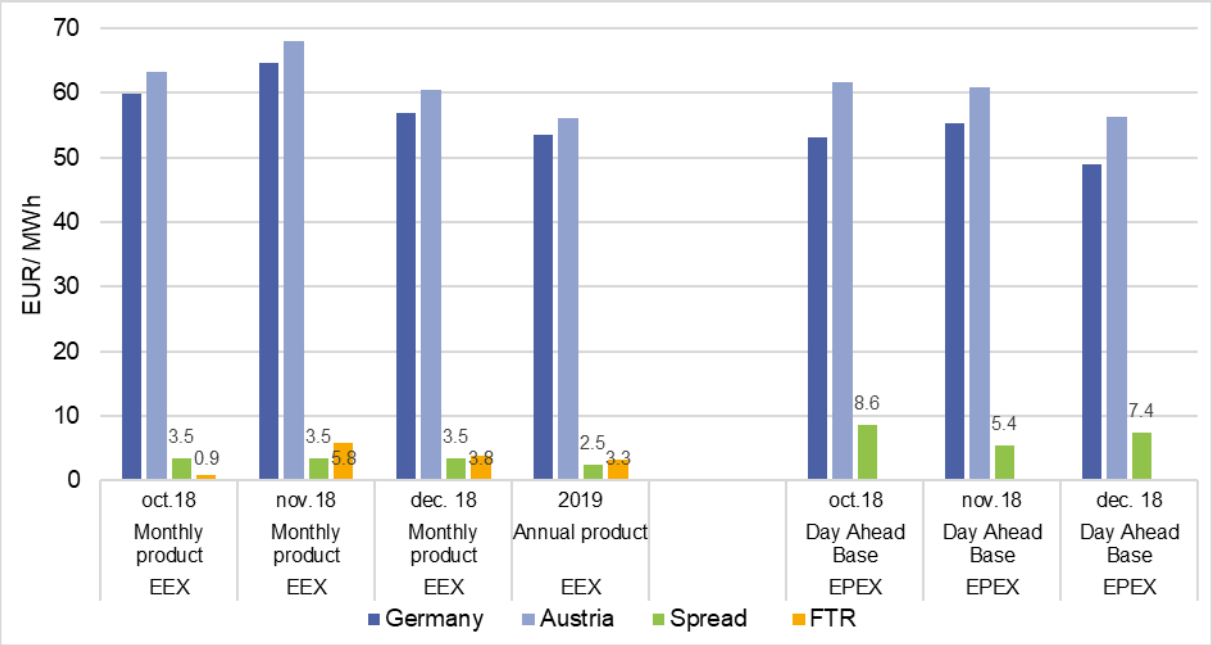

Figure 12: Expectations of bid zone separation vs. actual prices

Figure 12 clearly illustrates that the FTRs auctioned at the JAO settled on the spread traded on the EEX after two months. However, they were well below the daily base spreads observed in the spot market on EPEX Spot. It should be noted that the EEX data on the graph represents the average settlement prices in September 2018 for the monthly products for October, November and December 2018 and for the annual product 2019. The data from EPEX Spot represent the average of the daily base for the respective month.

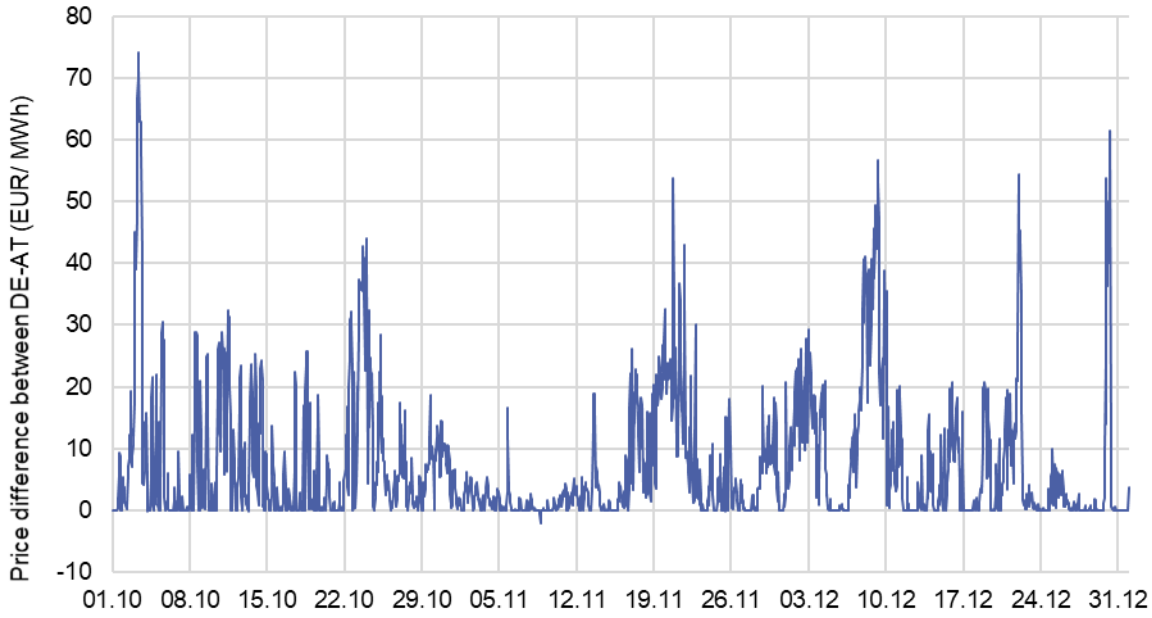

Figure 13: Price differences between Germany and Austria for the day-ahead hourly auction

Figure 13 illustrates the fluctuating differences between German and Austrian day-ahead hourly prices on EPEX Spot SE. For example, 3 October 2018 was a national holiday in Germany (Day of German Unity). Demand was correspondingly lower than on a normal working day. In addition, generation from wind power in Germany was high and well above normal levels. As a result, prices in Germany fell to almost zero. The limited border capacity with Austria prevented prices equalising between the two countries.

3.3 Market surveillance workshop

ElCom holds annual workshops on topics relating to the duty to provide information in accordance with Articles 26a ff. of the Electricity Supply Ordinance. Reports on the status of market surveillance in relation to wholesale electricity in Switzerland are presented at these events. Other occurrences in the electricity sector in Switzerland and Europe are also discussed.

The focus of the first workshop was the obligation to register and report in accordance with Article 26a ff. of the Electricity Supply Ordinance. The focus of the second workshop was the experience of the first reporting phase for standard contracts, which began on 7 October 2015. Information was also provided on the then upcoming second phase of reporting of non-standardised transactions from 7 April 2016.

The focus of the third workshop was the quality of the reported data. Together with the stakeholders present, including RRMs, OMPs, NRAs and market participants, measures to improve the quality of data reporting were discussed and practical proposals developed, particularly with a view to avoiding the recurrent duplication of data provision.

