Specialist Certification in EU Energy Law

Energy Market Regulation and Enforcement

Electricity market – The system in which electricity is produced, traded and consumed. In the EU it is divided into wholesale and retail segments, each governed by distinct regulatory rules. The wholesale market handles large-scale transactions between generators, traders and suppliers, while the retail market deals directly with end-users. Understanding the split is essential for any practitioner because compliance obligations differ markedly across the two layers.

Wholesale market – A venue where electricity is bought and sold in bulk, typically through organised exchanges such as EEX or Nord Pool. Transactions are measured in megawatt-hours (MWh) and settled on a day-ahead or intraday basis. For example, a power plant in Spain may sell 500 MWh for delivery the next day on the Iberian market, while a French retailer purchases the same volume to meet its customers' demand. The wholesale market is subject to transparency obligations, including the publication of order books, trade data and price formation methodologies.

Retail market – The segment where electricity is supplied to households, small- and medium-size enterprises, and large industrial consumers. Retail contracts are usually annual and can be fixed-price, index-linked or variable. A retailer must ensure that its offers are clear, non-misleading and that the consumer's right to switch providers is protected. The European Consumer Protection Cooperation network monitors compliance with these standards.

National Regulatory Authority (NRA) – The independent body in each Member State responsible for overseeing the electricity and gas sectors. NRAs implement EU directives, issue licences, set tariffs, and enforce compliance. For instance, the French Commission de Régulation de l'Énergie (CRE) monitors market power and sanctions abuse, while the German Bundesnetzagentur focuses on grid access and congestion management. NRAs cooperate with the European Commission through the European Network of Regulators for Electricity and Gas (ERGEG) (now part of ACER) to ensure a harmonised approach.

European Commission – The EU executive that proposes legislation, enforces competition rules and oversees the application of the energy acquis. The Commission's Directorate-General for Energy (DG ENER) issues implementing acts, publishes guidance, and can initiate infringement procedures against Member States that fail to transpose directives correctly. In enforcement cases, the Commission may refer matters to the European Court of Justice (ECJ).

Regulatory framework – The set of legal instruments that shape the operation of the energy market. At the EU level this includes the Third Energy Package, the Renewable Energy Directive, and the Regulation on the Governance of the Energy Union. National transposition adds layers of detail, such as specific licensing procedures or tariff caps. Professionals must navigate both tiers to advise clients accurately.

Third Energy Package – The cornerstone of EU energy market law, consisting of two regulations and three directives adopted in 2009. It introduced the concepts of unbundling, market liberalisation, and enhanced

consumer rights. The package created the Agency for the Cooperation of Energy Regulators (ACER) and mandated the establishment of national regulatory bodies. Its impact is evident in the separation of generation from transmission assets across many Member States.

Unbundling – The structural separation of transmission system operators (TSOs) from generation and supply activities to prevent conflicts of interest. Unbundling can be achieved through three models:

1. Ownership unbundling – The TSO is owned by a separate shareholder without any generation or supply interests. For example, the Italian TSO Terna is fully independent from any generation company. 2. Legal unbundling – The TSO is a distinct legal entity, but the parent company may retain ownership of generation assets, provided that firewalls are in place. 3. Functional unbundling – The parent company retains ownership but must provide transmission services on a non-discriminatory basis, often under strict monitoring.

Each model imposes different compliance burdens, ranging from reporting obligations to the implementation of internal segregation procedures.

Transmission system operator (TSO) – The entity responsible for the high-voltage grid that transports electricity from generators to distribution networks. TSOs must guarantee open, non-discriminatory access, publish network codes, and manage congestion. The TSO's role in balancing – matching supply and demand in real time – is critical; failure to do so can trigger penalties under the Balancing Responsibility Regulation.

Distribution system operator (DSO) – The operator of the medium- and low-voltage networks that deliver electricity to end-users. DSOs increasingly engage in active network management, integrating distributed generation, electric vehicles and demand-response programmes. Regulatory obligations for DSOs include tariff setting, service quality standards, and the facilitation of customer connection requests within stipulated timeframes.

Generation company (GENCO) – A firm that owns and operates power plants. GENCOs must obtain generation licences, comply with capacity allocation rules, and submit regular production data to the TSO. In markets with capacity mechanisms, GENCOs may receive additional payments for guaranteeing availability during peak periods.

