European Power and Utilities report

KPMG Global Energy Institute

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2Q19–3Q19

Contents

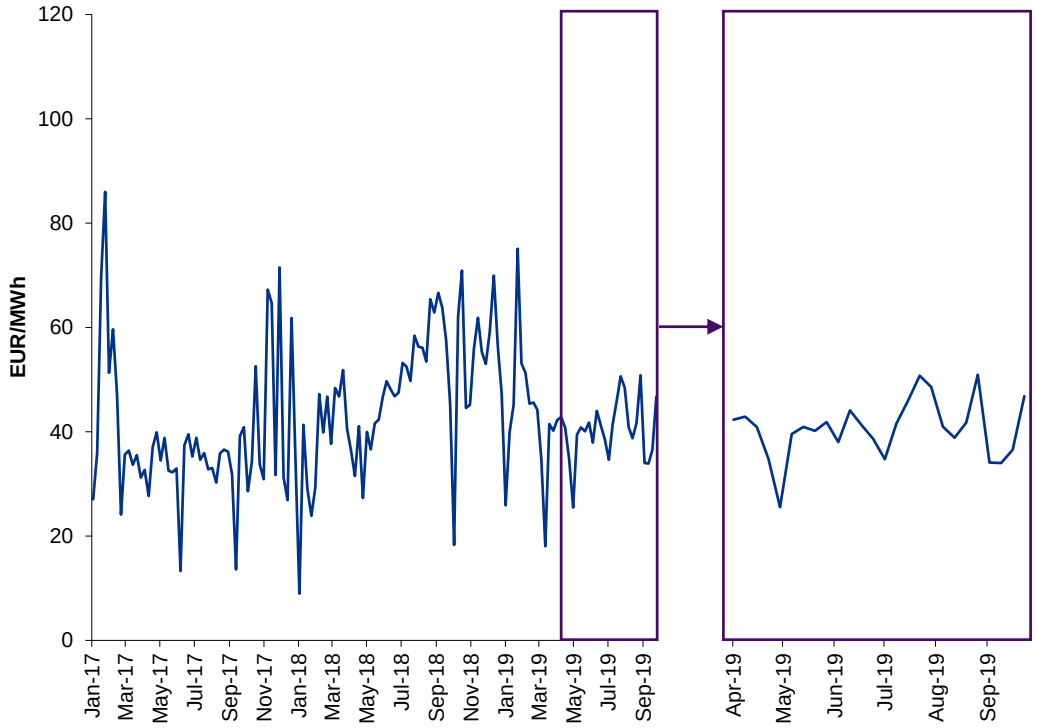
Price and margins overview

Electricity prices	Electricity prices in France, Germany, Spain and the UK remained below average in April and continued to decline till the first week of May, primarily due to mild weather conditions, high renewable output and low demand. Peak and base load prices remained fairly stable with occasional peaks observed through the second and third quarter, attributed to the rise in gas prices, rally of carbon contracts, bullish movement of coal contracts and concerns around French nuclear plants. Prices declined in the first week of September due to weaker coal, carbon and gas market accompanied by low demand.
Oil prices	Brent and WTI crude prices continued to rise until mid May, reaching nearly US$75 driven by OPEC supply cuts, decline in US oil rigs, escalating violence in Libya, fall of Venezuela's oil output and sanctions against Iran. Oil prices fell in June after President Trump threatened to impose tariffs on imports from Mexico. Prices continued to float around US$60, fueled by optimism from the new round of US-China trade war and OPEC extending its current deal and agreement between Mexico and the US. Prices fell sharply in August, reaching US$55 due to rise in US oil stock and Trump's announcement of additional tariffs on Chinese exports. Prices rose in September, triggered by the Saudi oil facility attacks, optimism around the US-China commercial negotiations, and expectations that OPEC and Saudi Arabia will continue output cuts.
Gas prices	From April to September 2019, average prices of Henry Hub declined by 18 percent, EU border declined by 38 percent and NBP declined by 44 percent, due to increase in renewable power generation, forecasts of mild weather, along with decline of spot contracts and bearish movement of coal and carbon prices. In the September beginning, the European gas prices declined by 66.4 percent y-o-y to 10 year lowest of US$3.2 per MMBTU, impacted by high levels of storage at terminals, robust supply amid low demand. The occasional peak prices were supported by a rise in oil and CO_2 prices and low wind generation. The announcement of closure of Groningen gas fields and reduction in OPAL pipeline gas flows, helped prices to recover by September end.
Coal prices	Coal prices continued to decline throughout the second and third quarter of 2019, due to high level of stocks at North western terminals, increasing fuel switching due to low gas prices, poor utility demand and low level of trade. Coal prices were fairly stable during the later part of the third quarter, supported by increased demand from Asian markets, support from the strengthened Euro against the USD and rising demand for coal fired generation due to forecast of cooler temperature and continuing French nuclear problems. The prices recovered in September as a result of rise in freight rates and gas prices.
Carbon prices	Carbon prices increased by 36 percent during April to July 2019, reaching the peak price of EUR29.76/T, due to hot weather spurring demand for allowances, as the heat wave across Europe boosted power demand for cooling. The prices declined to EUR25.53/T at the end of September. The average quarterly carbon price increased by 16 percent in 2Q19 and 6 percent in 3Q19, supported by speculative buying combined with strong compliance demand. The prices declined after August due to uncertainty around Brexit and skepticism surrounding economic slowdown in Europe, resulting in low auction activity. The prices were also negatively impacted by decline in EAU emission and waning industrial demand.
Dark/spark spreads	A comparison of clean dark spread and clean spark spread indicate that there were nearly 28 percent of working days from January to September 2019, when it was cheaper to operate gas plants compared with coal plants, due to the continued rise in price of EUAs. The falling coal prices supported the movement of clean dark spread. The CDS in France, Germany, Spain and the UK improved in September due to rise in gas prices.

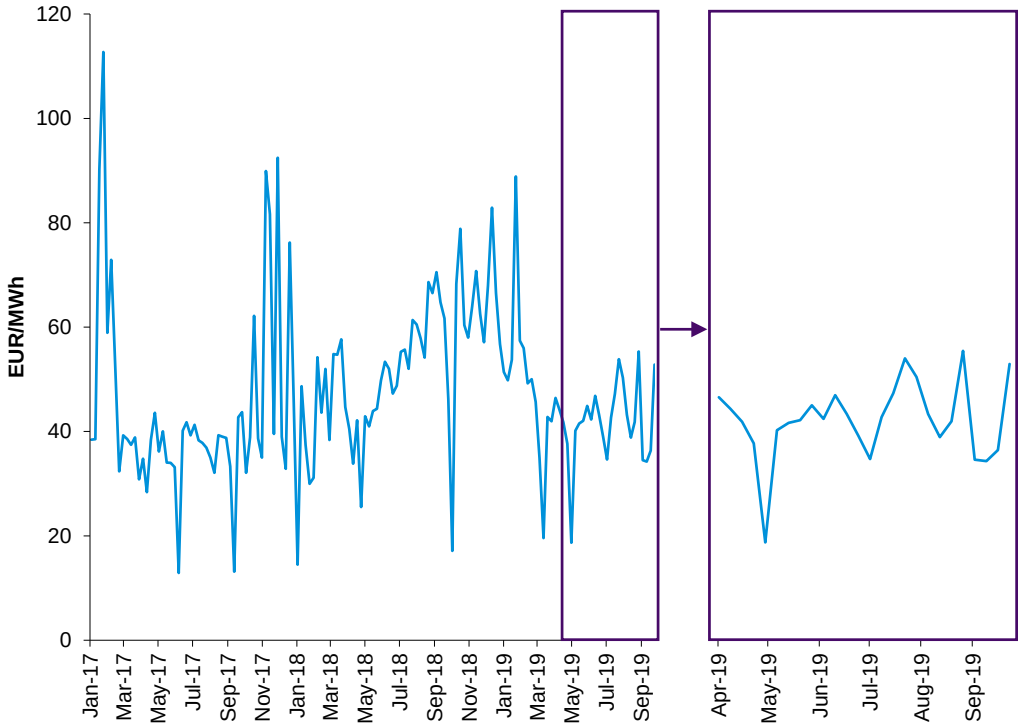
Electricity price evolution

Germany

Base load



Peak load

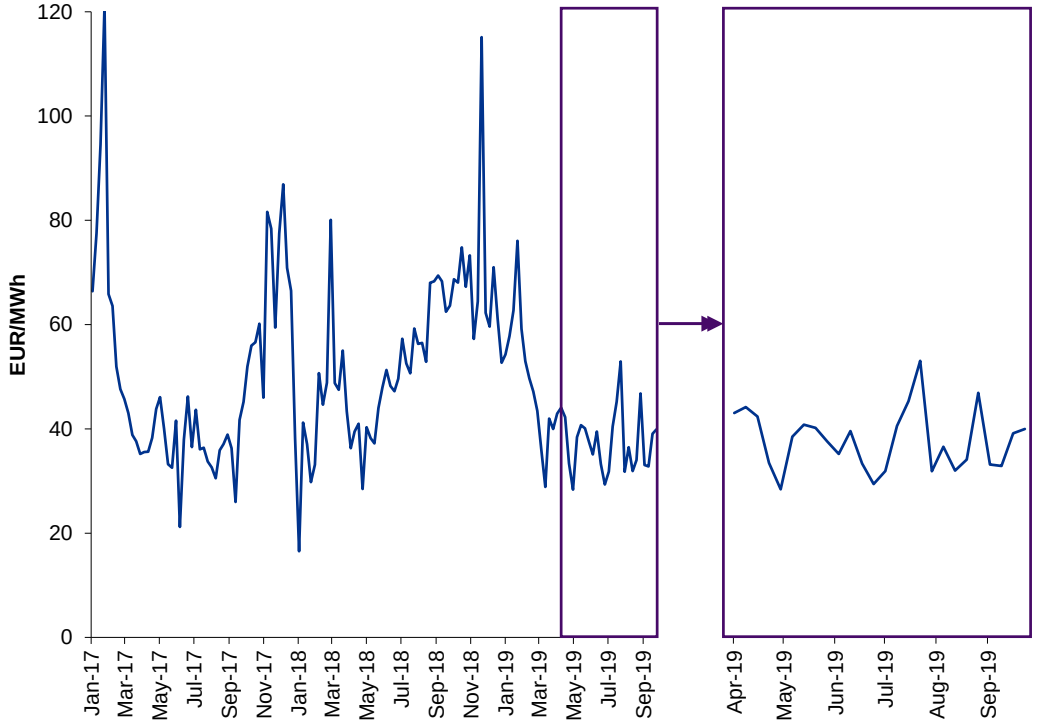


Source: Reuters, 2019

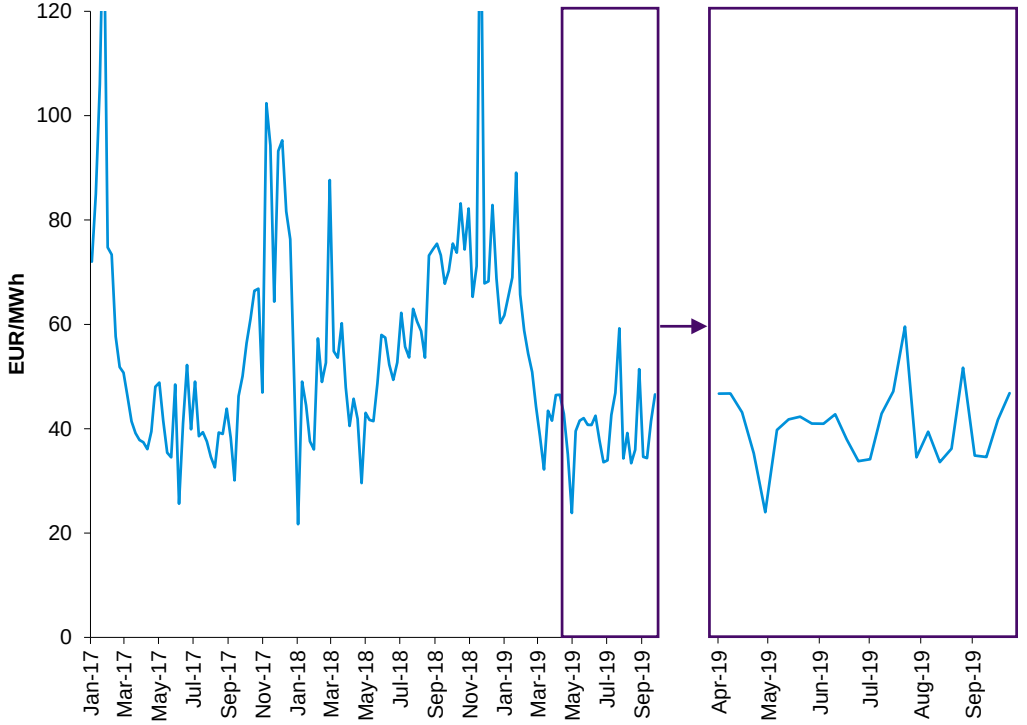
Electricity price evolution (cont.)

