



# European Power & Utilities Report

KPMG Global Energy Institute

—

Q1 2018





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# Price and margins overview

### Electricity prices

Prices in France and Germany increased in Q1 after the relevant reduction experienced at the end of 2017 (from late November peaks). Spanish prices came down significantly due to a higher share of hydro, wind and other renewables. UK electricity prices followed the price trends of natural gas and experienced a pronounced peak in early March, recovering January-level prices at the end of the quarter.

### Oil prices

Notwithstanding the reduction of prices experienced in February, both WTI and Brent Oil average prices maintained their upward trend during Q1, reaching US\$64.80/b and US\$70.20/b respectively at the end of March.

### Gas prices

HH and EU border average prices rose during the quarter mainly due to January's sharp increase when both references peaked almost at US\$3.80/MBtu and US\$7.50/MBtu, respectively. Since then HH and EU border prices have come down to US\$2.80 and US\$7.00/MBtu at the end of the period. NBP also followed this trend after their March peak.

### Coal prices

Both Australian and South African coal prices increased during Q1 2018 mainly due to January's sharp increase. Since January's peak, prices have come down significantly (even below Q4 2017 in the case of Australian coal). Colombian coal average quarterly prices fell by 3.2 percent in Q1 to US\$81.20/Mt. mainly after the slight increase experienced in January.

### Carbon prices

Carbon prices rose significantly during the quarter, reaching EUR13.20/T at the end of March, after data showed emissions rose in 2017 and Britain's government declared its intention to stay in the ETS until the end of 2020. Average quarterly carbon price was up 31 percent vs. Q4'17.

### Dark/spark spreads

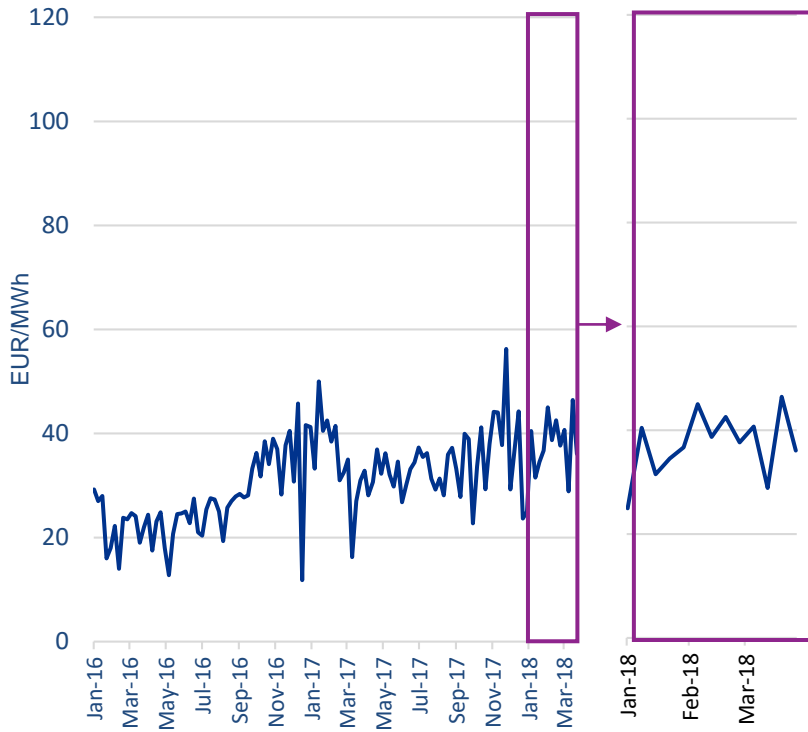
Dark and Spark spreads maintained high volatility and negative values in Germany and France for Q1 (more clearly in the case of Germany). The UK and Italy were not affected by this trend as spreads remained at close to zero or had slightly positive values, respectively, during the quarter.