Due to the central importance of data quality for sound, informative market surveillance, discussions regarding data quality continued in the following year. The main focus was on the role of RRMs and NRAs in the process of improving completeness, accuracy and timely provision of data.

The focus of the 2018 workshop was blockchain, which is a hotly discussed topic at the moment. Various aspects of the use of blockchain in the energy industry were highlighted. There were lively discussions on the question of whether blockchain technology has the potential to make processes in the energy industry more efficient.

4 Spot market and futures market reports

Since February 2018, ElCom has published a weekly futures market report on current price developments in the Swiss market and neighbouring markets, as well as a weekly spot market report since October 2018. Greater transparency in wholesale electricity markets reduces the risk of market distortion and price signal distortion, and ensures that end consumers pay a fair price for electricity. Wholesale markets generate important price signals, which influence not only the choice of suppliers and consumers, but also investment decisions in production plants and the transmission network infrastructure. It is therefore crucial that these signals are generated by functioning market forces.

The aim of these market reports is to show the current status of electricity prices and their development in Switzerland and neighbouring countries over the previous week, as well as the price development based on the development of electricity price drivers such as CO_2, coal and gas prices, production data, temperatures and other fundamental data. Whereas the futures market report focuses on longer-term products such as annual, quarterly and monthly contracts in Switzerland, Germany, France and Italy, the spot market report shows hourly and weekly contracts and the most important fundamental data for understanding price movements (electricity production per technology, demand, temperatures, commercial border flows between Switzerland and the neighbouring countries of Germany, France and Italy, as well as generation forecasts for wind and solar power production in Germany).

4.1 Spot market 2018

The base and peak prices for the day-ahead auction on the EPEX Spot market exhibited an increasing trend during the course of 2018 (see Figure 14). Whereas in January 2018 the base price in Switzerland was around 50 EUR/MWh, the price in October was between 60 and 80 EUR/MWh. The price increases for the commodities coal and gas, which are important for the electricity price, as well as for CO_2 certificates resulted in power price increases (see also Section 4.2). In autumn 2018, the limited availability of French nuclear power plants also drove up prices. High wind power feed-in in Germany also had the effect of reducing Swiss electricity prices in some cases.

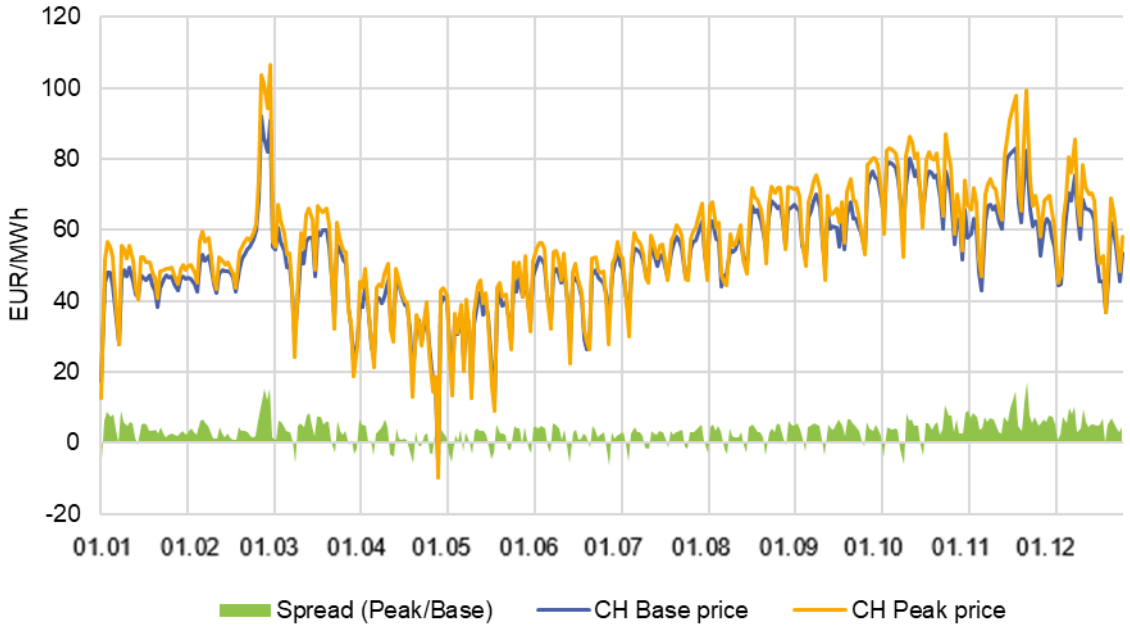

Figure 14: Swiss base, peak and day-ahead prices 2018

A comparison of day-ahead price developments in the three markets of Switzerland, Germany and France can be found in Figure 15.

At the end of February 2018 there were exceptionally high prices due to a cold spell with average daily temperatures of minus ten degrees Celsius. The price difference between Germany and Switzerland was considerable during this phase. If the load in Switzerland and France is considerable due to low temperatures, renewable energy generation in Germany cannot prevent the Swiss electricity price from skyrocketing. The available import capacities were fully exploited during the cold spell.

On 1 May 2018, however, base and peak prices were negative. The lower load caused by the holiday in Germany, combined with the high feed-in of wind and solar power, led to an oversupply of non-flexible thermal production in Germany, which also pushed prices into negative figures in Switzerland.