France

Base load



Peak load

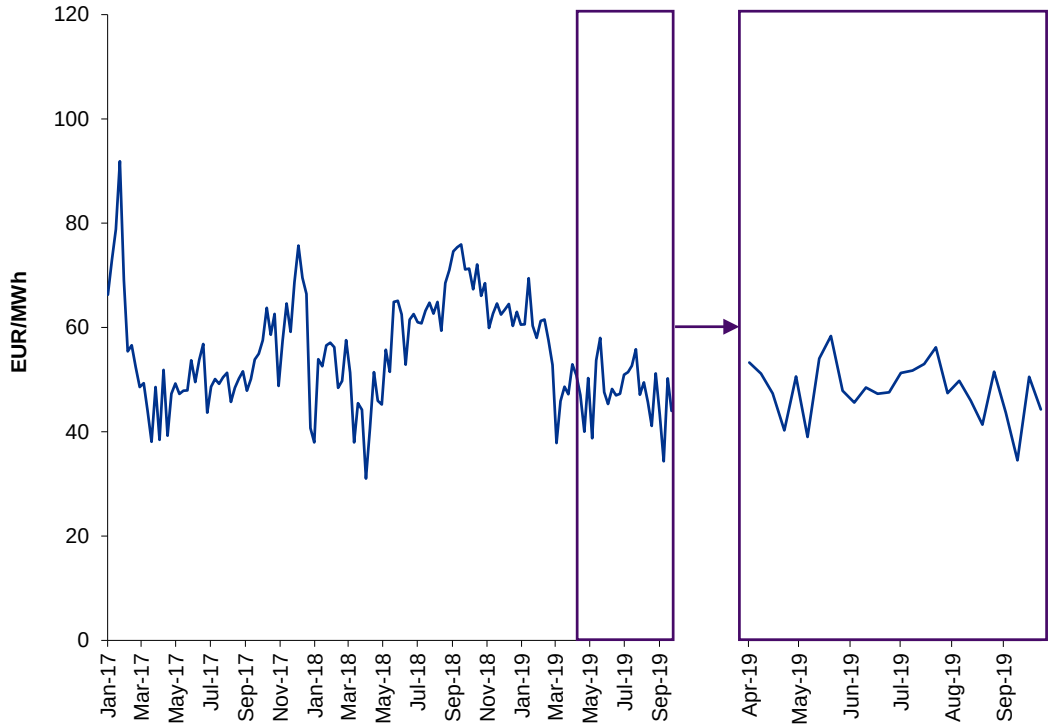


Source: Reuters, 2019

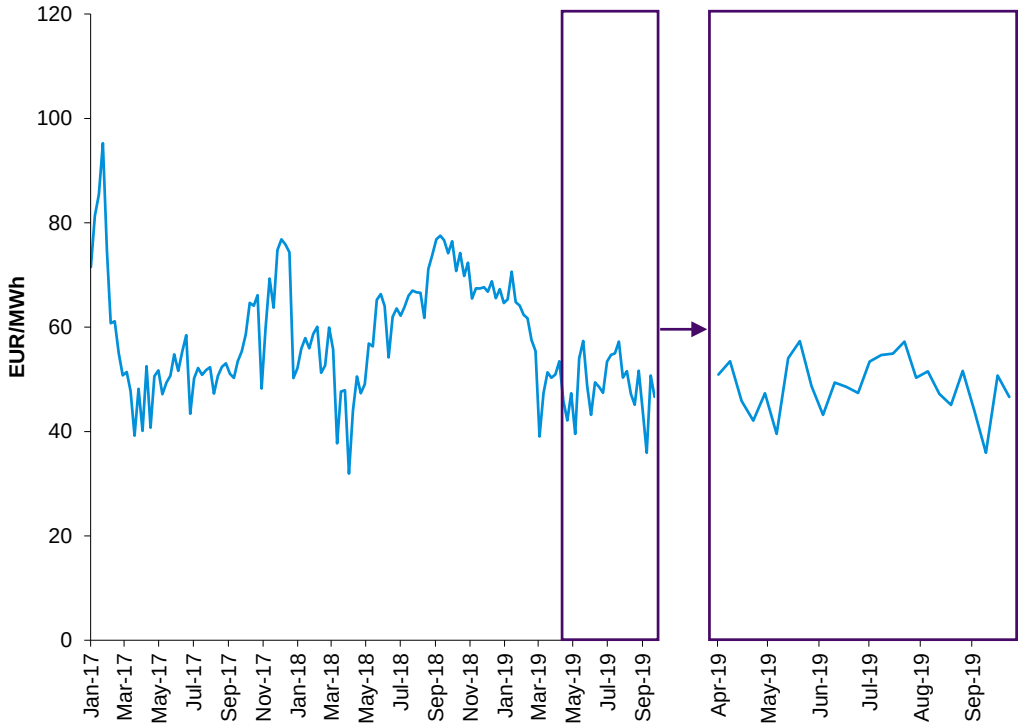
Electricity price evolution (cont.)

Spain

Base load



Peak load

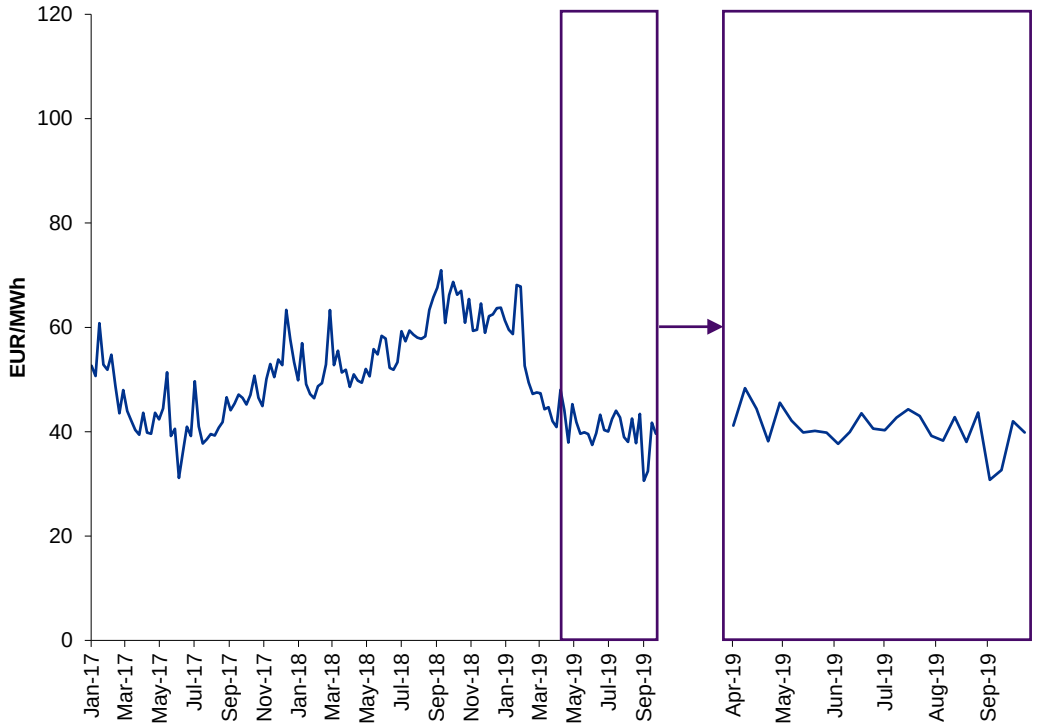


Source: Reuters, 2019

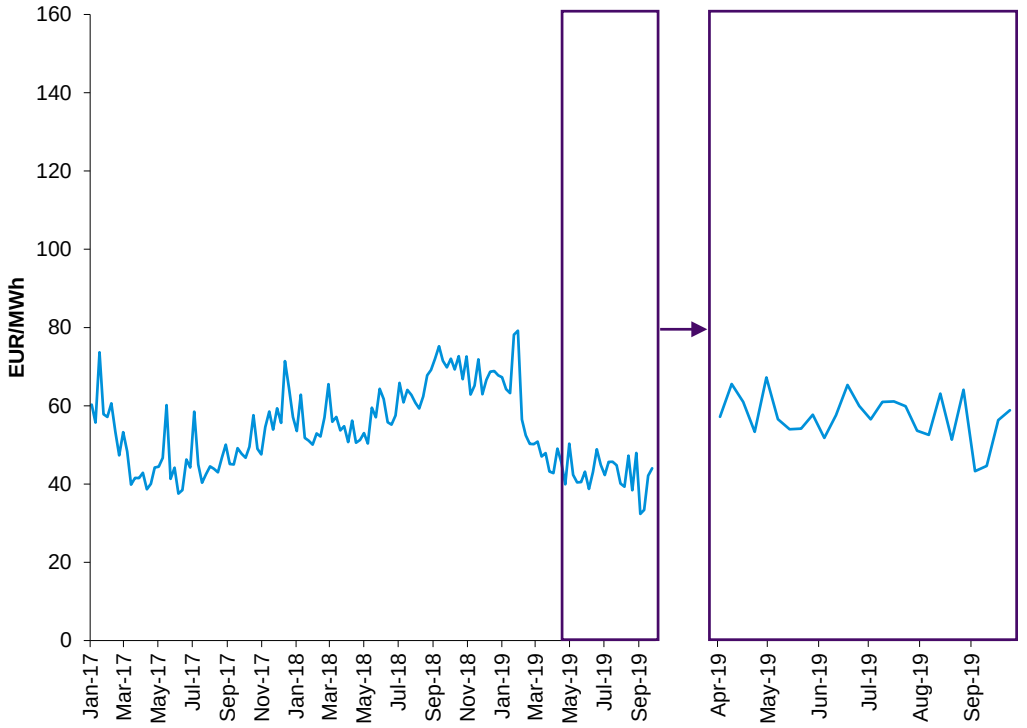
Electricity price evolution (cont.)