# Electricity price evolution

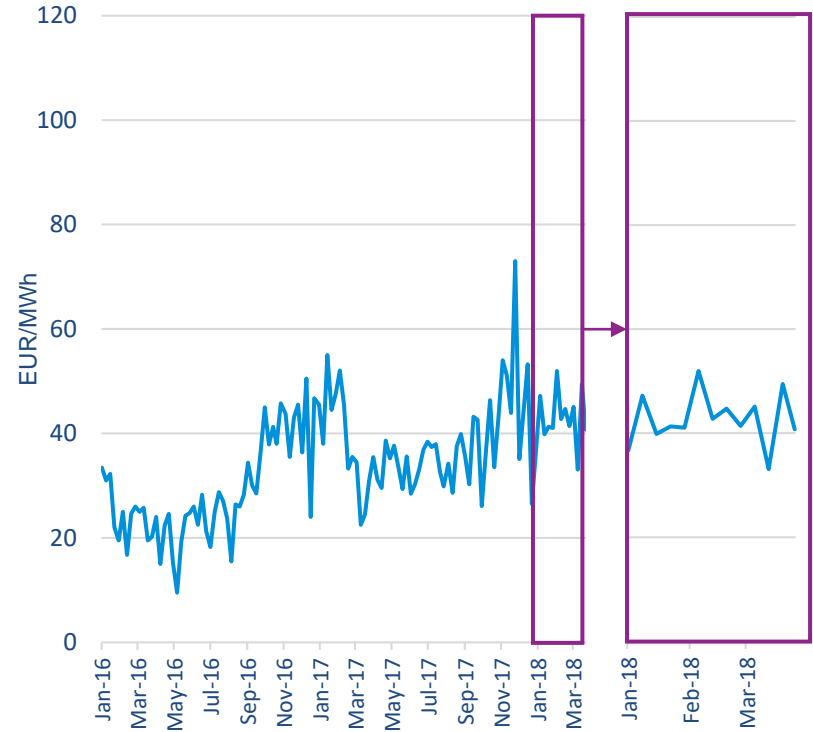


Germany

## Base load



## Peak load



Source: Bloomberg; 2018.