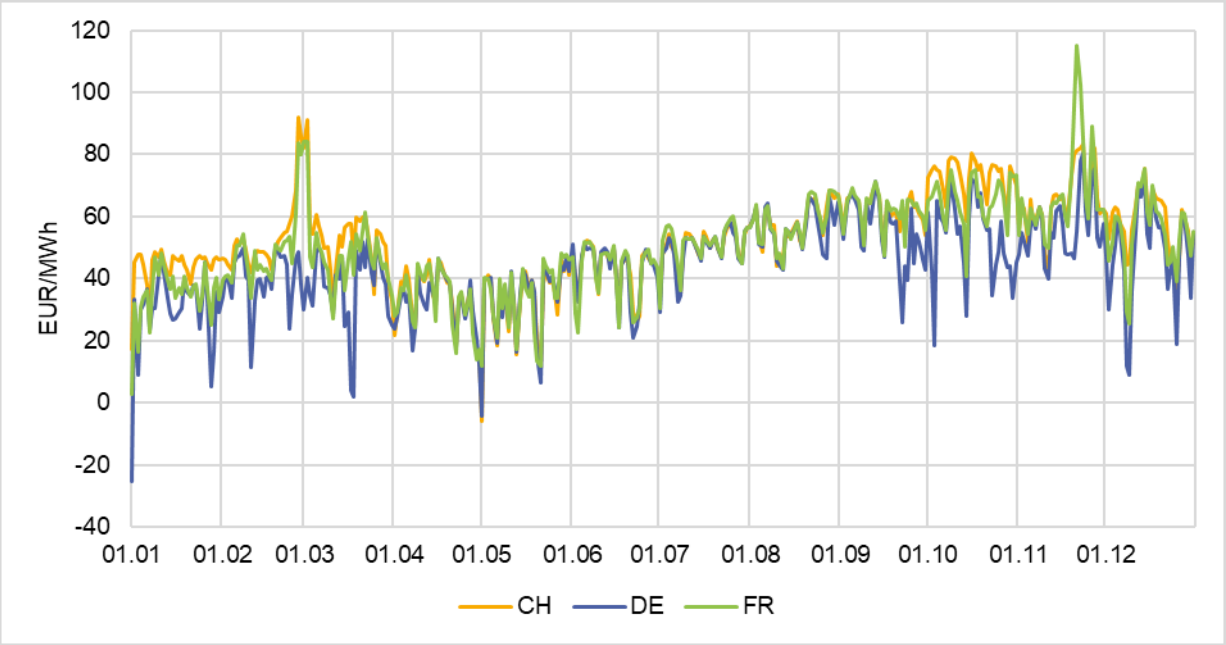

Figure 15: Day-ahead base prices for Switzerland, Germany and France

Electricity demand in Switzerland in 2018 followed the typical trend over the year: high demand in the winter months due to greater demand for heating and lighting, lower demand in the summer (see Figure 16). In 2018, demand was above the normal level, especially during the cold spell at the end of February and during the summer heat wave (especially in August). January, on the other hand, was rather mild, and demand was accordingly below the normal level. This was also reflected in the spot prices for January, which were comparatively low (see Figure 15). The term “normal” refers to demand under normal weather conditions.

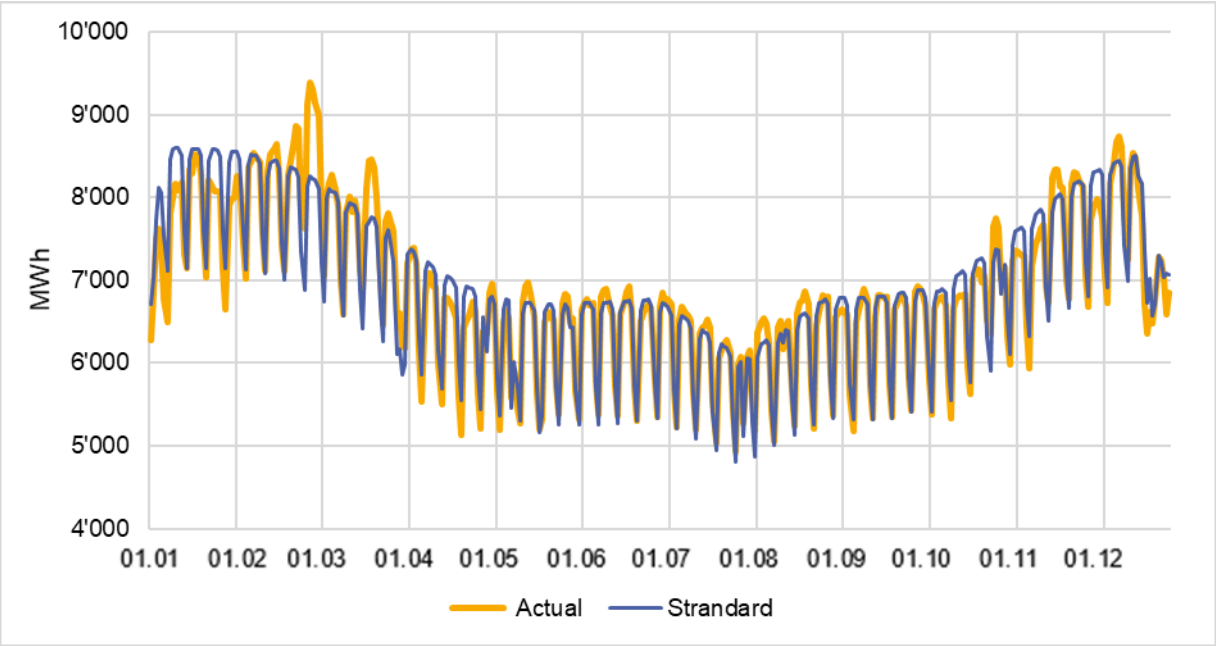

Figure 16: Daily average load in Switzerland in 2018

Data source: Refinitiv Power Research

As can be seen in Figure 17 the commercial flows for 2018 also follow a typical trend: exports to Italy (IT) throughout the year, imports from Germany (DE) and France (FR) especially in the winter months, and almost balanced flows in the summer with imports dominating slightly. In Figure 17 exports from Switzerland are shown as a negative figure, while imports into Switzerland are shown as a positive figure.

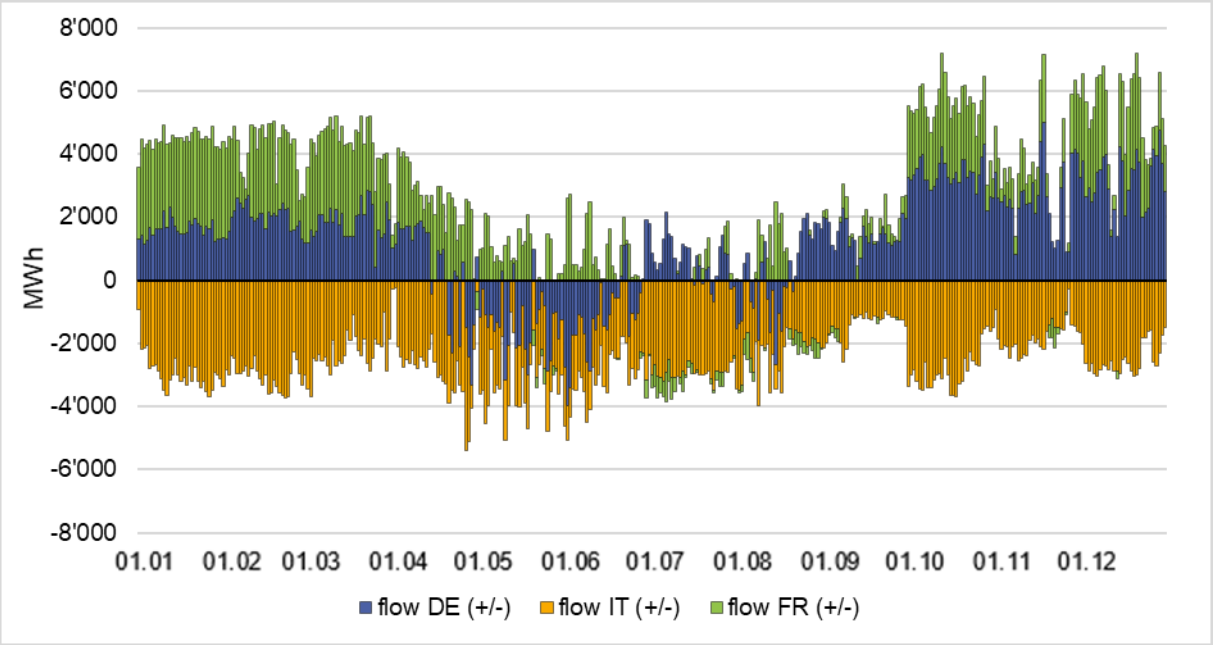

Figure 17: Daily average of Switzerland's net commercial flows with neighbouring countries

Data source: ENTSO-E

A detailed analysis of imports/exports to Germany shows that in May and June 2018 more electricity was sold to Germany than was imported from Germany. This is due to the availability of Swiss hydropower, which is higher in spring after the snow melts.