Supply company (SUPCO) – An entity that purchases electricity on the wholesale market and resells it to end-consumers. SUPCOs are subject to licensing, consumer protection rules, and must provide transparent billing. They also bear the risk of price volatility, which they can hedge through financial contracts.

Market coupling – A technical and regulatory mechanism that integrates separate national electricity markets into a single, pan-European market. By aligning price signals across borders, market coupling reduces price differentials and optimises cross-border flows. The Euro-Interconnection project is a practical example, where bids from Germany, France and the Netherlands are matched simultaneously, improving efficiency and lowering consumer prices.

Congestion management – The set of procedures used by TSOs to resolve situations where transmission

capacity is insufficient to accommodate all scheduled flows. Methods include redispatch (adjusting generation dispatch), counter-trading (selling electricity on the market to relieve congestion), and the use of ancillary services. Effective congestion management is essential to avoid curtailment and to maintain market integrity.

Ancillary services – Services that support the reliable operation of the power system, such as frequency regulation, voltage control, and reserve provision. These services are procured through separate markets and are remunerated based on performance. For example, a battery storage operator may provide fast frequency response, earning revenue from the ancillary services market while also participating in the energy market.

Balancing – The continuous process of matching electricity supply and demand in real time. Balancing is performed by the TSO, which may call upon balancing providers to increase or decrease generation, or to consume electricity. Participants that deviate from their scheduled positions are subject to imbalance charges, calculated based on the TSO's marginal cost of balancing.

Balancing responsibility – The obligation of market participants to ensure that their contracted positions are honoured. In most EU markets, the responsibility lies with the party that entered the contract – typically the supplier or the generator. Failure to meet balancing obligations can result in financial penalties, known as imbalance penalties.

Imbalance settlement – The financial mechanism that reconciles differences between contracted and actual electricity flows. Settlement is usually performed on a daily basis, with charges reflecting the TSO's cost of restoring equilibrium. Accurate metering and timely data submission are crucial to avoid costly settlement outcomes.

Market monitoring – The systematic observation of market behaviour to detect anomalies, anti-competitive conduct, or market failures. NRAs and ACER conduct monitoring through data analysis, market reviews, and stakeholder consultations. When irregularities are identified, authorities may issue warnings, impose corrective measures, or refer cases to competition authorities.

Market abuse – Conduct that distorts market functioning, including insider trading, market manipulation, and collusion. The EU Market Abuse Regulation (MAR) defines prohibited practices and sets out disclosure obligations. For instance, a trader who uses non-public information about a planned outage to place trades ahead of the market would be committing insider trading.

Insider trading – The use of confidential, price-sensitive information to gain an advantage in the market. Energy companies must implement internal controls, such as Chinese walls, to prevent the leakage of privileged information. Violations can lead to criminal sanctions, fines, and reputational damage.

Market manipulation – Actions intended to create artificial price movements or to mislead other participants. Examples include "wash trades" (simultaneous buying and selling to create false volume) or "spoofing" (placing large orders that are cancelled before execution to influence prices). Regulators employ sophisticated algorithms to detect patterns indicative of manipulation.

Price fixing – An agreement between competitors to set, raise, or stabilize prices. In the energy sector, price fixing may occur through informal “clubs” of generators coordinating bids in a capacity auction. The European Commission’s competition division actively investigates such conduct, imposing fines that can reach up to 10% of a firm’s annual turnover.

Collusion – Cooperative behaviour among market participants that restricts competition. Collusion can be explicit (written agreements) or tacit (parallel conduct). In electricity markets, collusion may manifest as coordinated outages to create scarcity and drive up prices. Authorities assess the presence of “concerted practices” by analysing communication records and market outcomes.

Dominant position – A status that a firm holds when it has a significant share of the market and the ability to act independently of competitors, customers, or consumers. Determining dominance involves assessing market share, barriers to entry, and the firm’s financial strength. A dominant firm must refrain from abusing its position, such as by imposing unfair access terms on competitors.

Abuse of dominance – Conduct that exploits a dominant position to the detriment of competition. Typical abuses include predatory pricing, refusal to supply, or discriminatory tariffs. The EU competition rules require that dominant firms provide transparent, non-discriminatory access to essential facilities, such as transmission capacity.