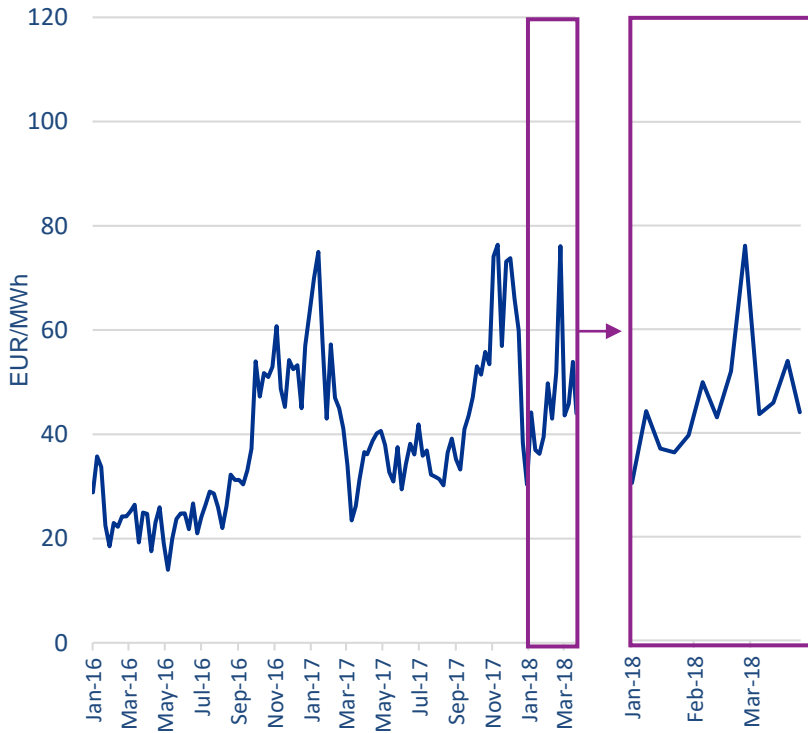


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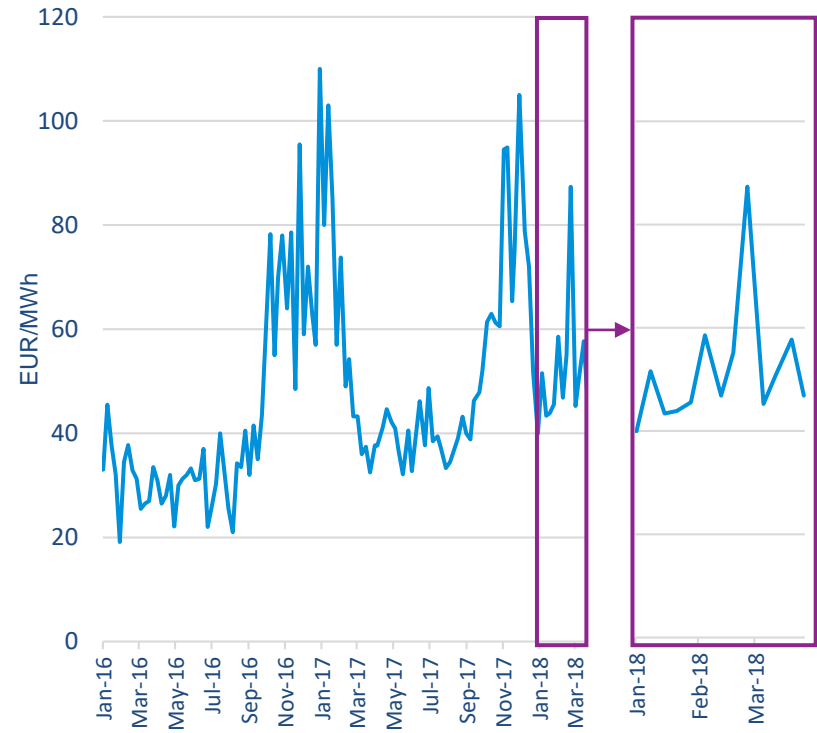
# Electricity price evolution



Base load



Peak load



Source: Bloomberg; 2018.