Most of Switzerland's electricity production in 2018 (excluding wind and solar) was generated by nuclear power plants. The reservoirs and the pump storage power plants made a substantial contribution. As the water levels in the reservoirs reach their lowest point in March/April 2018, production from storage power plants is lowest in these months. Run-of-river power plants normally reach peak production when the snow melts between May and July 2018. Reduced electricity production from nuclear power plants is usually due to maintenance work. In June 2018 Gösgen nuclear power plant was not connected to the grid, while in October 2018 Leibstadt nuclear power plant was not connected to the grid. The amount of energy fed into the grid from nuclear power plants was correspondingly lower in these months, as shown in Figure 18. As the contribution from new renewable energies to current electricity production in Switzerland is very low, these are not shown in Figure 18. This is shown separately in Figure 21.

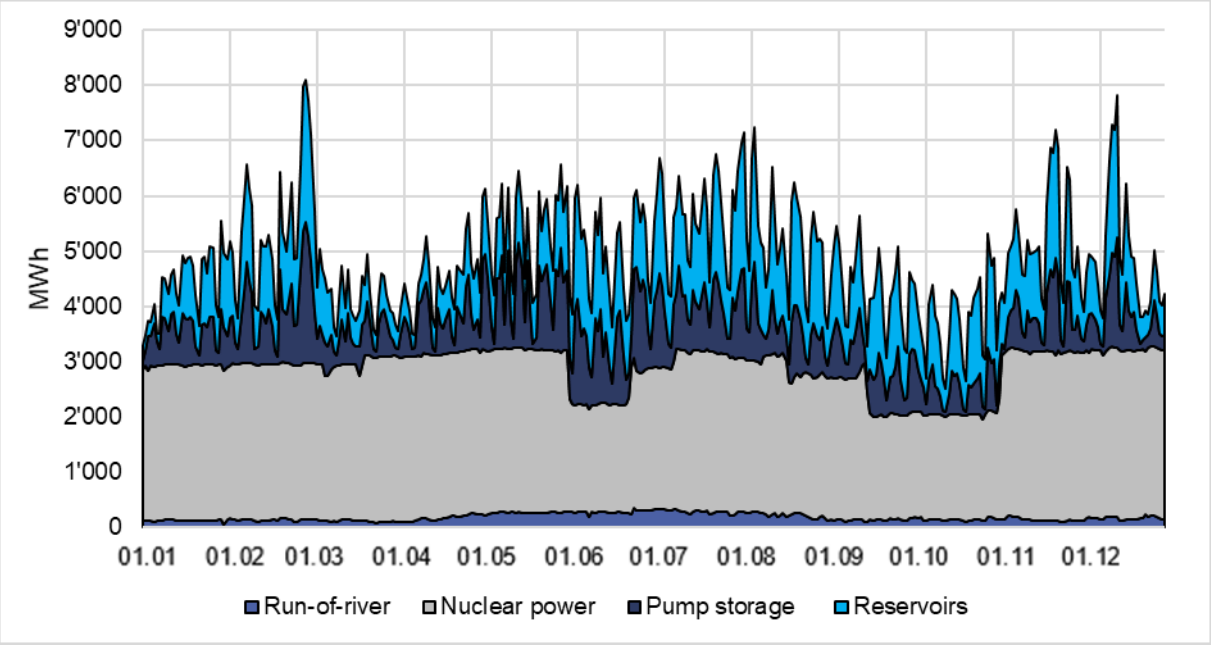

Figure 18: Daily average electricity production in Switzerland by type of production

As in Switzerland, in France nuclear power stations make the largest contribution to electricity production (see Figure 19).

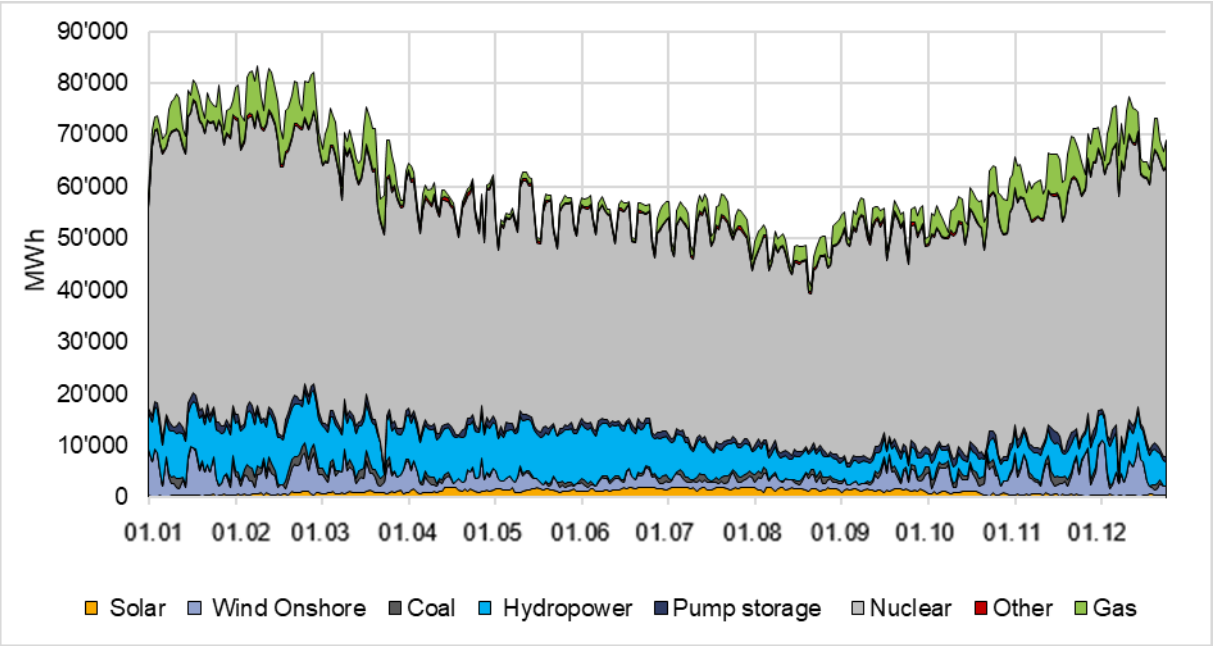

Figure 19: Daily average electricity production in France by type of production

Data source: ENTSO-E

In Germany, new renewable energies, lignite and hard coal accounted for the majority of electricity generation (see Figure 20). The various power plants and the different marginal costs and border flows are one reason for the sometimes (and in winter particularly pronounced) price differences between Germany and Switzerland (see also Figure 15).