Merger control – The regulatory process that reviews and approves mergers and acquisitions to prevent anti-competitive concentration. The European Commission assesses whether a proposed transaction would significantly impede effective competition within the internal market. In the energy sector, high-profile cases have involved the acquisition of large generation portfolios, prompting remedies such as asset divestitures.

State aid – Financial assistance granted by a Member State that may distort competition. Energy-related state aid includes subsidies for renewable projects, capacity mechanisms, or strategic reserves. The Commission evaluates aid under the “de minimis” rule, the “general block exemption regulation” (GBER), and sector-specific guidelines. Non-compliant aid can be recovered, and the beneficiary may face penalties.

Capacity mechanism – A policy instrument that ensures security of supply by remunerating generators for maintaining available capacity, regardless of actual production. Capacity mechanisms are used in markets where market signals alone may not guarantee sufficient investment, such as in regions with high renewable penetration. Participants receive capacity payments after proving that they can deliver electricity when needed.

Strategic reserves – Stockpiles of generation capacity that can be called upon during emergencies or extreme scarcity. The EU’s strategic reserve framework allows Member States to activate reserves to prevent price spikes and supply disruptions. Operators of strategic reserves must meet strict availability and performance criteria, and are compensated for their readiness.

Energy security – The ability of an energy system to provide reliable, affordable, and sustainable supply. Energy security considerations drive many regulatory measures, including diversification of supply sources,

investment in interconnections, and the development of strategic reserves. Regulators balance security objectives with market efficiency and environmental goals.

Renewable support schemes – Mechanisms that promote the development of renewable energy sources. The EU employs a mix of feed-in tariffs, auction schemes, and market premiums. For example, Germany's "Renewable Energy Sources Act" (EEG) guarantees a fixed price for wind and solar output, while Spain conducts competitive auctions for renewable capacity. These schemes must comply with state-aid rules to avoid illegal subsidies.

Feed-in tariff (FIT) – A policy that guarantees a fixed price for electricity generated from renewable sources, typically for a set period. FITs provide revenue certainty, encouraging investment in technologies such as solar PV or on-shore wind. However, FITs can be costly for consumers if not carefully designed, leading to debates over their long-term sustainability.

Guarantee of origin (GO) – A certificate that verifies the renewable origin of electricity. GOs enable consumers to purchase "green" electricity without physically separating the power flow. In the EU, the GO scheme is regulated by the Renewable Energy Directive, and GOs are tradable on secondary markets. Companies often use GOs to meet corporate sustainability targets.

Demand response – The adjustment of electricity consumption in response to price signals or grid needs. Demand response programmes incentivise industrial or residential customers to reduce load during peak periods, providing a flexible resource for balancing. An example is a large manufacturing plant that curtails production when the market price exceeds a pre-agreed threshold, receiving compensation for the reduction.

Smart grid – An electricity network that uses digital communication technology to monitor and manage the flow of electricity. Smart grids enable real-time data collection, automated fault detection, and integration of distributed resources. They support advanced functionalities such as dynamic pricing, which can enhance demand-side participation and improve system efficiency.

Distributed generation (DG) – Small-scale generation located close to the point of consumption, such as rooftop solar, small wind turbines, or combined heat-and-power (CHP) units. DG challenges traditional grid planning, requiring new connection rules, net-metering arrangements, and mechanisms to compensate for feed-in. Regulators must balance the benefits of DG with the need to maintain grid stability.

Transparency – The principle that market participants must have access to accurate, timely, and non-discriminatory information. Transparency obligations include the publication of market data, the disclosure of capacity allocation results, and the reporting of outages. Transparent markets reduce information asymmetry, mitigate the risk of manipulation, and foster investor confidence.

Data reporting – The mandatory submission of operational and commercial data to authorities or system operators. Reporting requirements cover generation output, consumption forecasts, network constraints, and market transactions. Failure to report or providing inaccurate data can result in administrative fines and affect the reliability of market operations.

Public service obligations (PSOs) – Duties imposed on energy suppliers to ensure universal service, social tariffs, or the provision of ancillary services. PSOs are often financed through a levy on all market participants, and they must be proportionate, non-discriminatory, and justified under EU law. An example is the obligation to supply electricity to remote villages at affordable rates.

Consumer rights – A set of protections that guarantee fair treatment, transparent information, and the ability to switch suppliers. EU directives require that contracts disclose all charges, that customers receive a minimum number of hours of supply per year, and that vulnerable consumers are offered special assistance. Enforcement agencies monitor compliance and can impose sanctions for breaches.