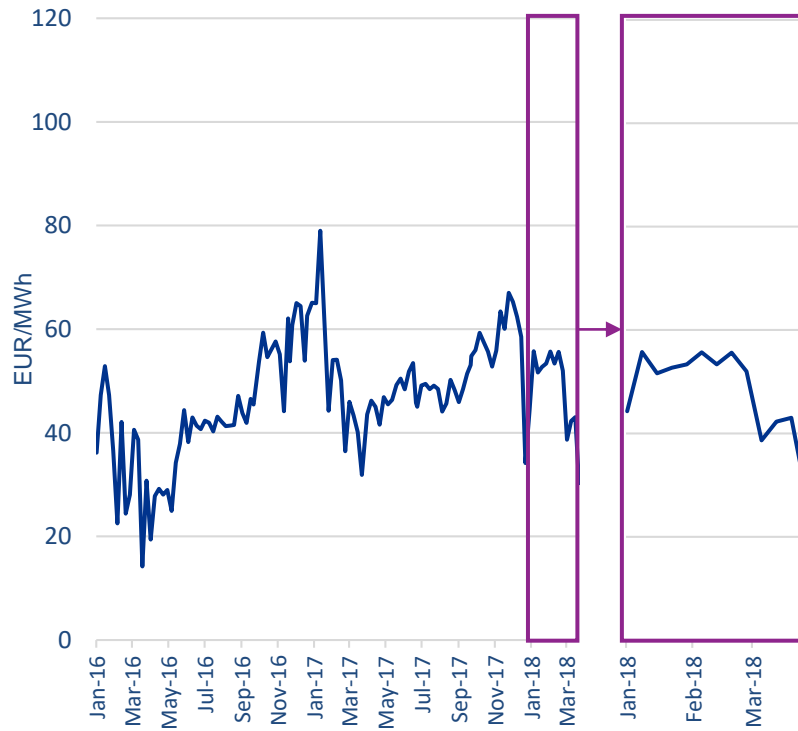


# Electricity price evolution

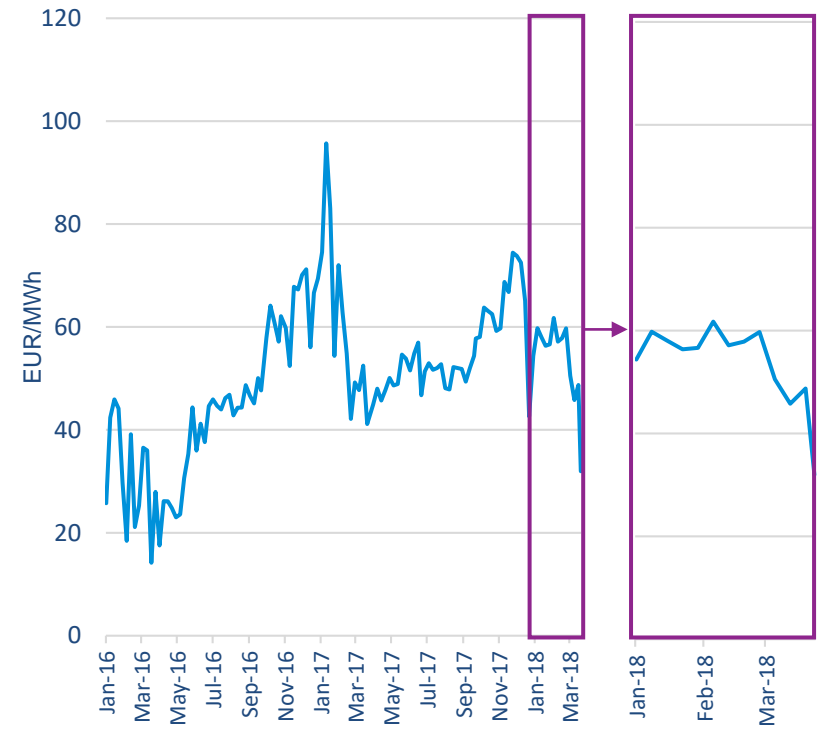


Spain

## Base load



## Peak load



Source: Bloomberg; 2018.