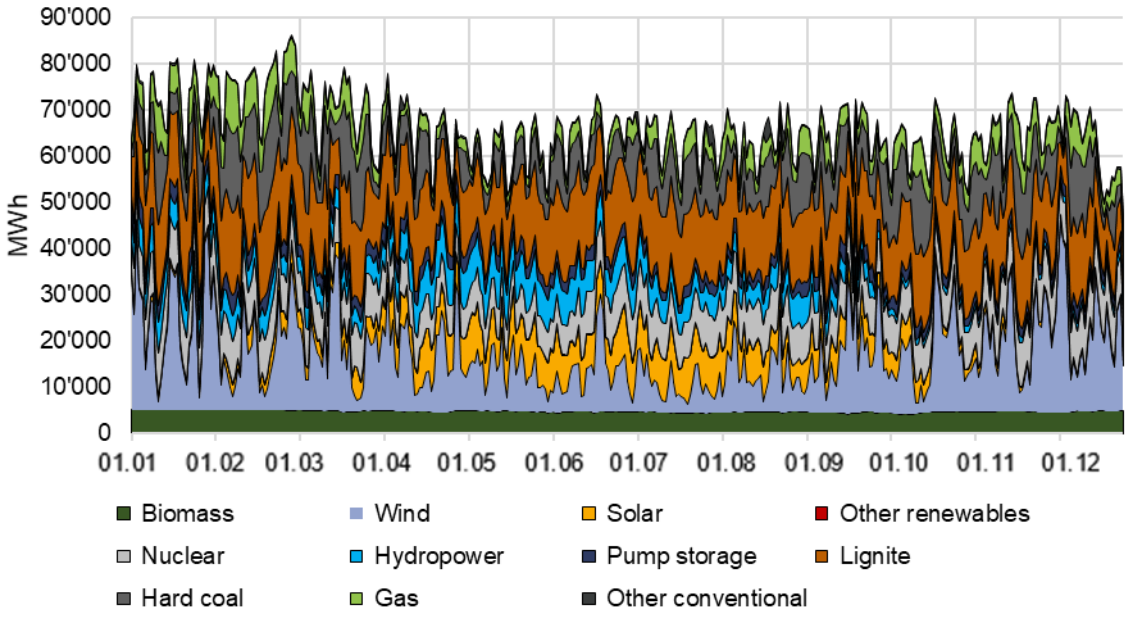

Figure 20: Daily average electricity production in Germany by type of production

Among the new renewable energies in Switzerland, solar power is of particular note. It produced just over six times as much electricity as wind power in 2018. In the first and fourth quarters, electricity production from solar power plants was significantly reduced due to the seasonally lower solar radiation levels. Compared to Germany, the new renewable energies in Switzerland have a much smaller influence on electricity prices, since wind and solar power can only cover a small fraction of demand.

Whereas the average daily production from wind and solar energy in Germany was 17,730 MWh in 2018, it was only 47 MWh in Switzerland (see Figure 21).

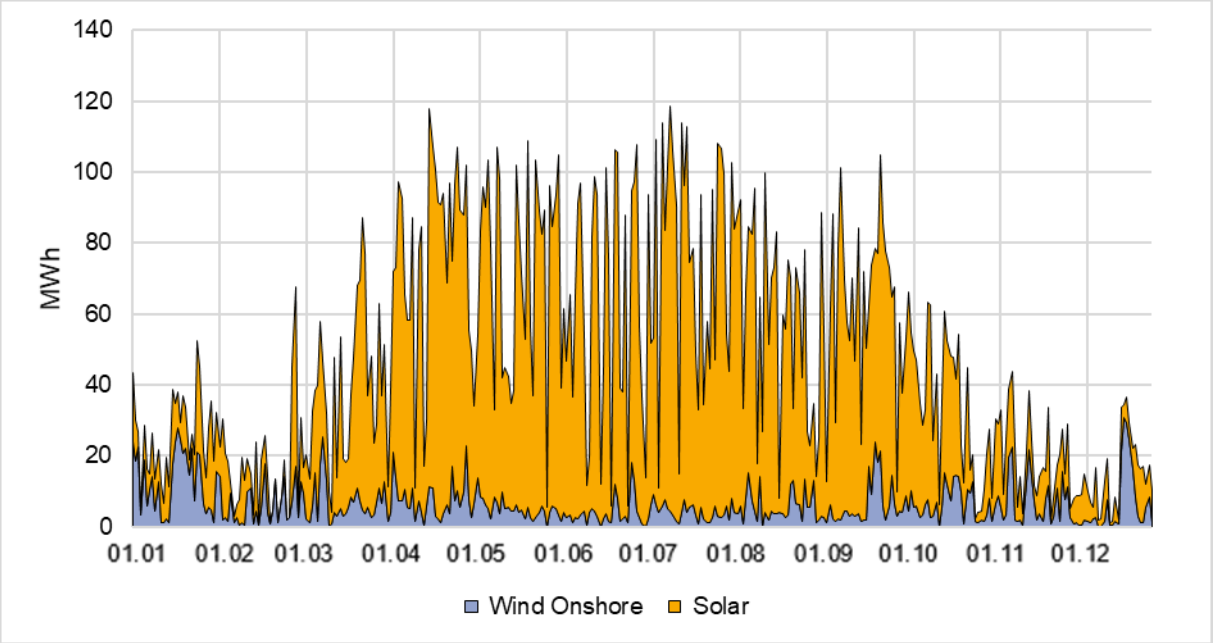

Figure 21: Daily average production from renewable sources in Switzerland

Data source: ENTSO-E

The reservoirs reached their lowest level in April 2018 and by September 2018 had been largely replenished to over seven Terawatt hours of available stored energy. This corresponds to some twelve percent of Switzerland's annual demand (see Figure 22).