Energy poverty – A situation in which households are unable to afford adequate energy services. Regulators address energy poverty through targeted subsidies, social tariffs, and energy-efficiency programmes. The EU's "Energy Poverty Indicator" helps Member States design policies that reduce the burden on low-income families.

Regulatory compliance – The act of adhering to all applicable laws, regulations, and standards. In the energy sector, compliance programmes typically include internal audits, staff training, and the implementation of compliance officers. Effective compliance reduces the risk of enforcement actions, fines, and reputational damage.

Enforcement actions – Measures taken by regulators to correct non-compliance. These can range from informal warnings and corrective orders to formal penalties and revocation of licences. For example, a TSO that fails to publish network codes on time may receive a monetary sanction, while a supplier that misleads consumers could be ordered to pay compensation.

Penalty – A financial sanction imposed for breach of regulatory obligations. Penalties can be fixed amounts, percentage-based on turnover, or variable depending on the severity of the violation. The EU's "proportionality principle" requires that penalties are effective, deterrent, and proportionate to the infringement.

Fine – A specific type of penalty, often used in competition law cases. Fines are calculated based on the infringing firm's annual turnover and the gravity of the abuse. In the energy sector, fines have been levied for market manipulation, illegal state aid, and breaches of unbundling requirements.

Remedy – An action ordered by an authority to restore compliance, such as the divestiture of assets, the modification of contracts, or the implementation of structural changes. Remedies may be "structural" (changing the organisation) or "behavioral" (altering conduct). In a merger case, a remedy could require the seller to spin off a generation asset to maintain competition.

Remediation – The process of correcting a breach after it has occurred. Remediation may involve the repayment of undue profits, the adjustment of tariffs, or the undertaking of environmental mitigation measures. Effective remediation can mitigate the impact of non-compliance and reduce the likelihood of future enforcement.

Regulatory sandbox – A controlled environment that allows innovators to test new technologies or business

models under relaxed regulatory conditions. Sandboxes are used to explore the integration of blockchain for peer-to-peer energy trading, or to trial advanced demand-response schemes. Participants must agree to monitoring and reporting, and the sandbox is time-limited.

Innovation hub – A platform that brings together regulators, industry players, academia, and start-ups to develop and test innovative solutions. EU programmes such as Horizon Europe fund innovation hubs that focus on grid flexibility, renewable integration, and digitalisation. The output of hubs can inform future regulatory adjustments.

Market design – The arrangement of rules, mechanisms, and institutions that shape market operation. Market design decisions affect price formation, capacity allocation, and the integration of renewables. For instance, the shift from a single-price to a zonal pricing model in the Iberian market was driven by the need to reflect transmission constraints more accurately.

Congestion pricing – A method of charging users for the use of congested network sections, incentivising the reduction of load during peak periods. Congestion pricing aligns economic signals with physical constraints, encouraging participants to adjust consumption or generation patterns. In some EU markets, congestion charges are reflected in the day-ahead price through the market coupling algorithm.

Capacity allocation – The process by which transmission rights are granted to market participants for a specific period. Allocation methods include auction, first-come-first-served, and merit-order based on technical criteria. Transparent capacity allocation is essential to prevent discriminatory treatment of generators.

Tariff – The price charged for the use of a network or for the supply of electricity. Tariffs can be regulated (set by the NRA) or market-based. Regulated tariffs typically apply to network access, while supply tariffs are negotiated between suppliers and consumers. Tariff design must reflect cost causality, promote efficiency, and ensure affordability.

Balancing market – A sub-market where participants submit bids to increase or decrease generation or consumption in real time. Balancing markets operate on a very short timescale (seconds to minutes) and are essential for maintaining system stability. Participants receive remuneration based on the marginal cost of the balancing action.

Ancillary services market – A market that procures services necessary to support the transmission system, such as frequency control, voltage support, and reserve. The market is typically run by the TSO, and participants are compensated for the capacity they commit and the energy they deliver. Effective ancillary services markets enhance system reliability and enable higher shares of variable renewables.

Renewable energy certificates (RECs) – Tradable instruments that certify the generation of one megawatt-hour of renewable electricity. RECs can be used by suppliers to meet renewable portfolio standards. In the EU, RECs are linked to guarantees of origin, providing a transparent mechanism for tracking renewable generation.