United Kingdom

Base load



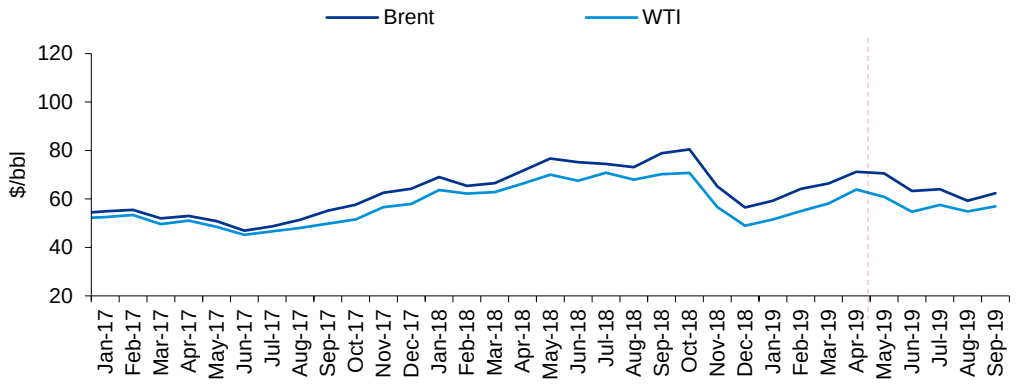
Peak load



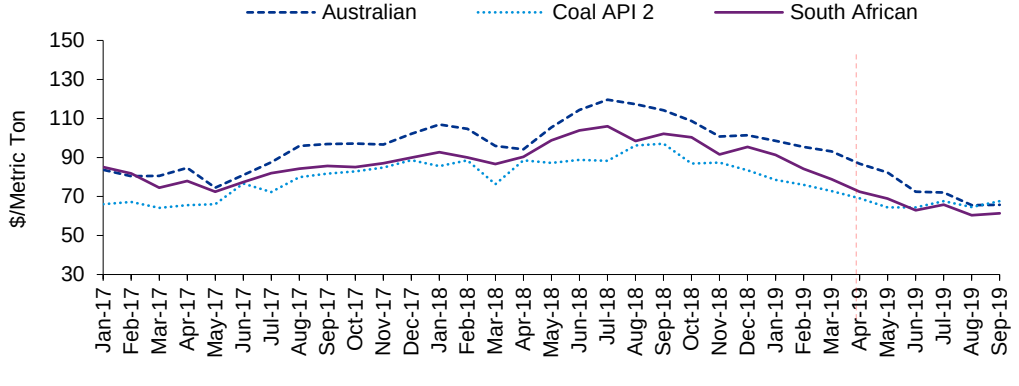
Source: Reuters, 2019

Fuel and carbon price evolution

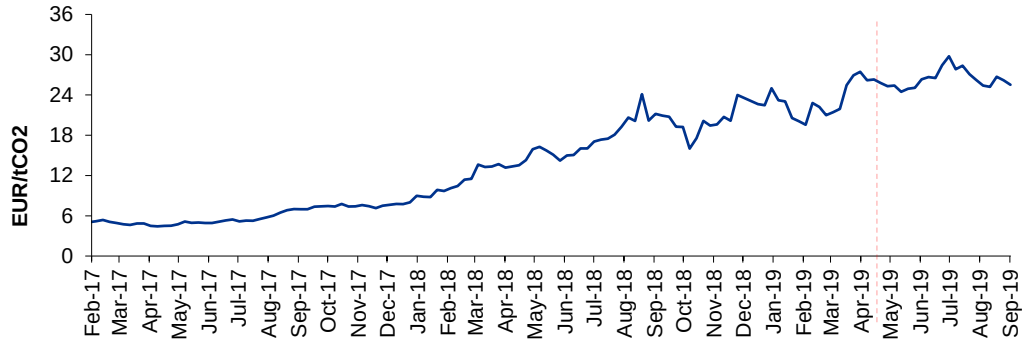
Crude oil



Coal[(a)]

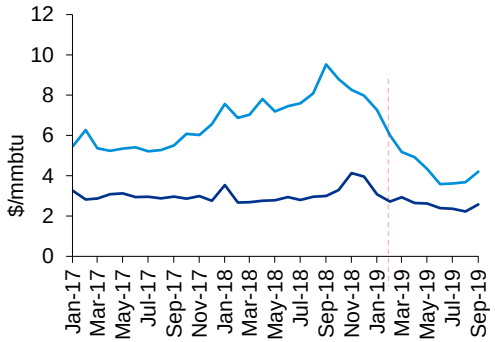


Carbon price – EU ETS

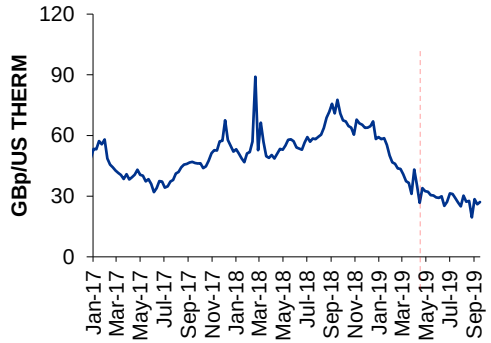


Gas prices

US (H.Hub) and EU (border)



NBP



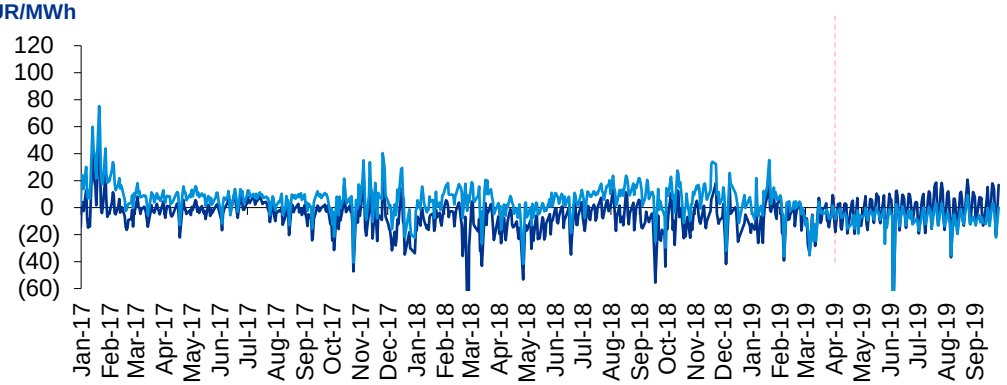
Note: (a) The World Bank has not published the Colombian coal prices since Q3 2018, — therefore the Colombian coal prices are not included in the report. Coal API 2 price assessment is the benchmark price reference for coal imported to northwest Europe (Rotterdam pricing).

Source: World Bank commodities price data (The Pink Sheet), 2 October 2019; Reuters, 2019.

Clean dark and spark spreads

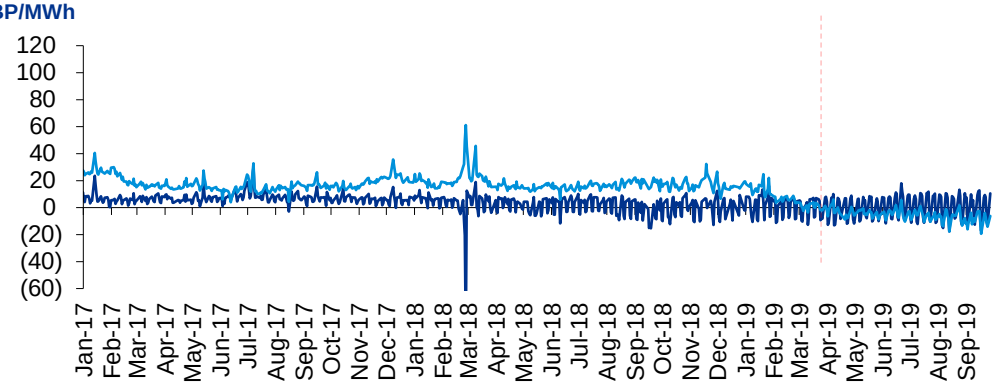
Germany

EUR/MWh



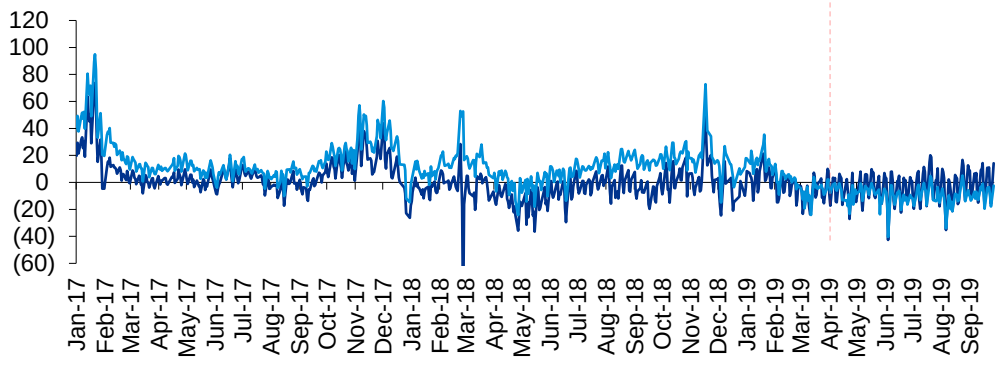
The UK

GBP/MWh



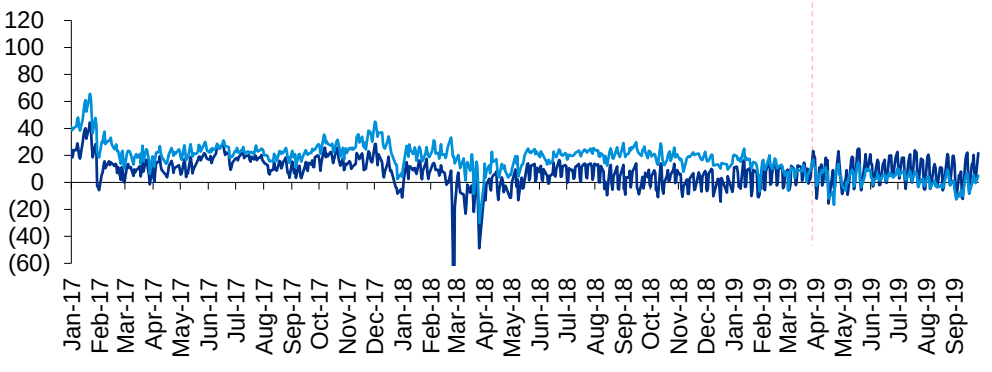
France

EUR/MWh



Spain

EUR/MWh



Clean dark spread — Clean spark spread

Source: Reuters, 2019

Regulatory and economics news overview

European Union (EU)	The EU has been witnessing a plethora of initiatives taken by its member countries to reduce emissions and promote renewable energy sources. The initiatives include reducing tariffs for lower energy consumption, investing in renewable production and setting up action plans for zero emissions. Also, countries have imposed CO_2 emissions tax on industrial companies, apart from plans to ban petrol and diésel vehicles.
UK	The UK has also undertaken a lot of initiatives to promote clean energy usage. It has proposed a plan for zero emission by 2050 along with a proposal for renationalization of energy networks. In the Cfd Round 3, the government announced record low prices, with first year delivery at GBP39.650 per MWh (2012 real) and the second year at GBP41.611 per MWh (2012 real), for 5.8W of new capacity of which 5.47GW were for offshore wind projects. There was also an announcement by Ofgem (independent energy regulator) for reducing the retail energy cap by GBP75 per year to GBP1,179, which will result in reduction in energy bills for about 15 million households who are protected by the price caps.
Germany	Germany has been providing incentives to encourage less consumption of energy and promote green energy. It has removed energy audits for firms consuming less than 500,000Kwh per year of energy, in addition to financial aid provided to regions affected by its policies to withdraw coal. The country has also enacted a new tax exemption for plants with an output of less than 2MW, which are not connected to a grid. To promote smart meter gateways, the government has certified the second producer of smart meter gateways and will make use of smart meter gateways compulsory once the third producer has been certified. The government has also adopted a block-chain strategy to promote technological investment and support the digitalization of the energy transition.
France	In a boost to renewable energy production in France, the Eurpoean Commission approved support to six offshore French wind farms, for which approvals were pending. The government has also signed an MOU with EDF (French electric utility company) for early closure of the Fessenheim nuclear plant during 1Q20 and 2Q20, owing to the ceiling on the electricity production of nuclear origin set by the law of 17 August 2015 on the energy transition for green growth.
Spain	Spain has passed a new law, to remunerate self consumers in case of electricity surplus by removing the charges associated with it. The country has also doubled the budget for incentivizing the program for efficient and sustainable mobility in Autonomous Communities. In 2019, in Spain Combined Cycle Gas Turbine became the third source of electricity in 2019, after Nuclear and Wind, supported by various measures. The REE, which is the Spanish transmission system operator, has received requests (with deposited guarantees of 150,000MW) to grant access and connection to its renewable facilities.