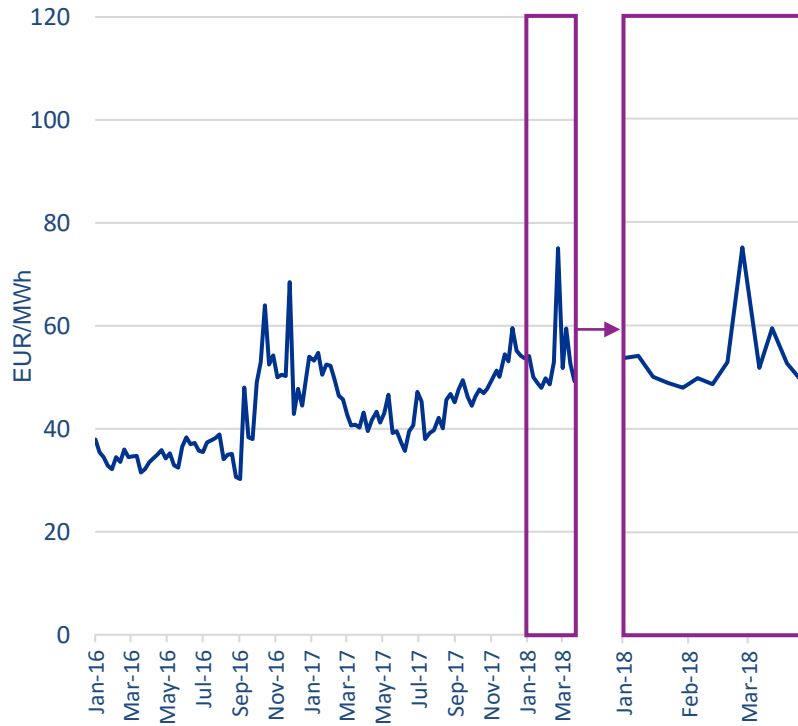


# Electricity price evolution

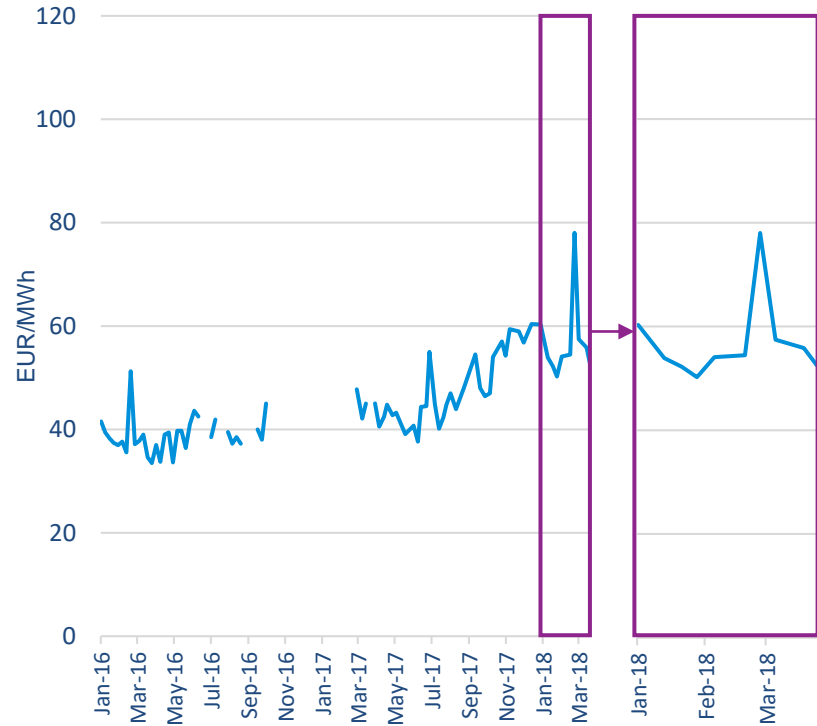


United Kingdom

## Base load



## Peak load<sup>1</sup>

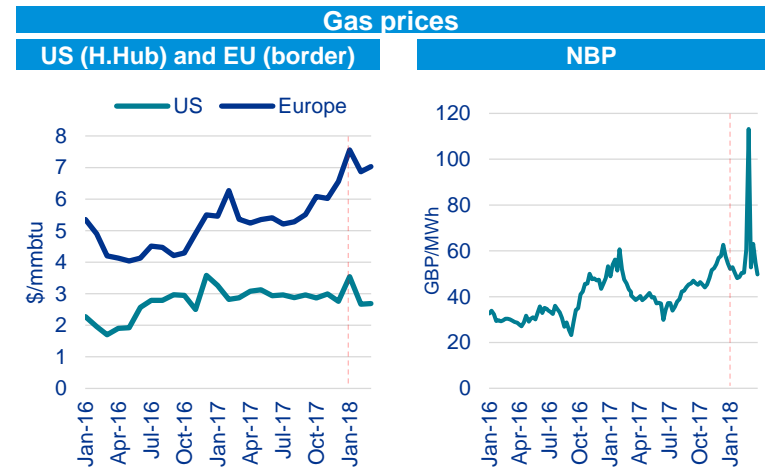
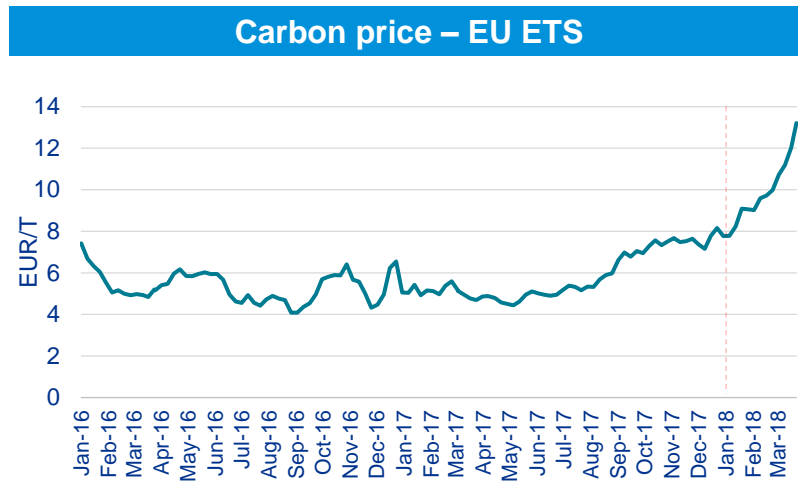
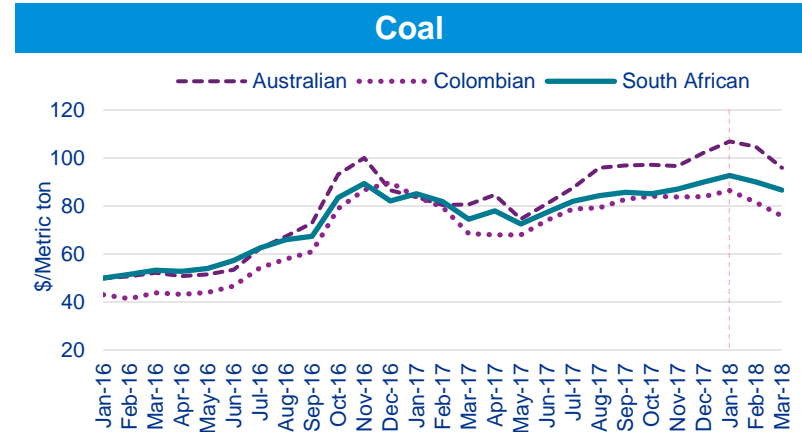
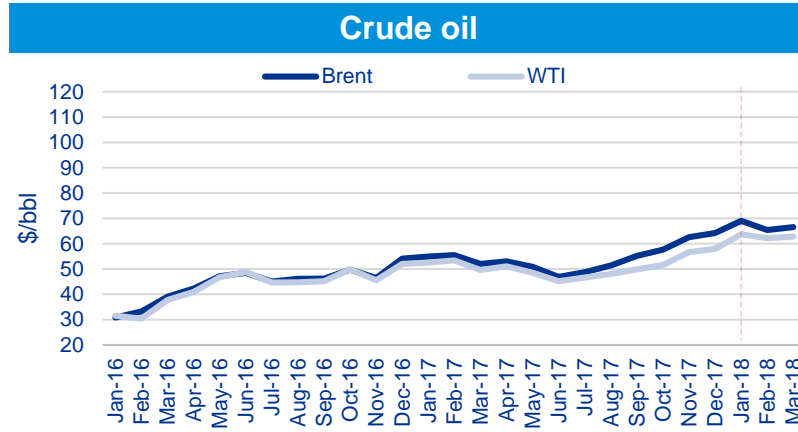