Carbon pricing – The cost imposed on carbon emissions, either through a tax or an emissions trading

system (ETS). The EU ETS is the largest carbon market, covering power plants and industrial facilities. Carbon pricing influences investment decisions, encouraging low-carbon technologies and affecting wholesale electricity prices.

Emission allowance – A permit that grants the holder the right to emit a specific amount of CO_2. Allowances are allocated through auctions or free allocation, and can be traded on the ETS. Companies that reduce emissions can sell surplus allowances, creating a financial incentive for decarbonisation.

Market coupling algorithm – The computational method used to match supply and demand across interconnected markets, taking into account transmission constraints. The algorithm determines the optimal cross-border flows that minimise price differences while respecting network limits. Understanding the algorithm is vital for traders who aim to optimise cross-border positions.

Cross-border trade – The exchange of electricity between Member States. Cross-border trade enhances market efficiency, improves security of supply, and facilitates the integration of renewables. However, it also raises regulatory challenges, such as harmonising grid codes, coordinating congestion management, and ensuring fair access.

Grid code – A set of technical specifications that define how generators, consumers, and other participants must connect to and operate on the network. Grid codes cover aspects such as voltage control, frequency response, and fault ride-through capabilities. Compliance with the grid code is mandatory, and non-compliance can lead to disconnection or penalties.

Connection agreement – A contract between a generator or consumer and the TSO/DSO that sets out the terms for network connection. The agreement includes technical parameters, connection charges, and timelines. Regulators monitor connection agreements to prevent undue delays and ensure that capacity is allocated fairly.

Network tariff – The component of the electricity price that reflects the cost of using the transmission or distribution network. Network tariffs are regulated to reflect the cost of network operation, maintenance, and investment, and are subject to periodic review by the NRA. Transparent network tariffs are essential for price formation and competition.

Regulatory reporting – The periodic submission of information required by regulators, covering financial performance, market activities, and compliance status. Reporting deadlines are strict, and inaccurate reports can trigger enforcement actions. Companies often implement dedicated reporting systems to streamline data collection and ensure accuracy.

Compliance officer – An individual within an organisation responsible for overseeing adherence to legal and regulatory requirements. The compliance officer coordinates internal audits, provides training, and liaises with regulators. In the energy sector, the officer may also manage whistle-blowing mechanisms and monitor market-abuse risks.

Whistle-blowing – The act of reporting wrongdoing, such as fraud or market manipulation, to authorities. EU law protects whistle-blowers from retaliation, encouraging the disclosure of illicit activities. Energy firms

establish internal channels to capture whistle-blowing reports and to cooperate with investigations.

Risk management – The systematic identification, assessment, and mitigation of risks that could affect an organisation's objectives. In the energy market, risk management covers price volatility, regulatory changes, operational failures, and reputational threats. Robust risk-management frameworks are essential for maintaining compliance and financial stability.

Financial instrument – A contract that derives its value from an underlying asset, such as futures, options, or swaps. Energy companies use financial instruments to hedge against price fluctuations. For example, a retailer may enter a futures contract to lock in the price of electricity for the next year, reducing exposure to spot-market volatility.

Hedging strategy – A plan that uses financial instruments to offset potential losses in the physical market. Effective hedging requires accurate forecasting, understanding of market dynamics, and compliance with reporting obligations. Regulatory guidelines often require firms to disclose their hedging positions to ensure transparency.

Liquidity – The ease with which an asset can be bought or sold without affecting its price. Liquid markets attract participants, improve price discovery, and reduce transaction costs. In electricity markets, liquidity is influenced by the number of participants, the availability of trading platforms, and the design of market rules.

Price formation – The process by which market prices are determined, based on supply, demand, and network constraints. Price formation mechanisms differ between day-ahead, intraday, and balancing markets. Understanding price formation is crucial for participants to develop trading strategies and for regulators to assess market efficiency.

Market participant – Any entity that engages in the buying, selling, or supplying of electricity, including generators, traders, suppliers, and consumers. Market participants are subject to licensing requirements, reporting obligations, and compliance standards. They must also adhere to codes of conduct and anti-money-laundering (AML) rules.

Licensing regime – The set of procedures and criteria that a regulator uses to grant permission to operate in the electricity market. Licences may be required for generation, supply, transmission, and distribution activities. The licensing regime ensures that participants meet technical, financial, and organisational standards.