Regulatory and economics news overview (cont.)

Netherlands	The Dutch government has initiated steps to reduce CO_2 emissions and encourage green fuel. It plans to impose a CO_2 emissions tax on industrial companies as a part of proposed measures to meet the target to reduce greenhouse gas emissions by 49 percent by 2030 from levels the 1990 levels. — It is also the first AAA rated nation to offer investors with green bond, under which it would give preference to funds to prove their own environmentally friendly credentials. — It has taken initiatives to ban petrol or diesel vehicles in Amsterdam by 2030 and also introduced a tax on foreign waste, which accounts for 25 percent of the country's total waste. — The government announced subsidy for gas turbine project to six partners in the consortium of a project as part of Dutch hydrogen program. The country plans to phase out net metering scheme, responsible for the growth of Solar PV, by 2031. The process is expected to start by 2023. The government is halting production at Groningen, Europe's largest onshore natural gas field, by 2022, due to tremors in drilling damaged buildings leading to protests by resident and campaigners.
Portugal	The Regulatory Entity for Energy Services (ERSE) in Portugal approved a directive defining the new parameters for electric network connections, including the connection tariffs to be supported by producers and consumers. It has also approved the terms and conditions for the special regime energy auctions by the Last Resource Supplier along with tariffs for natural gas and prices to be applied during the gas year 2019–20. — The ERSE also concluded the regulatory review process for the Portuguese natural gas sector and has published three diplomas. The Secretary of State for Energy has determined a discount of 31.2 percent in tariffs, to be applied to economically vulnerable households enabling them access to natural gas networks, applicable from 1 July 2019 to 30 June 2020. The government approved the reduction of the VAT rate applicable to the fixed component of the natural gas access tariff for consumers consuming below 3.45kVA capacity allowance and 10 cubic meter consumption. It also approved the review of the legal regime, applicable to electricity generation, transport, distribution and commercialization activities apart from reviewing the extra-market measures regulatory mechanism. In a step toward climate change, the government approved the Action Plan for the Adaptation to Climate Changes, following the National Strategy for Adaptation to Climate Changes 2020.
Italy	The ARERA (The Italian Regulatory Authority for Energy, Networks and Environment), through the document 'Strategic Framework', presented the strategic objectives and the main lines of action for the period 2019–21. The ARERA also made changes to the regulation concerning the retail sales of natural gas and other gas distributed through urban networks. In June 2019, the Ministry of Economic Development approved the regulation on the remuneration scheme related to the availability of electricity production capacity. The decree 'FER', approved by the Ministry of Economic Development, has been published in the Gazzetta Ufficiale n. 186 of 9 august 2019. It deals with incentives for plants producing electricity through alternative sources. The Ministry also approved the regulation of the remuneration scheme for the availability of electricity production capacity.

Regulatory and economics news overview (cont.)

Russia and CIS	**Russia:** — The government made a decision on the price of the renewable energy development program until 2050, settling on US$11.04 billion for the 2021 prices. — To support the implementation of the target heat power market model (the size of this segment is c.US$25 billion), the Ministry of Energy of the Russian Federation developed templates to calculate the price of an 'alternative boiler' for natural gas, coal, and fuel oil. — The Board of Directors of ROSSETI (operator of energy grids) approved the concept for ROSSETI digitalization transformation plan, with total expected investments exceeding US$20 billion until 2030. **Kazakhstan:** — Kazakhstan has witnessed significant growth in the production of electricity through renewable energy. The development of new Kazakhstan Ecological Code is currently underway and KazEnergy is directly involved. The country is also expected to expand the use of gas in electricity generation. **Ukraine:** — The Ukrainian Parliament voted for amendments to the law regulating Alternative Energy sector in the first reading and in all likelihood, these amendments have passed the second reading as well (while the official confirmation is yet to be received). The law requires mandatory auctions for the solar and wind power plants starting from 01 January 2020. — According to the State Agency for Energy Efficiency and Energy Saving, during January–September 2019, more than EUR2 billion was invested in the development of over 2,500MW of new renewable energy capacities in Ukraine. **Azerbaijan:** — Azerbaijan, Russia and Iran are preparing to create an energy corridor — North-South Azerbaijan-Russia-Iran energy corridor — for which a feasibility study is currently being prepared. The country will also start to hold auctions on renewable energy sources by mid-2020. **Uzbekistan:** — To address energy transformation, the government is planning to unbundle and attract investments through Eurobonds, PPP projects, JVs and privatization. — Uzbekistan announced the winner of the first ever solar power auction in the country which opens new markets for private investment and makes progress toward the country's goal to increase use of renewable energy. This Public Private Partnership (PPP), tendered under the World Bank Group's Scaling Solar program, is expected to add 100MW of clean, renewable energy to the country's energy mix. **Georgia:** — The country is considering introduction of a new law on electricity and water. The law aims to harmonize the Georgian legislation with the EU requirements and develop competitive market in the energy sector.

Links to new regulation

UK

News

CfD Round 3 delivers record low price for offshore wind

On 20 September 2019, the UK Government announced record low prices for offshore wind auctions with the results of the CfD Round 3 securing 5.8GW of new capacity without spending from the budget of GBP65 million. Six offshore wind projects, securing 5.47GW of contracts represented 95 percent of the capacity awarded, apart from four remote islands wind and two Advanced Conversion Technology. The first delivery year (2023/24) was cleared at the lowest price of GBP39.650 per MWh (2012 real), with the second year close behind at GBP41.611 per MWh (2012 real).

The record low prices open up the possibility for offshore wind playing a bigger role in delivering net zero emissions by 2050, while the other low carbon technologies will face challenges to match the cost reductions achieved by offshore wind.

Judicial Review launched on Onshore Wind inclusion in CfD auctions

On 2 August 2019, the CfD was disrupted, after Banks Renewables applied for a judicial review citing that the CfD mechanism discriminates in favour of offshore wind at the expense of onshore wind and other renewable technologies. While the government has opted to continue with the auction, the successful developers await the outcomes of the Judicial Review before commencing with construction of their projects.

Link I
Link II

Falling wholesale costs reduce default and pre-payment price caps from October

Ofgem (independent energy regulator) announced that the retail energy price cap, introduced on 1 January 2019, would decrease from 1 October 2019 onward, with the maximum price for a typical user set to fall by GBP75 per year to GBP1,179. Analysis conducted by Ofgem suggests that customers would have to pay on average GBP75–100 more default tariff per year on their energy bills if the price cap is not changed. Ofgem uses a methodology to adjust the level of the price cap twice every year, reflecting its estimates for the costs to supply power and gas to customers over the next six-month period.

Link III

Links to new regulation (cont.)

UK

News

UK passes legislation to commit to a ‘Net Zero’ carbon economy by 2050

On 11 June 2019, then Prime Minister Theresa May announced that the UK would become the first major country to have a legally binding commitment for a ‘Net Zero’ target for carbon emissions by 2050, which is in line with the recent recommendations from the Committee on Climate Change (CCC). It will involve fundamental changes in all sectors of the UK economy, including for Power, Heat, Transport, Industry and Agriculture, as well as for all parts of society, related to lifestyle. Businesses will have a key role to play in driving the innovation in new technologies and establishing the new industries required in a zero carbon economy.

Link IV

Labour Party plans to renationalize energy networks

On 15 May 2019, the UK Labour Party published details of its plans to renationalize the energy networks. Under the plan, companies that control the UK’s GBP62 billion energy infrastructure, including all electricity and gas transmission and distribution, would be taken back into state control soon after a Labour election win. Nationalisation of the energy networks forms a central part of Labour’s plans to address climate change. The party argues that the profits generated from the infrastructure should be invested in a green economy rather than be given to shareholders in the form of dividends. Labour also argues that it would deliver better value to the public.

Link V

Links to new regulation (cont.)

Germany

News

Amendment of the *Energiedienstleistungsgesetz (EDL-G)*

In Germany, companies above a certain size are required to deduct an energy audit in order to reduce the total energy consumption. Energy audits entail a company's assessment of the total energy consumption to comply with strict regulatory requirements to reduce the energy consumption. The requirements are laid down by the *Energiedienstleistungsgesetz (EDL-G)* and the *DIN 16247-1* standard. An amendment of the German government from June 2019 stipulates that companies consuming less than 500,000kWh per year are no longer obliged to deduct energy audits. It also aims to improve the quality of energy audits by introducing obligatory trainings for auditors. It is expected to be implemented from October 2019.

Link I

Structural policies for the regions affected by the withdrawal of coal

On the basis of the report published byWachstum, Strukturwandel und Beschäftigung, the German government adopted a bill on 28 August 2019 to implement the commission's recommendations for structural policies to support the regions affected by the withdrawal of coal. By providing financial aid, it intends to transform these regions into energy regions of the future.

Link II

Amendment of the *Stromsteuergesetz (StromStG)*

On 22 June 2019, the German government passed resolutions on amendments concerning the taxation of decentralized energy generation of the Stromsteuergesetz (StromStG). Exonerations apply to plants with an output of less than 2MW that are not connected to the grid. The amendments also entail adjustments of the electricity regulation and the energy law.

Link III

Links to new regulation (cont.)

Germany

News

German government passed block chain strategy

On 18 September 2019, the German government adopted their blockchain strategy that is divided into five action ponints that cover various industries and business processes. According to the Economic Affairs Minister, Peter Altmeier, the energy industry is of special interest in this plan and it is crucial to initiate pilot projects using blockchain technology and simultaneously support the digitalization of the energy transition.

Link IV

Approval of the second Smart Meter Gateway by the Federal Office for Information Security

On 30 September 2019, the Federal Office for Information Security certified the second producer of smart meter gateway in a step toward the obligatory use of smart meter gateways. Since December 2018, several metering point operators have already begun installing smart metering systems at their customers. However, the legal obligation to install smart meter gateways only applies if three devices from independent manufacturers have been certified by the BSI and the technical option for installing intelligent measuring systems has been formally established by the BSI. The BSI is confident that the requirements of other manufacturers will be successfully implemented and that the mandatory rollout will start in 2019.

Link V

Links to new regulation (cont.)

France

News

Closing Fessenheim nuclear plant

In September 2019, an MOU was signed between EDF and the French State for early closure of Fessenheim nuclear plant during 1Q20 and 2Q20, including financial compensation for EDF.

Link I

EU Commission agreed to provide support six offshore French wind farms

In July 2019, the European Commission approved support for six offshore French wind farms for which administrative approval was pending since 2012 and 2014. Power generation from these farms, which have an installed capacity of 450–498MW, is expected to start from 2022.

Link II

Engie – New regulated gas tarrifs

As on 1 October 2019, the regulated gas tariffs declined by 2.4 percent for Engie compared with the current scale applicable since 1 September 2019. This change resulted from the application of the tariff formula defined in the order dated 27 June 2019 relating to regulated natural gas tariffs of Engie, approved by the French Energy Regulatory Commission (CRE) .