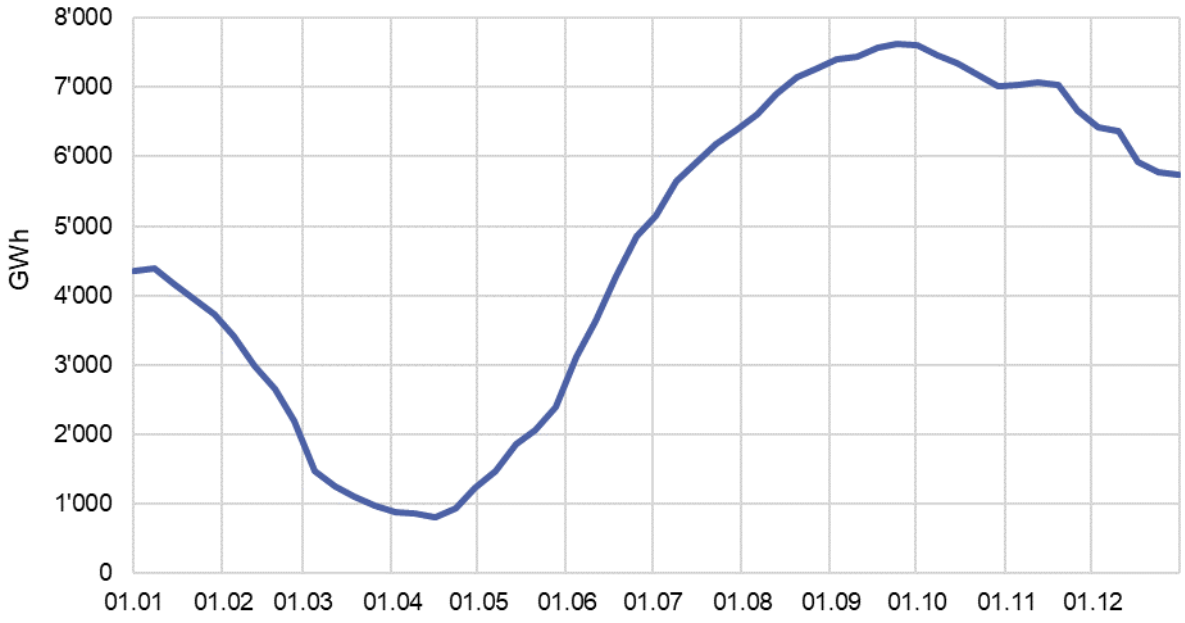

Figure 22: Swiss reservoir levels 2018

Data source: SFOE

4.2 Futures market 2018

Following a slight decline at the beginning of 2018, prices for the base electricity product 2018 (supply of electricity 24 hours a day throughout the whole of 2018) rose significantly until autumn, when they fell slightly again (see Figure 23). While Swiss prices are practically identical to French prices, Italian prices are well above the Swiss level, whereas German prices are markedly lower. The mix of power plants in Switzerland and France is very similar, which is why the futures market prices of these countries usually have similar trends. Gas-fired power plants in Italy and coal-fired power plants in Germany are the main price drivers. At present, coal-fired power plants still have lower marginal costs than gas-fired power plants, which is why German futures market prices are lower than Italian prices. The prices for the operating resources of these two types of power plant have a direct impact on the Swiss electricity price, even though Switzerland has almost no fossil fuel thermal power plants. This is because Switzerland is closely bound to the energy markets of the neighbouring countries (Germany, France and Italy) due to large cross-border commercial flows.

In 2018, rising CO_2, coal and gas prices in particular drove up prices. The availability of French nuclear power plants can also have an impact on the Swiss electricity price. In August 2018 (partly due to the heat wave), this fell below 35 gigawatts, which is more than ten gigawatts below the average available capacity for 2017. This low availability also contributed to the strong price increase in autumn 2018.

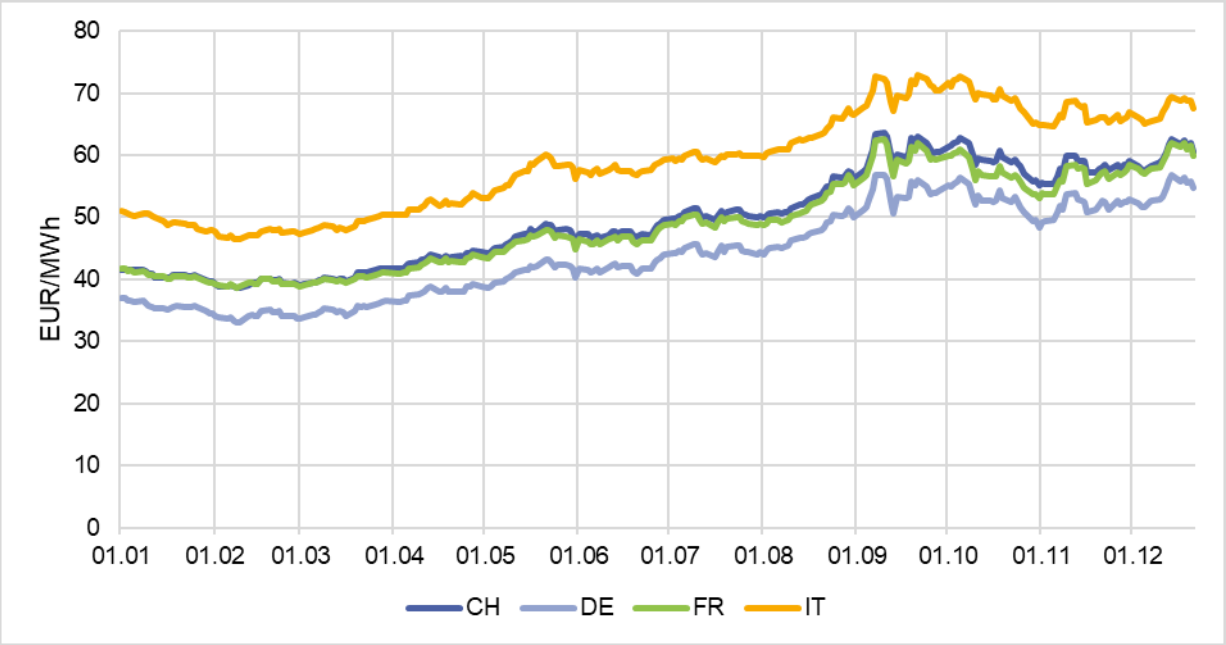

Figure 23: Electricity base prices year ahead contracts 2018

Data source: EEX

The price of CO_2 certificates rose sharply under pressure from the approaching launch of the market stability reserve (early 2019). The market stability reserve in CO_2 certificate trading was introduced in order to withdraw surplus certificates from the market to stabilise and increase prices and contribute to the realisation of climate targets. The reduced availability of French nuclear power plants in autumn 2018 also had an impact on certificate prices. If there is a need for electricity from nuclear plants to be replaced by electricity from coal- and gas-fired power plants, CO_2 emissions will rise, driving up demand for CO_2 certificates. This drove up certificate prices in autumn 2018. Speculative trading also supported the upward trend during this phase (see Figure 24).