Financial viability – The ability of a company to meet its financial obligations over the long term. Regulators assess financial viability when setting tariffs, approving investments, or evaluating the adequacy of capital buffers. A lack of financial viability can lead to insolvency, jeopardising supply security.

Capital expenditure (CAPEX) – Investments in physical assets such as power plants, transmission lines, and substations. CAPEX decisions are influenced by market signals, regulatory incentives, and policy frameworks. Accurate forecasting of CAPEX is essential for planning and for securing financing.

Operational expenditure (OPEX) – Ongoing costs associated with the operation and maintenance of assets. OPEX includes fuel costs, staff salaries, and routine maintenance. Regulators often require the disclosure of OPEX to assess cost efficiency and to set appropriate tariffs.

Cost-reflective tariff – A tariff that mirrors the actual cost of providing a service, ensuring that users pay proportionally to the resources they consume. Cost-reflective tariffs promote efficiency and prevent cross-subsidisation. They are a key principle in EU energy regulation.

Cross-subsidisation – The practice of charging some customers higher rates to subsidise the costs of others. While sometimes justified for social objectives, cross-subsidisation must be transparent and proportionate, and it may be scrutinised under competition law if it distorts market conditions.

Regulatory impact assessment (RIA) – An analysis conducted before adopting new legislation to evaluate its economic, social, and environmental effects. RIAs help policymakers design measures that achieve objectives while minimising unintended consequences. In the energy sector, RIAs may examine the impact of new capacity mechanisms on market competition.

Stakeholder consultation – The process of engaging interested parties, such as industry groups, consumer organisations, and NGOs, in the development of policies or regulations. Effective consultation improves the quality of regulation and fosters acceptance. EU regulators publish consultation documents and invite written submissions.

Compliance audit – An independent review of an organisation's adherence to legal and regulatory requirements. Audits may be internal or external, and they focus on areas such as data reporting, licensing, and anti-corruption controls. Findings are reported to senior management and may trigger corrective actions.

Corrective measure – An order issued by a regulator to rectify a breach, such as the amendment of a contract, the adjustment of a tariff, or the implementation of a compliance programme. Corrective measures aim to restore market integrity without imposing excessive penalties.

Administrative sanction – A non-criminal penalty imposed by a regulator, often in the form of a fine, a suspension of activity, or a revocation of a licence. Administrative sanctions are proportionate to the seriousness of the breach and are intended to deter future non-compliance.

Criminal sanction – A penalty that involves prosecution under criminal law, potentially resulting in imprisonment or criminal fines. In the energy sector, criminal sanctions may apply to severe cases of market manipulation, fraud, or corruption. The threshold for criminal liability is higher than for administrative actions.

Legal remedy – The recourse available to a party that has suffered damage due to a regulatory breach. Legal remedies may include compensation, injunctions, or the annulment of a decision. Parties can bring actions before national courts or, in certain circumstances, before the EU's General Court.

Judicial review – The process by which a court examines the legality of a regulatory decision. Judicial review

can be sought on grounds such as lack of competence, procedural irregularities, or violation of EU law. Energy companies often use judicial review to challenge licence refusals or tariff determinations.

European Court of Justice (ECJ) – The highest court in the EU, responsible for interpreting EU law and ensuring its uniform application. The ECJ can issue binding rulings on the interpretation of directives, regulations, and decisions. Its case law shapes the evolution of EU energy regulation.

European Court of Auditors (ECA) – The institution that audits the EU's finances, including the implementation of energy programmes. The ECA assesses whether EU funds are used efficiently, effectively, and in compliance with legal requirements. Its reports can trigger corrective actions by the Commission.

State-owned enterprise (SOE) – A company in which the government holds a controlling stake. SOEs in the energy sector may include national utilities or transmission operators. Their status raises specific competition concerns, particularly regarding potential state aid or distortion of market competition.

Privatisation – The transfer of ownership or control from the public sector to private investors. In the EU, many former SOEs have been privatised to promote competition and efficiency. The process must comply with EU competition rules, and any remaining public functions may be retained as PSOs.

Corporate governance – The system of rules, practices, and processes by which a company is directed and controlled. Good corporate governance in the energy sector includes clear accountability, risk management, and alignment of incentives with regulatory compliance. Board members must understand the regulatory environment to guide strategic decisions.