Link III

Links to new regulation (cont.)

Spain

News
On 5 April 2019, Royal Decree 244/2019 was approved, which regulates the administrative, technical and economic conditions of self electricity consumption. The new regulation allows consumers to be remunerated in case of self consumption with surpluses.
Link I
On 15 February 2019, Royal Decree 72/2019 established an incentive programme for efficient and sustainable mobility, budgeting GBP45 million (which is double the amount compared with the previous incentive plans) to Autonomous Communities. Autonomous Communities were formed during 2Q19 in the regional regulation in order to allocate the mentioned subsidies.
Link II
As per the 2019 generation data, Combined Cycle Gas Turbine (CCGT) has became the third source of electricity in 2019, after nuclear and wind. This is owing to the increasing price of CO_2 emission allowances, the elimination of the green cent tax for CCGT and low prices of natural gas.
Link III
By April 2019, REE, which is the Spanish transmission system operator, has received requests of 150,000MW for access and connection to its renewable facilities with deposited guarantees. The National Commission of Markets and Competition (CNMC) alerted that the huge amount requested, despite the increased guarantees, could also imply that agents were trying to obtain benefits from the permits and not willing to build new facilities.
Link IV

Links to new regulation (cont.)

Netherlands

News
The Dutch government plans to impose a CO2 emissions tax on industrial companies as a part of proposed measures to meet a target to cut greenhouse gas emissions by 49 percent by 2030 from the 1990s. The companies will have to pay EUR30 (US$34) per ton of CO2 emitted starting 2021.
Link I
The Netherlands became the first AAA-rated sovereign to offer investors a green bond, under which it would give preference to funds that prove their own credentials as environmentally friendly. The government said that it aims to raise up to EUR6 billion (GBP5.2 billion) from the issue. However, according to bankers, order books on the 20-year euro-denominated bond had already climbed past EUR20 billion.
Link II
The Dutch government has confirmed that it will maintain its net-metering scheme in its current form until 2023, post which it plans to gradually phase it out by 2031. Net metering has been the main reason for steady growth of PV in the country in the recent years, and was also the key market driver in the earliest stages of its solar development.
Link III
The Dutch government announced a subsidy for gas turbine project to six partners including Ansaldo Thomassen, Delft University of Technology, OPRA Turbines, Vattenfall, Nouryon and EMMTEC for the project ‘High Hydrogen Gas Turbine Retrofit to Eliminate Carbon Emissions.’ The subsidy, valued at US$565.58,000 is awarded as a part of the Dutch hydrogen programme within the top sector energy area of the Dutch Ministry of Economic Affairs and Climate Policy.
Link IV

Links to new regulation (cont.)

Netherlands

News
Legislation to introduce a tax on foreign waste was among a host of measures put before the parliament during the Prinsjesdag (Prince's Day) opening of the Dutch Senate and House of Representatives. Documents published on the government's tax proposals, indicate that about 1.9 million tons of 'foreign' waste is incinerated in Holland's energy from waste facilities, which accounts for 25 percent of the country's overall capacity, including a large proportion from the UK.
Link V
The Dutch government said that the Netherlands will halt production at Groningen, Europe's largest onshore natural gas field, by 2022, eight years earlier than initially planned. Groningen produced nearly 54 billion cubic meters (bcm) of gas in 2013, before tremors due to drilling damaged buildings prompted a series of lowered caps on output along with protests by residents and campaigners.
Link VI
Cars and motorbikes running on petrol or diesel will be banned from driving in Amsterdam from 2030 onward. The city's council plans to phase in the change as part of a drive to clean up air pollution, which the authorities blame for shortening the life expectancy of Amsterdammers by a year. From next year, diesel cars that are 15 years or older will be banned from entering the A10 ring road around the Dutch capital.
Link VII

Links to new regulation (cont.)

Portugal

News
Regulatory Entity for Energy Services (ERSE) approved a directive defining the new parameters for electric network connections, including the connection tariffs to be supported by producers and consumers.
Link I
The social natural gas tariff is an instrument of social justice and policy, aimed at protecting economically vulnerable households by providing guaranteed access to essential services. The Secretary of State for Energy has determined a discount of 31.2 percent in tariffs, which will be available to the economically vulnerable households enabling them access to natural gas networks, applicable from 1 July 2019 to 30 June 2020.
Link II
Regulatory Entity for Energy Services (ERSE) approved the terms and conditions for the special regime energy auctions by the Last Resource Supplier (CUR).
Link III
In April 2019, the Regulatory Entity for Energy Services (ERSE) concluded the regulatory review process for the Portuguese Natural Gas sector, which resulted in the publication of three diplomas for the sector — Tariff Regulation, Regulation of access to the Natural Gas network, Infrastructures and Interconnections, and Regulation for Commercial Relations.
Link IV Link V Link VI
The Portuguese government approved the reduction in the VAT rate applicable to the fixed component of the natural gas access tariff for consumers consuming below 3.45kVA capacity allowance and 10 cubic meter consumption.
Link VII

Links to new regulation (cont.)

Portugal

News
The Regulatory Entity for Energy Services (ERSE) has established and approved the natural gas tariffs and prices to be applied during the gas year 2019–20 and the parameters for the period 2020–23 period.
Link VIII
The Portuguese government approved the review of the legal regime applicable to electricity generation, transport, distribution and commercialization activities as well as the electricity markets organization, to improve consistency and increase flexibility on system access.
Link IX
The Portuguese government approved the Action Plan for the Adaptation to Climate Changes following the National Strategy for Adaptation to Climate Changes 2020 (ENAAC 2020) approved in 2015.
Link X
The Portuguese government reviewed the extra-market measures regulatory mechanism which is aimed at maintaining balanced competition across the Portuguese wholesale electricity market in the framework of the European Union, such as establishing a 'payment on account' mechanism and introducing the possibility of adjustment of the extra-market measures as per the electricity generation technology.
Link XI

Links to new regulation (cont.)

Italy

News
The ARERA (The Italian Regulatory Authority for Energy, Networks and Environment), through the document ‘Strategic Framework’, presented the strategic objectives and the main lines of action for the period 2019–21 period, in light of the evolution of the national and European sectoral reference context. The strategic vision is inspired by the need to guarantee accessible, efficient and distributed energy and environmental services to all citizens.
Link I
The decree ‘FER’, approved by the Ministry of Economic Development, has been published in the Gazzetta Ufficiale n. 186 of 9 August 2019. It deals with incentives for plants producing electricity by onshore, photovoltaic, hydroelectric and waste gas systems through introduction of method of competitive auctions for the allocation of incentives.
Link II
In June 2019, the Ministry of Economic Development approved the regulation on the remuneration scheme related to the availability of electricity production capacity. The regulation has been prearranged by Terna, the Italian TSO, after consultations with several stakeholders in the energy market.
Link III
With the Delibera 366/2019/R/Gas, the ARERA made changes to the regulation concerning the retail sales of natural gas and other gas distributed through urban networks (TIVG), by reformulating the regulatory components related to the costs of natural gas procurement in the wholesale markets (CMEMt) and the transport service (QTi.t) for the protected market. These changes are expected to be effective starting 2020.
Link IV

Links to new regulation (cont.)

Russia & the CIS

News
Russia: The government made a decision on the price of the renewable energy development program until 2050, settling on US$11.04 billion in 2021 prices. Renewable energy sources in Russia are being built under capacity supply agreements, under which, about 5.5GW of green capacity is expected to be built by 2024. While the government is currently discussing the extension of the program until 2035 but the industrial energy consumers are against it, as they are obliged to not only pay capital costs for the green generation, but also guarantee income for generating companies. The authorities are expected to earmark US$3.38 billion for the construction of wind farms, US$2.25 billion for solar energy and US$457 million for small hydropower plants (up to 50MW) until 2035. While the capacities of the new stations are not indicated, it would be possible to build about 3GW of wind power plants, 2.2GW of solar power plants, and 170MW of small hydroelectric power stations.
Link I
Russia: To support the implementation of the target heat power market model (the size of this segment is c.US$25 billion), the Ministry of Energy of the Russian Federation developed templates to calculate the price of an 'alternative boiler' for natural gas, coal, and fuel oil. Regional tariff regulating authorities may use the templates to calculate the heat price limit in various heat supply price zones. The new heat power market model legally came into effect in Russia in the beginning of 2018. With the new model, the heat power price for consumers is expected to depend on free pricing, subject to a certain limit instead of being determined using the cost plus method (that regional regulators set annually based on the expenses the company declared).
Link II
Russia: The Board of Directors of ROSSETI (operator of energy grids) approved the concept for ROSSETI digitalization transformation plan, with total expected investments exceeding US$20 billion until 2030. This concept is a part of the program 'Digital Russia' announced earlier by the Government of Russia.
Link III
Kazakhstan: Kazakhstan is expected to expand the use of gas in electricity generation. Coal was the main fuel of Kazakhstan Energy sector, formed in the 1970s. Expansion of gas use in electric energy is important for Kazakhstan to implement its international responsibilities in CO_2 emissions reduction. Increased gas use will also allow the country to meet the growing demand for maneuverable energy via necessity of regulation of frequency and volume growth of renewable energy.
Link I

Links to new regulation (cont.)

Russia & the CIS

News
Kazakhstan: Significant growth in the production of electricity via renewable energy has been observed in Kazakhstan. The work on development of new Kazakhstan Ecological Code is currently underway and KazEnergy is directly involved in the work. The main principles of the new code are: the principle polluters pay, switch of the companies to complex environmental permitting, introduction of standards of best available technology (BAT) and tax incentives for companies to encourage introduction of BAT. Noting the significance of the Concept for the Development of the Fuel and Energy Sector until 2030, approved in June 2014, KazEnergy pointed that a new market structure has been formed on the electricity production market and since 2019 energy-producing organizations have been operating according to the rules of the electricity and capacity markets.
Link II
Ukraine: The Ukrainian Parliament voted for the amendments to the Law regulating alternative energy sector in the first reading and in all likelyhood these amendments have passed the second reading as well (while the official confirmation is yet to be received). The law requires mandatory auctions for the solar and wind power plants starting from 01 January 2020 that will be conducted at least two times per annum with the deadlines on 1 April and 1 October. The draft law suggests that the tariffs for solar PP may fall gradually from EUR163 per MW for the regulatory period between 01 January 2017 and 31 December 2019 to EUR105,81 for the period 01 January 2025 – 31 December 2029 period for the SPP exempted from auctions.
Link I, KPMG Analysis
Ukraine: According to the State Agency for Energy Efficiency and Energy Saving, during January–September 2019, over EUR2 billion was invested in the development of over 2,500MW of new renewable energy capacities in Ukraine. In particular, the new facilities installed were: solar power plants of over 2,000MW capacity, about 400MW of wind farms, about 120MW of solar power plants for households, 24MW of biogas plants, 13MW of small hydropower facilities and 4MW of biomass facilities. As reported by Ukrinform, since the beginning of 2019, the share of renewable energy in the total Ukrainian electricity production grew 1.7 times and amounted to 3.3 percent in the second quarter.
Link II

Links to new regulation (cont.)