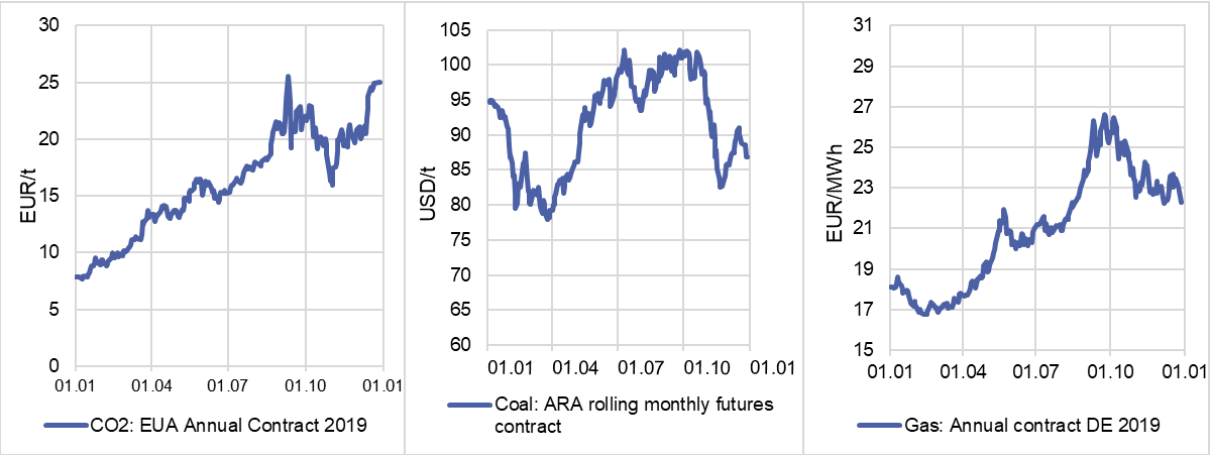

Figure 24: CO_2, coal and natural gas price trends for 2020 contracts

Figure 24 illustrates how coal prices rose earlier in the year. The low gas storage levels in spring played a role here, increasing demand for coal. Drivers from the oil market, such as rising prices and production bottlenecks, also drove coal prices up. Towards the end of 2018, however, coal prices came under pressure again. China, the most important player in the global coal market with over 50% of global demand, increased domestic production and reduced coal imports accordingly. As a result, European coal prices came under pressure.

Bottlenecks in supply from Norway and seasonal filling of gas storage facilities caused gas prices to rise sharply in autumn 2018. The reduction towards the end of the year was due to mild temperatures, which caused demand for gas for heating to fall (see Figure 24).

Electricity prices on the futures market are influenced by a number of factors. In addition to fundamental drivers such as CO_2, coal and gas prices, forecasts regarding the availability of power plants and the demand for and expansion of new renewable energies, aspects of market dynamics also play a role. Technical analyses of price developments and short-term trading sentiments, triggered, for example, by news of the oil market, discussions about the coal phase out in Germany and votes on Brexit, can drive the price of an electricity product up or down. In the final analysis, electricity prices will always be subject to a certain degree of speculation.

5 Interaction between the electricity and financial markets

5.1 Legal framework

Since 3 January 2018, the European legislative package on financial market regulation has also regulated the classification of transactions as financial instruments and the use of these financial instruments for the energy industry. The energy industry is particularly affected by the marketing or procurement of energy, since futures are also used for purposes including the long-term marketing of power plant generation as part of risk management, the long-term procurement of sales, and to hedge prices. With these new regulations, a number of changes have entered into force. These specifically serve to regulate the use of financial instruments in commodity trading, i.e. on energy markets.

Switzerland has also provided for comparable legal provisions with the *Financial Market Infrastructure Act* (FMIA) and the *Financial Market Infrastructure Ordinance* (FMIO) (both in force since 1 January 2016) as well as with the *Finanzdienstleistungsgesetz* (Swiss Financial Services Act [FIDLEG]) (expected entry into force 1 January 2020). The following points are particularly important for energy companies:

- According to the MiFID II (*Markets in Financial Instruments Directive 2014/65/EU*) and the FMIA, the range of products to be regarded as financial instruments is expanding. Spot transactions are essentially the supply of products within two trading days. If futures transactions on goods are concluded via external trading platforms such as brokers or exchanges, these contracts are generally regarded as financial instruments - even if they are only physically fulfilled. The only exception is the "*REMIT carve-out*" for wholesale energy products with a place of delivery in the EU, which must be physically fulfilled and concluded via an organised trading facility (OTF). An organised trading facility is a "manual intermediary" that is neither an exchange nor a multilateral trading facility (MTF).

- According to current information, Swiss energy companies are classified as small non-financial counterparties (NFCs). These include companies with an average gross position in outstanding transactions in OTC derivatives, commodity derivatives and other derivatives of less than CHF 3.3 billion. This calculation does not include NFC derivative transactions to reduce risks.

- Derivatives transactions must be reported to a trade repository approved or recognised by FINMA. Transactions between small non-financial counterparties (NFCs) and financial counterparties (FCs) must be reported by the financial counterparties. Transactions between small non-financial counterparties need not be reported, except in the case of cross-border transactions where the foreign counterparty does not report.

- Cross-border NFC transactions must be settled via a central counterparty if the foreign counterparty is required to settle in Switzerland.

- This excludes contracts concluded by transmission network operators for the maintenance of energy systems, in particular for the granting of transport rights.

After the financial crisis of 2009, the aim of the policy was to increase transparency requirements before and after trading in financial instruments and to close loopholes in the structure of financial markets. This was ensured above all by the fact that the trading of financial products is mandatory on regulated marketplaces. Furthermore, the introduction of position limits limited speculation in commodity derivatives.

The MiFID II is the central regulation for financial market regulation in the EU. All other regulations refer to this document. REMIT also refers to the MiFID II in relation to the definition of financial products. The MiFID therefore defines the scope of REMIT. In the area of finance, Switzerland made great efforts to establish the corresponding equivalence with the EU requirements. This equivalence has not yet been implemented with regard to REMIT.

5.2 Reporting according to the FMIA

Swiss energy companies have all declared themselves as NFCs. If an NFC concludes a transaction with a financial counterparty, this transaction must be reported by the FC. Transactions between NFCs need not be reported, except in the case of cross-border transactions where the foreign counterparty does not report.

According to the FMIA, all companies with their registered office in Switzerland, including electricity trading companies, are obliged to report derivative transactions such as *over-the-counter* (OTC) and *exchange-traded derivatives* (ETD) to an approved *transaction register* (also known as a trade repository).

Two transaction registers are permitted for reporting in Switzerland: REGIS-TR and SIX. ElCom is in the process of setting up interfaces with both transaction registers in order to obtain the data which must be reported in this way. It is expected that by the end of 2019 the technical conditions for receiving financial data from both trade repositories REGIS-TR and SIX will be in place.

The reporting obligations of Swiss electricity companies under the FMIA are also discussed at the bilateral meetings between ElCom and FINMA, which take place twice a year.

6 International cooperation

6.1 Participation in international institutions

When ElCom applies Articles 26a ff. of the Electricity Supply Ordinance, there are strong interdependencies in the implementation of REMIT in the EU. As a non-EU member, Switzerland is cut off from major information flows, which is why efforts are being made to make the most effective use of existing networking channels.