Board of directors – The body responsible for overseeing the management of a company. In energy firms, the board must ensure that the organisation complies with licensing conditions, market rules, and environmental obligations. Board composition often includes independent members with expertise in energy law and regulation.

Environmental regulation – The body of law that governs the environmental impacts of energy production and consumption. EU directives such as the Industrial Emissions Directive and the Renewable Energy Directive set limits on emissions, promote clean technologies, and require monitoring. Non-compliance can lead to fines and the suspension of operating licences.

Emission reporting – The mandatory disclosure of greenhouse-gas emissions by regulated entities. In the EU, large emitters must submit annual reports to the European Union Registry for Emissions (EURE). Accurate reporting is essential for the functioning of the ETS and for meeting climate-policy targets.

Carbon leakage – The risk that companies relocate production to jurisdictions with less stringent climate policies, undermining the effectiveness of carbon pricing. To prevent carbon leakage, the EU may allocate free emission allowances to sectors at risk, such as cement or steel. Regulators monitor leakage indicators and adjust policies accordingly.

Energy efficiency directive (EED) – An EU law that sets binding measures to improve energy efficiency across the Union. The EED requires Member States to establish energy-efficiency obligations for energy

distributors, promote energy-performance contracting, and conduct regular audits. Compliance contributes to the EU's energy-saving targets.

Energy performance contracting (EPC) – A contractual arrangement where an energy service company (ESCO) implements efficiency measures and is paid from the resulting savings. EPCs are encouraged by the EED and can be used by public bodies to reduce energy consumption without upfront capital.

Smart metering – Advanced metering devices that record electricity consumption in real time and communicate data to the supplier. Smart meters enable dynamic tariffs, facilitate demand-response programmes, and improve billing accuracy. Deployment is often mandated by national regulation, with EU guidelines on interoperability and data protection.

Data protection – The legal framework that safeguards personal data, primarily governed by the General Data Protection Regulation (GDPR). Energy companies must ensure that customer data collected via smart meters or billing systems is processed lawfully, stored securely, and that individuals can exercise their rights to access and rectify information.

Cybersecurity – The protection of information systems against unauthorized access, disruption, or damage. Energy infrastructure is a critical sector, and regulators require operators to implement robust cybersecurity measures, conduct risk assessments, and report incidents. The EU's NIS Directive establishes security obligations for operators of essential services, including TSOs.

Incident reporting – The obligation to notify authorities of significant cybersecurity events or operational disruptions. Prompt reporting enables coordinated responses and helps mitigate wider impacts. Failure to report within the stipulated timeframe can result in administrative penalties.

Grid resilience – The capacity of the electricity network to withstand and recover from disturbances, such as extreme weather, cyber attacks, or equipment failures. Resilience measures include redundancy, hardening of infrastructure, and the development of emergency operating procedures. Regulators assess resilience through stress-testing and scenario analysis.

Energy transition – The shift from fossil-based energy systems to low-carbon, renewable, and digitised configurations. The transition is guided by EU climate goals, the Fit for 55 package, and national energy strategies. It involves challenges such as integrating variable renewables, upgrading grid infrastructure, and ensuring social acceptance.

Fit for 55 – The EU legislative package aimed at reducing net greenhouse-gas emissions by at least 55 % by 2030 compared with 1990 levels. It includes revisions to the ETS, the Renewable Energy Directive, and the Energy Efficiency Directive. The package introduces new obligations for market participants, such as increased carbon-price exposure and stricter efficiency standards.

Decarbonisation – The process of reducing carbon emissions in the energy sector. Decarbonisation pathways involve expanding renewable generation, deploying carbon capture and storage (CCS), and promoting electrification of transport and heating. Regulatory incentives, such as tax credits and grant programmes, support decarbonisation investments.

Electrification – The shift of energy consumption from fossil fuels to electricity, especially in transport (e-cars) and heating (heat pumps). Electrification increases electricity demand, requiring careful planning of generation capacity and grid reinforcement. Policies such as the Alternative Fuels Infrastructure Regulation encourage the rollout of charging stations.

Hydrogen strategy – The EU's plan to develop a hydrogen economy, focusing on the production of green hydrogen from renewable electricity. The strategy outlines measures for market development, infrastructure, and standards. Regulators must address issues such as the allocation of capacity for hydrogen injection into gas networks and the certification of renewable hydrogen.