Russia & the CIS

News
Uzbekistan: As a part of the transformation process in the Energy sector of Uzbekistan, the government has stated that Uzbekenergo and Uzbekneftegaz need to go through deep corporate reforms including unbundling and attracting investments either through Eurobonds, Public Private Partnership (PPP) projects and JVs or through subsequent privatization.
Link I
Uzbekistan: The European Bank for Reconstruction and Development (EBRD) launched its Green Energy Financing Facility (GEFF) in Uzbekistan in mid-September. This facility channels EBRD funding to local SMEs interested in implementing energy efficiency improvements in their operations through partner financial institutions. Ipak Yuli was the first commercial bank in Uzbekistan that joined GEFF. EBRD will promote renewable energy (solar and wind) separately through large scale projects benefiting from open international tenders. There are three main areas of EBRD activity in Uzbekistan: the enhancement of competitiveness by strengthening the role of the private sector, the promotion of green energy and efficient use of resources, and the support of increased regional and international cooperation and integration.
Link II
Uzbekistan: Uzbekistan announced the winner of the first ever Solar Power Auction in the country. This opens new markets for private investment and marks progress toward the country's goal to increase the use of renewable energy. This PPP, tendered under the World Bank Group's Scaling Solar program, is expected to add 100MW of clean, renewable energy to the country's energy mix. Masdar Clean Energy of the UAE was awarded the project with a bid to supply solar power at just US$0.027 per Kwh, one of the lowest tariffs seen in emerging markets. The project is part of an effort to develop up to 5GW of solar power by 2030 to diversify the country's energy mix. Deputy Prime Minister and Minister of Finance, also announced that given the successful outcome of the first tender, the Government of Uzbekistan would soon be launching another tender for an additional PPP for 400MW of solar power, followed by one more PPP for 500MW. The program is being implemented with the support of the Austrian Ministry of Finance and Switzerland's State Secretariat for Economic Affairs (SECO) as well as the Government of the Netherlands.
Link III

Links to new regulation (cont.)

Russia & the CIS

News

Azerbaijan: Azerbaijan, Russia and Iran are preparing to create an energy corridor — North-South Azerbaijan-Russia-Iran energy corridor — for which a feasibility study is currently being prepared. The energy systems of Azerbaijan and Russia operate in parallel mode and the exchange of electricity is underway. In 2018, more than 121 million Kilowatt Hour (Kwh) of electricity was exported from Azerbaijan to Russia, and over 76 million Kwh of electricity was imported from Russia.

Link I

Azerbaijan: Azerbaijan will start to hold auctions on renewable energy sources by mid-2020. According to Azerbaijani Minister of Energy, Azerbaijan is currently working on the development of renewable energy sources.

Link II

Georgia: The country is considering introduction of a new law on electricity and water. The law aims to harmonize the Georgian legislation with the EU requirements and develop competitive market in the Energy sector.

Key changes that are planned in the future are related to:

— Increasing the authority of the Georgian National Energy and Water Supply Regulatory Commission.

— Separation of transmission or distribution activity from generation and supply activities, which will entail the reorganization of the existing license holder companies in Georgia.

— Creation of trader and supplier status on the market. The trader will be the party who will be authorized to resell the energy on the market, while the supplier is the party who will provide the energy to the end user.

— Introduction of the 'last alternative' supplier, which will provide electricity to the consumer who experiences power shortage due to the supplier termination or some other circumstances.

Link I, Link II

KPMG Analysis

Capital markets overview

Eurostoxx Utilities	The Eurostoxx Utilities index increased by an average of 4.3 percent q-o-q in 3Q19. The index cumulated 16.4 percent gains in the last 12 months.
Best performance	Centrica plc (*GBP), Iberdrola SA, Enel SpA, EDP Renováveis, Snam SpA, Naturgy Energy Group, S.A, RWE AG registered the best performance in 2Q19, in terms of share price behavior. During this period, 10 of the top 18 European players experienced positive price evolution. Enel SpA, RWE AG, Iberdrola SA, Fortum Oyj, EDP Renováveis, ENGIE SA (GDF Suez S.A.) registered the best performance in 3Q19, in terms of share price behavior. During this period, 12 of the top 18 European players experienced positive price evolution.
Valutation levels	Valuation levels in the sector averaged at 9.3 EV/EBITDA in 3Q19, 8.14 percent above the previous quarter (8.6 EV/EBITDA in 2Q19). Wide differences persist in EBITDA multiples, with RWE Aktiengesellschaft (XTRA:RWE), SSE plc (LSE:SSE), Energias de Portugal S.A. (ENXTLS:EDP), Snam S.p.A. (BIT:SRG), Fortum Oyj (HLSE:FORTUM), EDP Renováveis S.A. (ENXTLS:EDPR), National Grid plc (LSE:NG.), Iberdrola S.A. (BME:IBE), Naturgy Energy Group S.A. (BME:NTGY), trading at 11x TEV/EBITDA and above (as of 30 September 2019).
Net debt ratios	Net debt ratios for 3Q19 averaged at 3.5x EBITDA, 9.3 percent above the figure registered in 1Q19.
Credit ratings	In May 2019, ENGIE SA (ENXTPA:ENGI) observed a downgrade in its Moody's rating to 'A3'.

Share price evolution: overview (2Q19)

Company	1Q17	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	Q4 2018	Q1 2019	Q2 2019	Last quarter 2Q19/ 1Q19	Last year 2Q19/ 2Q18
Centrica plc (*GBP)	2.26	2.04	1.98	1.59	1.37	1.48	1.50	1.43	1.30	1.48	**14.38%**	**0.10%**
Iberdrola SA	6.17	6.89	6.81	6.62	6.25	6.39	6.53	6.55	7.31	8.27	**13.11%**	**29.39%**
Enel SpA	4.10	4.62	5.00	5.29	4.96	4.96	4.59	4.61	5.31	5.75	**8.24%**	**15.82%**
EDP Renováveis	6.13	6.98	6.92	6.92	7.19	8.14	8.74	7.89	8.15	8.81	**8.11%**	**8.28%**
Snam SpA	3.81	4.11	4.03	4.23	3.81	3.72	3.67	3.79	4.24	4.58	**8.10%**	**23.06%**
Naturgy Energy Group, S.A	18.32	21.17	20.00	18.63	19.17	21.14	23.31	22.53	23.86	25.58	**7.23%**	**20.99%**
RWE AG	13.28	17.01	19.26	19.98	17.44	20.00	21.55	18.61	21.56	22.83	**5.89%**	**14.14%**
EDP	2.84	3.13	3.12	2.97	2.87	3.28	3.39	3.09	3.21	3.37	**4.93%**	**2.64%**
Endesa SA	20.04	21.85	20.17	18.92	17.69	19.13	19.44	19.48	21.76	22.69	**4.29%**	**18.66%**
E.ON SE	7.14	7.74	9.01	9.79	8.67	9.13	9.35	8.78	9.52	9.66	**1.51%**	**5.82%**
Enagás SA	23.43	25.37	24.14	24.19	22.05	23.80	23.99	23.91	25.28	25.11	**(0.67%)**	**5.52%**
National Grid plc (*GBP)	9.63	10.74	9.52	8.98	7.89	8.37	8.16	8.19	8.37	8.26	**(1.32%)**	**(1.25%)**
CEZ as (*CZK)	435.62	437.61	413.66	477.50	510.22	549.44	566.89	549.60	548.46	536.11	**(2.25%)**	**-2.43%)**
REE1	17.21	19.17	18.47	18.39	16.84	17.13	18.10	18.95	19.46	19.01	**(2.30%)**	**11.03%**
Fortum Oyj	14.59	13.84	14.88	17.57	17.72	19.44	21.59	19.33	19.56	18.99	**(2.94%)**	**(2.33%)**
ENGIE SA (GDF Suez S.A.)	11.88	13.48	13.93	14.53	13.52	13.95	13.06	12.24	13.58	13.16	**(3.09%)**	**(5.65%)**
SSE Plc (*GBP)	15.19	14.71	14.27	13.54	12.55	13.56	12.64	11.17	11.74	11.14	**(5.10%)**	**(17.84%)**
EDF	8.85	8.86	9.25	10.93	10.79	11.65	13.49	16.59	13.47	11.65	**(13.51%)**	**0.00%**
Eurostoxx Utilities	244.04	273.03	282.12	291.95	272.82	283.24	282.83	276.10	300.77	315.73	**4.98%**	**11.47%**

Source: S&P Capital IQ, 2019

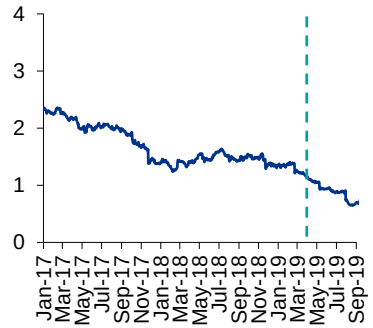
Share price evolution: overview (3Q19)

Company	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Last quarter 3Q19/ 2Q19	Last year 3Q19/ Q3 2018
Enel SpA	4.62	5.00	5.29	4.96	4.96	4.59	4.61	5.31	5.75	6.40	**11.41%**	**39.60%**
RWE AG	17.01	19.26	19.98	17.44	20.00	21.55	18.61	21.56	22.83	25.34	**10.99%**	**17.58%**
Iberdrola SA	6.89	6.81	6.62	6.25	6.39	6.53	6.55	7.31	8.27	8.98	**8.64%**	**37.59%**
Fortum Oyj	13.84	14.88	17.57	17.72	19.44	21.59	19.33	19.56	18.99	20.59	**8.47%**	**(4.64%)**
EDP Renováveis	6.98	6.92	6.92	7.19	8.14	8.74	7.89	8.15	8.81	9.53	**8.17%**	**9.00%**
ENGIE SA (GDF Suez S.A.)	13.48	13.93	14.53	13.52	13.95	13.06	12.24	13.58	13.16	13.78	**4.72%**	**5.51%**
SSE Plc (*GBP)	14.71	14.27	13.54	12.55	13.56	12.64	11.17	11.74	11.14	11.44	**2.70%**	**(9.52%)**
National Grid plc (*GBP)	10.74	9.52	8.98	7.89	8.37	8.16	8.19	8.37	8.26	8.48	**2.61%**	**3.84%**
Endesa SA	21.85	20.17	18.92	17.69	19.13	19.44	19.48	21.76	22.69	23.10	**1.81%**	**18.88%**
Centrica plc (*GBP)	2.04	1.98	1.59	1.37	1.48	1.50	1.43	1.30	1.48	1.50	**1.06%**	**(0.05%)**
EDP	3.13	3.12	2.97	2.87	3.28	3.39	3.09	3.21	3.37	3.40	**1.01%**	**0.37%**
Snam SpA	4.11	4.03	4.23	3.81	3.72	3.67	3.79	4.24	4.58	4.53	**(1.18%)**	**23.24%**
CEZ as (*CZK)	437.61	413.66	477.50	510.22	549.44	566.89	549.60	548.46	536.11	519.64	**(3.07%)**	**(8.34%)**
REE1	19.17	18.47	18.39	16.84	17.13	18.10	18.95	19.46	19.01	17.83	**(6.21%)**	**(1.49%)**
EDF	8.86	9.25	10.93	10.79	11.65	13.49	16.59	13.47	11.65	10.80	**(7.31%)**	**(19.92%)**
E.ON SE	7.74	9.01	9.79	8.67	9.13	9.35	8.78	9.52	9.66	8.92	**(7.65%)**	**(4.52%)**
Naturgy Energy Group, S.A	21.17	20.00	18.63	19.17	21.14	23.31	22.53	23.86	25.58	23.43	**(8.40%)**	**0.54%**
Enagás SA	25.37	24.14	24.19	22.05	23.80	23.99	23.91	25.28	25.11	20.13	**(19.85%)**	**(16.10%)**
Eurostoxx Utilities	273.03	282.12	291.95	272.82	283.24	282.83	276.10	300.77	315.73	329.24	**4.28%**	**16.41%**