Up to and including 2018, ElCom took part in various ACER round tables as an observer in order to maintain an exchange at an operational level with ACER and the stakeholders involved in the implementation of REMIT in the EU member states. ElCom representatives also take part in ACER's annual *Market Integrity and Transparency Forum*, where various aspects relating to the implementation of REMIT are discussed at an EU level. Bilateral meetings are held once a year between representatives of ElCom and employees of the *Market Integrity and Transparency* (MIT) and *Market Surveillance* (MS) departments of ACER on operational issues.

ElCom also has an active presence in the *Market Integrity and Transparency Working Group* (CMIT) of the *Council of the European Energy Regulators* (CEER). In 2018, ElCom assumed one of the chairmanships there. This made it possible to launch the topic of dealing with market participants from third countries, which is an important topic from a Swiss perspective.

At the ENTSO-E, ElCom is involved in the work of the *Energy Transparency User Group* (ETUG), where the redesign of the ENTSO-E's existing transparency platform and the process of data collection and the options for improving its quality and completeness are discussed and measures developed in this regard.

6.2 Cooperation with other regulators

In addition to its international work with European institutions, ElCom maintains contacts with those bodies that deal with market surveillance in neighbouring countries. The thematic exchange with the market surveillance departments of the neighbouring national energy regulators works very well. One or two bilateral coordination meetings per year have been established. During these meetings an exchange of experience takes place.

ElCom also participates in the 2018 working group of energy regulators, which was established to examine the quality of fundamental data and, through dialogue with the ENTSO-E, to work on constructive proposals for its improvement. In this group, ElCom can also contribute its findings from the evaluation of the data transmitted by the ENTSO-E as well as proposals for the elimination of errors in the fundamental data.

6.3 Dealing with third countries

As part of the work of CEER's *CMIT Working Group*, ElCom has proposed and promoted discussions on the interaction and cooperation of EU regulatory authorities with regulators from third countries. Particular attention will be paid to EU regulators contacting market participants from third countries, such as Switzerland, and to the forwarding and processing of STORs to regulatory authorities from these countries.

Based on the principle of territoriality, foreign authorities are in principle prohibited from taking action on Swiss territory. Such action is not prohibited, however, if there is a basis in an international treaty. However, there are currently no international agreements with Switzerland on matters relating to electricity supply law or REMIT. For this reason, a permit must always be obtained in such cases. This is issued by the head of the department concerned (GS-DETEC) with possible notification of the Federal Office of Justice and the Office of the Attorney General of Switzerland.

According to Article 271 paragraph 1 of the Swiss Criminal Code (CC; SR 311.0), it is a criminal offence to carry out or facilitate activities on behalf of a foreign state on Swiss territory without lawful authority, where such activities are the responsibility of a public authority or public official.

In the event of uncertainties or doubts with regard to any enquiries by foreign authorities, market participants in Switzerland may contact ElCom. ElCom welcomes being informed of enquiries and of being contacted by foreign regulatory authorities in connection with REMIT, as the Swiss electricity market can be influenced by market participants' activities that do not comply with REMIT. This would represent a risk to Switzerland's reputation as a marketplace and to Switzerland's reputation in general.

7 Outlook

Functioning markets are based on reliable price signals that reflect supply and demand and are not subject to manipulation. Functioning markets also have a positive effect on supply security. The added value of comprehensive market surveillance is therefore manifold. Firstly, active market monitoring in Switzerland provides preventive protection against market manipulation and insider trading. Secondly, it ensures a fair, transparent and non-manipulated electricity price for end consumers.

Although the implementation of measures to ensure the necessary level of compliance with market surveillance regulations requires organisational and technical resources on the part of the market participants concerned, it has led to the critical evaluation of various internal company processes and has therefore contributed to the standardisation of energy data and the improvement of information management.

Another positive effect of market surveillance is that it gives energy regulators a better understanding of energy markets. This extension of the focus of network topics to market understanding is already evident in the current implementation of the network codes and market guidelines. Here it is intended and necessary for regulators to analyse, understand and approve the various processes and methods. This development requires an understanding of the complex relationships between energy markets and networks.

Market manipulation and insider trading in electricity wholesale are not prohibited in Switzerland today and therefore cannot be sanctioned. This stands in contrast to traditional exchange trading in Switzerland and energy trading in the EU. The necessary legal foundations must be created in order to close this loophole.

One of the future challenges for market surveillance in Switzerland is the entry into force of the Gas Supply Act. Furthermore, with the adoption of a bilateral electricity agreement with the EU, the third framework package would have to be implemented in Switzerland. Since REMIT falls under the third framework package, in this case it would be fully valid and would have to be implemented by ElCom.

Glossary

ACER	Agency for the Cooperation of Energy Regulators
ACM	Autoriteit Consument & Markt (Dutch regulator)
ARERA	Autorità di Regolazione per Energia Reti e Ambiente (Italian regulator)
BNetzA	Bundesnetzagentur (German regulator)
CEER	Council of the European Energy Regulators
CEREMP	Centralised European Register of Energy Market Participants
CMIT	Market Integrity and Transparency Working Group
CNE	Comisión Nacional de Energía (Spanish regulator)
CRE	Commission de régulation de l'énergie (French regulator)
E-Control	Energie-Control GmbH (Austrian regulator)
EEX	European Energy Exchange (European electricity exchange for futures contracts)
EEX TP	European Energy Exchange Transparency Platform
ENTSO-E	European Network of Transmission System Operators for Electricity
EPEX Spot	European Power Exchange (European electricity exchange for spot and intraday trading)
ETD	Exchange-traded derivatives
ETUG	Energy Transparency User Group
FC	Financial counterparties
FIDLEG	Finanzdienstleistungsgesetz (Swiss Financial Services Act)
FMIA	Financial Market Infrastructure Act
FMIO	Financial Market Infrastructure Ordinance
FITS	Flexible Intraday Trading Scheme
FSB	Financial Stability Board
FTR	Financial transmission right
GME	Gestore dei mercati energetici (Italian energy exchange)
GS-DETEC	General Secretariat of the Federal Department of the Environment, Transport, Energy and Communications
JAO	Joint Allocation Office
MMS	Market monitoring systems
MiFID II	Markets in Financial Instruments Directive 2014/65/EU
MIT	Market integrity and transparency
MTF	Multilateral trading facility
MS	Market surveillance
MWh	Megawatt hour
NFC	Non-financial counterparties
NRA	National Regulatory Authority
Ofgem	Office of Gas and Electricity Markets (British regulator)
OMP	Organised marketplaces
OTC	Over-the-counter transactions
OTF	Organised trading facility
PPAT	Person professionally arranging transactions
REMIT	Regulation on Wholesale Energy Market Integrity and Transparency
RRM	Registered reporting mechanisms
STOR	Suspicious transaction order report
StromVV	Swiss Federal Electricity Supply Act
TWh	Terawatt hour
URE	Urząd Regulacji Energetyki (Polish regulator)
XBID	Cross-border intraday