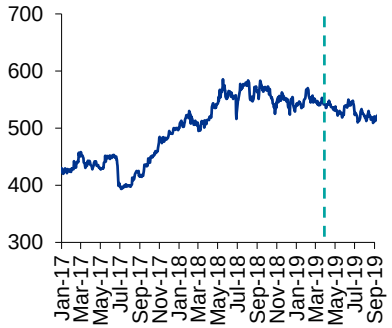
Source: S&P Capital IQ, 2019

Share price evolution: individual stocks

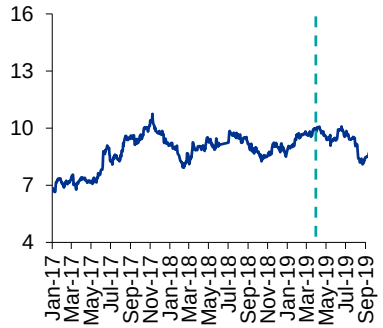
Centrica PLC (*GBP)



CEZ a.s (*CZK)



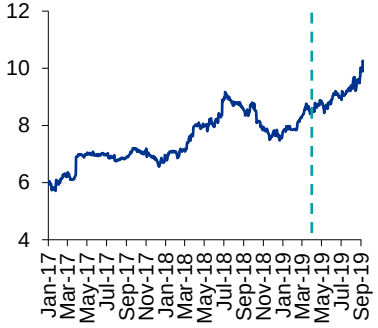
E.ON



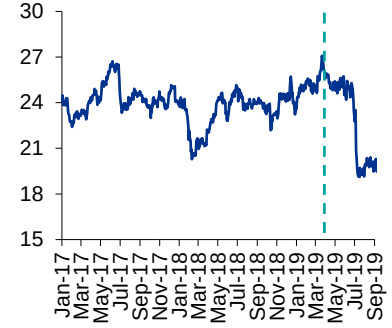
EDP

EDF

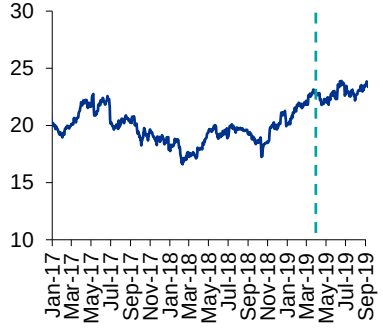
EDP Renováveis



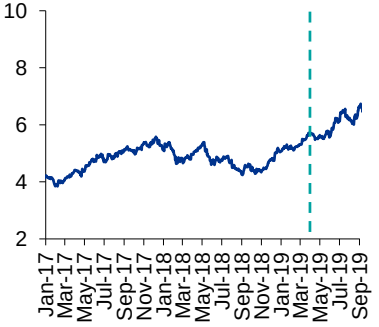
Enagás S.A.



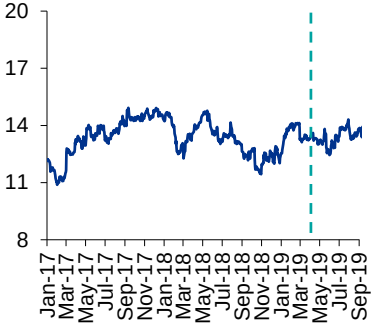
Endesa S.A.



Enel SpA



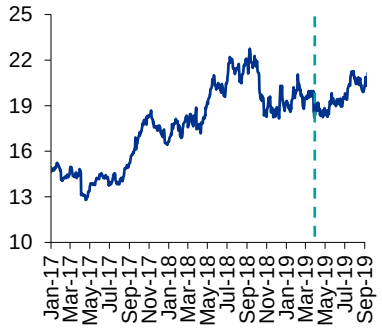
Engie S.A.



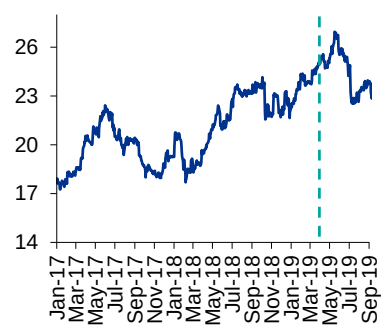
Source: S&P Capital IQ, 2019.

Share price evolution: Individual stocks (cont.)

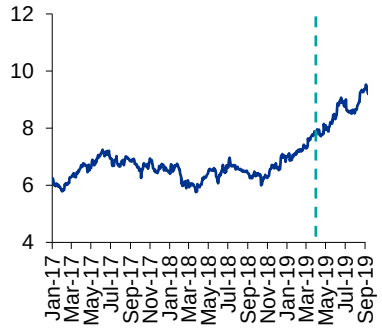
Fortum Oyj



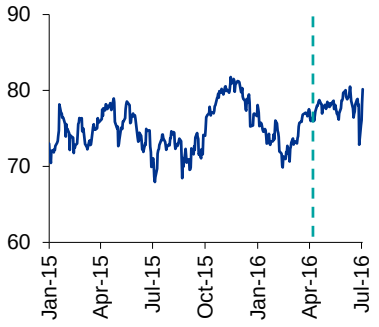
Naturgy Energy Group, S.A



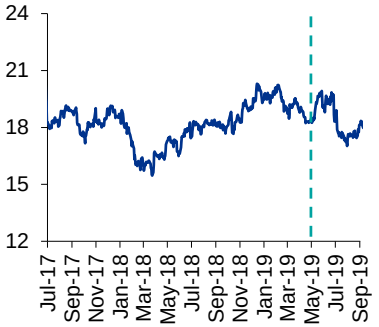
Iberdrola S.A.



REE (before the split)

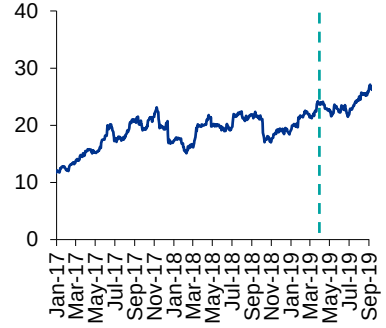


REE (after the split)

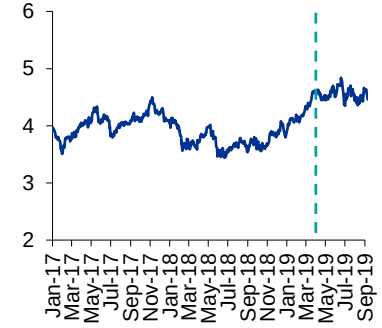


National Grid Plc

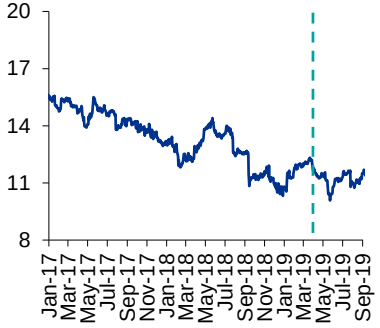
RWE AG



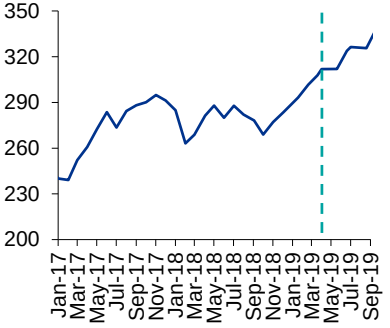
Snam SpA



SSE Plc (*GBP)



Eurostoxx Utilities



Source: S&P Capital IQ, 2019.

Relative valuation per company (2019)

	TEV/EBITDA (LTM) (as of 30 June) ▼	[1]TEV (EUR million) (as of 30 June)	Market Capitalization (EUR million) (as of 30 June)
RWE Aktiengesellschaft (DB:RWE)	17.9x	17,825.7	13,320.7
SSE plc (LSE:SSE)	16.3x	24,262.4	13,402.9
Naturgy Energy Group, S.A. (BME:NTGY)	14.3x	42,666.5	23,807.5
Fortum Oyj (HLSE:FORTUM)	14.0x	22,561.0	17,264.0
EDP - Energias de Portugal, S.A. (ENXTLS:EDP)	13.2x	32,266.0	12,147.4
Snam S.p.A. (BIT:SRG)	12.0x	25,337.7	14,103.7
EDP Renováveis, S.A. (ENXTLS:EDPR)	10.9x	13,156.2	7,868.2
National Grid plc (LSE:NG.)	10.7x	65,226.2	33,145.2
Iberdrola, S.A. (BME:IBE)	10.5x	96,142.0	55,337.0
Enagás, S.A. (BME:ENG)	9.7x	9,756.5	5,595.9
Red Eléctrica Corporación, S.A. (BME:REE)	9.4x	14,472.1	9,887.9
Endesa, S.A. (BME:ELE)	8.9x	30,910.4	23,938.4
Enel SpA (BIT:ENEL)	8.2x	123,092.4	62,423.4
E.ON SE (XTRA:EOAN)	7.4x	31,233.4	20,698.4
CEZ, a. s. (SEP:CEZ)	7.0x	14,837.6	11,322.6
ENGIE SA (ENXTPA:ENGI)	5.7x	50,305.0	32,168.0
Electricité de France S.A. (ENXTPA:EDF)	5.0x	70,609.6	33,778.6
Centrica plc (LSE:CNA)	4.1x	10,835.8	5,929.7
	Weighted average: 8.6	**695,496.50**	**396,139.50**

Note: (1) Total Enterprise Value as of 30 June 2019, TEV = market capitalization + interest-bearing debt + preferred stock - excess cash.
Source: S&P Capital IQ, 2019.

Relative valuation per company (3Q19)

	TEV/EBITDA (LTM) (as of 30 September)	[1]TEV (EUR million) (as of 30 September)	Market Capitalization (EUR million) (as of 30 September)
RWE Aktiengesellschaft (XTRA:RWE)	24.1x	(938.0)	16,518.0
SSE plc (LSE:SSE)	17.4x	10,859.5	15,020.1
EDP - Energias de Portugal, S.A. (ENXTLS:EDP)	13.8x	15,843.0	12,948.3
Snam S.p.A. (BIT:SRG)	12.6x	11,590.0	15,295.9
Fortum Oyj (HLSE:FORTUM)	11.7x	5,434.0	19,267.1
EDP Renováveis, S.A. (ENXTLS:EDPR)	11.6x	3,719.0	8,627.1
National Grid plc (LSE:NG.)	11.2x	32,057.8	35,676.3
Iberdrola, S.A. (BME:IBE)	11.2x	35,520.0	60,661.7
Naturgy Energy Group, S.A. (BME:NTGY)	11.1x	15,168.0	23,690.4
E.ON SE (XTRA:EOAN)	10.5x	8,554.0	23,255.1
Enagás, S.A. (BME:ENG)	9.9x	3,999.2	5,068.9
Endesa, S.A. (BME:ELE)	9.5x	5,809.0	25,558.3
Red Eléctrica Corporación, S.A. (BME:REE)	9.5x	4,973.4	10,059.0
Enel SpA (BIT:ENEL)	9.1x	51,181.0	69,651.9
ENGIE SA (ENXTPA:ENGI)	8.9x	26,619.0	36,122.7
CEZ, a. s. (SEP:CEZ)	6.4x	3,287.6	10,955.6
Electricité de France S.A. (ENXTPA:EDF)	5.0x	33,577.0	31,295.1
Centrica plc (LSE:CNA)	4.2x	5,152.5	4,982.3
	Weighted average: 9.3	**272,406.00**	**424,653.80**

Note: (1) Total Enterprise Value as of 30 June 2019, TEV = market capitalization + interest-bearing debt + preferred stock - excess cash.
Source: S&P Capital IQ, 2019.

Leverage and credit ratings

Quarterly rating variation: Upgrade Unchanged: Downgrade Rating not available: NA

	LTM Net Debt/ EBITDA (as of 30 September)		S&P Rating	Date[1]	Moody's Rating	Date[1]	Fitch Rating	Date[1]
SSE plc (LSE:SSE)	7.3		BBB+	20-Dec-18	Baa1	20-Dec-18	BBB+	6-Mar-19
EDP - Energias de Portugal, S.A. (ENXTLS:EDP)	6.6		BBB-	28-May-19	Baa3	1-Apr-19	BBB-	12-Jul-19
Snam S.p.A. (BIT:SRG)	5.4		BBB+	31-Dec-18	Baa2	31-Dec-18	BBB+	12-Jul-19
National Grid plc[2] (LSE:NG.)	5.3		BBB+	—	Baa1	—	BBB+	—
Enagás, S.A. (BME:ENG)	4.1		BBB+	25-Jul-19	Baa1	2-Apr-19	A-	12-Mar-19
Naturgy Energy Group, S.A. (BME:NTGY)	4.0		BBB	23-Sep-19	Baa2	6-Sep-19	BBB	29-Jul-19
Iberdrola, S.A. (BME:IBE)	3.8		BBB+	30-Apr-19	Baa3	5-Feb-19	BBB+	31-Dec-18
ENGIE SA (ENXTPA:ENGI)	3.5		A-	24-May-19	A3	13-Jun-19	A	19-Jun-19
Enel SpA (BIT:ENEL)	3.4		BBB+	14-Jan-19	Baa2	16-Jul-19	A-	11-Feb-19
Red Eléctrica Corporación, S.A. (BME:REE)	3.2		A-	21-May-19	Baa1	2-Apr-19	A-	6-Jun-19
EDP Renováveis, S.A. (ENXTLS:EDPR)	3.0		NA	—	NA	—	NA	—
E.ON SE (XTRA:EOAN)	2.6		BBB	31-Dec-18	Baa2	2-Apr-19	BBB+	31-Jul-19
Fortum Oyj (HLSE:FORTUM)	2.5		BBB	14-Aug-19	Baa2	2-Apr-19	BBB	3-Jun-19
Electricité de France S.A. (ENXTPA:EDF)	2.3		A-	10-Oct-19	A3	29-Mar-19	A-	31-Dec-18
Centrica plc (LSE:CNA)	2.0		BBB	2-Apr-19	Baa1	31-Jul-19	A-	8-Jan-19
Endesa, S.A. (BME:ELE)	1.7		BBB+	6-Dec-17	Baa2	16-Jul-19	A-	11-Feb-19
CEZ, a. s. (SEP:CEZ)	1.5		A-	23-Nov-18	Baa1	7-Oct-19	A-	26-Feb-19
RWE Aktiengesellschaft (XTRA:RWE)[3]	1.1		NA	NA	Baa3	23-Oct-19	BBB	23-Oct-19
Average:	**3.5**	**Mode:**	**BBB+**					

Note: (1) The date of publication of latest report (company release, market/industry/peer report) from which the rating has been sourced; 2 The exact date of publication of credit ratings was not mentioned in the source website; 3 On 15 February 2018, RWE ended its rating by the agency S&P's.

Source: S&P Capital IQ/ Moody's/ Fitch, 2019.

Global M&A overview 2Q - 3Q19

Main trends	The largest deals during 2Q–3Q19 were reported mostly in Asia, Europe and North American geographies. Total value of the top 15 deals amounted to EUR31.6 billion. Most of the deals involved companies operations in Renewables and New Energies such as wind, solar and hydro power plants. Top deals primarily constituted power generation, distribution, utilities and renewable companies to enhance their products and services portfolio in the area of sustainability and renewables. The deals also focused on enhancing synergies to reduce costs, increasing global presence, strengthening internal strategy, boosting capital plans, reducing dependency on future debt issuances, strengthening companies' core businesses, maximizing shareholders' value, energy transition and improving distribution network.
Main transactions	China Yangtze Power Co, Ltd. has agreed to acquire 83.6 percent stake translating into 407,091,346 shares in Luz del Sur S A from Sempra Energy. The divestment is in line with Sempra's mission to emerge as North America's premier energy infrastructure company. It will also allow the company to strengthen its operations in California and Texas.
	J.P. Morgan Investment Management (JPMIM), through its Infrastructure Investments Fund, has entered into an agreement to acquire El Paso Electric Co. JPMIM will acquire 40,615,756 shares of El Paso, representing 100 percent stake in the company. The acquisition will boost El Paso's ability to enhance its products and portfolio in renewable energy and sustainability initiatives.
	Hafslund E-CO AS has agreed to acquire a 50 percent stake in Eidsiva Energi AS. As per the terms of the deal, Eidsiva Energi will own 100 percent of debt-free Hafslund Nett, a wholly owned subsidiary of Hafslund E-CO, to form a new power grid company. The transaction is expected to enable Eidsiva Energi to safeguard and develop jobs, technical expertise and centers of expertise in Hedmark and Oppland.
	SEAS-NVE a.m.b.a. has agreed to acquire the Danish power distribution, residential customer and city light businesses of Orsted A/S. The deal is expected to strengthen the company's core business areas and skills base. The transaction upholds the interests of SEAS' cooperative members and customers within Energy.
	The Carlyle Group, a US-based private equity firm, has acquired a significant minority stake in Compania Espanola de Petroleos, S.A.U. (Cepsa). As part of the deal, Carlyle will acquire about 30 percent to 40 percent stake. Carlyle funded the acquisition via its Carlyle International Energy Partners I & II, Carlyle Partners VII and Carlyle Europe Partners V funds.

Source: Mergermarket, 2019.

Top 15 M&A operations 2Q - 3Q19, by deal value

Date	Target company	Target description	Target country	Bidder company	Bidder country	Seller company	Deal value EUR (m)
30 Sep 2019	Luz del Sur S A (83.6 percent stake)	Luz del Sur S A , a listed Peru-based company, headquartered in Lima, is engaged in electric power distribution and industrial lighting projects.	Peru	China Yangtze Power	China	Sempra Energy	3,823.6
3 Jun 2019	El Paso Electric Co	El Paso Electric Co. a US-based electric utility company headquartered in El Paso, Texas, provides generation, transmission and distribution services to retail and wholesale customers.	USA	J.P. Morgan Investment Management	USA	NA	3,794.6
19 Jun 2019	Eidsiva Energi AS (50 percent stake)	Eidsiva Energi AS is a Norway-based company. It is engaged in the production and distribution of electricity and is headquartered in Hamar.	Norway	Hafslund E-CO AS	Norway	NA	3,009
18 Sep 2019	Orsted A/S (Power distribution business), Orsted A/S (City Light business) and Orsted A/S (Residential customer business)	Orsted A/S, is a listed Denmark-based company engaged in procuring, producing, distributing and trading energy and related products, and is headquartered in Fredericia.	Denmark	SEAS-NVE	Denmark	Orsted	2,852.7
8 Apr 2019	Compania Espanola de Petroleos, S.A.U. (37 percent stake)	It is a Spain-based company engaged in the exploration and production of petroleum, and refining, distribution and sale of crude oil, natural gas and electricity.	Spain	The Carlyle Group	USA	Mubadala Investment Company	2805.3

Source: Mergermarket, 2019.

Top 15 M&A operations 2Q - 3Q19, by deal value (cont.)

Date	Target company	Target description	Target country	Bidder company	Bidder country	Seller company	Deal value EUR (m)
5 Sep 2019	Bhushan Power & Steel Limited	Bhushan Power & Steel Limited (BPSL), is an India-based manufacturer of iron and steel products, headquartered in New Delhi.	India	JSW Steel	India	NA	2,485.1
18 Apr 2019	ConocoPhillips Company (UK Oil and Gas business)	ConocoPhillips Company is a listed US-based integrated energy company that explores, produces, transports and markets crude oil, natural gas, natural gas liquids and bitumen. It is headquartered in Houston, Texas.	USA	Chrysaor Holdings Limited	UK	ConocoPhillips Company	2,376.1
30 Jul 2019	Napanee Generating Station (900MW), Halton Hills Generating Station (683MW) and Portlands Energy Centre (550MW) (50 percent stake)	TransCanada Corporation (TC Energy), is a listed Canada-based energy company focused on natural gas transmission and power services, headquartered in Calgary. The target companies are portfolios of TransCanada Corporation.	Canada	Ontario Power Generation	Canada	TransCanada Corporation	1,955.7
12 Aug 2019	East Anglia ONE offshore wind farm (40 percent stake)	East Anglia ONE offshore wind farm is an UK-based offshore wind farm.	UK	Green Investment Group	UK	Iberdrola SA	1,755.3
5 Apr 2019	Alpiq Holding Ltd (26.98 percent stake)	Alpiq Holding Ltd is a listed Switzerland-based company engaged in electric power production and distribution utility, headquartered in Lausanne.	Switzerland	A consortium led by CSA Energy Infrastructure Switzerland	Switzerland	Electricite de France S.A.	1242.2

Source: Mergermarket, 2019.

Top 15 M&A operations 2Q - Q19, by deal value

Date	Target company	Target description	Target country	Bidder company	Bidder country	Seller company	Deal value EUR (m)
24 Sep 2019	Chongqing United Energy (88.55 percent stake)	Chongqing United Energy, a China-based company headquartered in Chongqing, is engaged in electricity generation.	China	Chongqing Three Gorges Water Conservancy and Electric Power	China	An investor group led by Chongqing Xinyu Investment Group	1,203.6
31 July 2019	Veolia Environnement S.A. (US district energy business)	It is a listed France-based provider of environmental management services.	France	Antin Infrastructure Partners	France	Veolia Environnement S.A.	1,123.2
24 Apr 2019	Duke Energy Renewables, LLC (37 operating wind, solar and battery storage assets) (49 percent stake); Duke Energy Renewables, LLC (11 operating solar assets) (33 percent Stake)	Duke Energy Renewables, LLC, is a US-based company headquartered in Charlotte, North Carolina. It is a developer of commercial renewable energy solution, including wind and solar projects, and is a subsidiary of Duke Energy Corporation.	USA	John Hancock Life Insurance Company (US) and John Hancock Infrastructure Fund (Canada), GP	USA and Canada	Duke Energy Renewables, LLC	1,117
24 Jun 2019	Alberta PowerLine Limited (60 percent stake)	Alberta PowerLine Limited (APL), a Canada-based company, is engaged in designing, building, owning and operating power transmission projects.	Canada	Greystone Managed Investments (Canada) and IST Investmentstiftung (Switzerland)	Canada and Switzerland	Quanta Services, Inc and Canadian Utilities Limited	1,049.7
25 Jun 2019	Cube Hydro Partners	Cube Hydro Partners, LLC, is a US-based operator of small and medium-sized hydropower facilities. It is headquartered in Bethesda, Maryland.	USA	Ontario Power Generation	Canada	I Squared Capita	986.3

Source: Mergermarket, 2019.

Contact

KPMG Global Energy Institute

Ted Surette
tsurette@kpmg.com.au

Valerie Besson
valeriebesson@kpmg.fr

Country contacts

France	**Valerie Besson** valeriebesson@kpmg.fr
Germany	**Michael Salcher** msalcher@kpmg.com
Italy	**Francesco Galgliardi** fgagliardi@kpmg.it
Netherlands	**Jaap Van Roekel** vanroekel.jaap@kpmg.nl
Nordics	**Morten Mønster** mmoenster@kpmg.com
Portugal	**Susana Abreu** sabreu@kpmg.com
Spain	**Alberto Martin Rivals** albertomartin1@kpmg.es
Turkey	**Altay Alpagut** aalpagut@kpmg.com
UK	**Simon Virley** simon.virley@kpmg.co.uk

ENR EMA Report main contacts

Valérie Besson
valeriebesson@kpmg.fr

Alexis Majnoni d'Intignano
amajnoni@kpmg.fr

Cécilie Timestit
ctimestit@kpmg.fr

kpmg.com/socialmedia