<sup>1</sup> Due to lack of information, the line reflecting peak load prices in 2016 and 2017 is incomplete.

Source: Bloomberg; 2018.



# Fuel price evolution

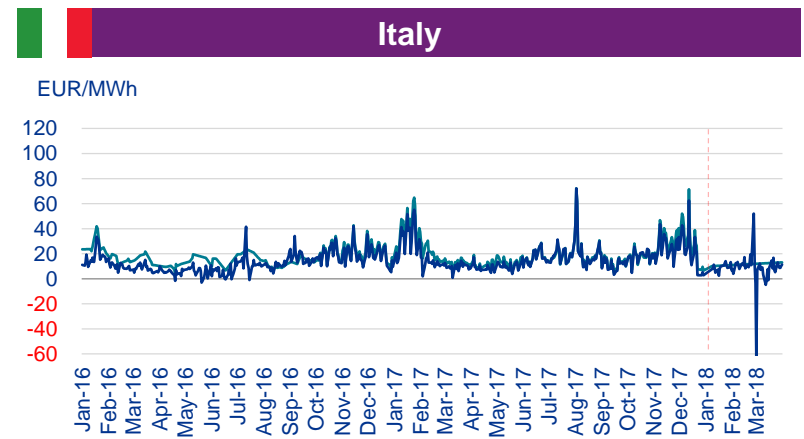
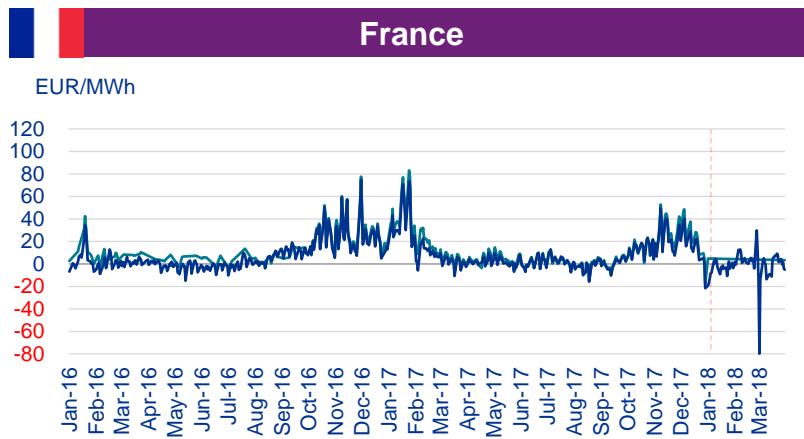
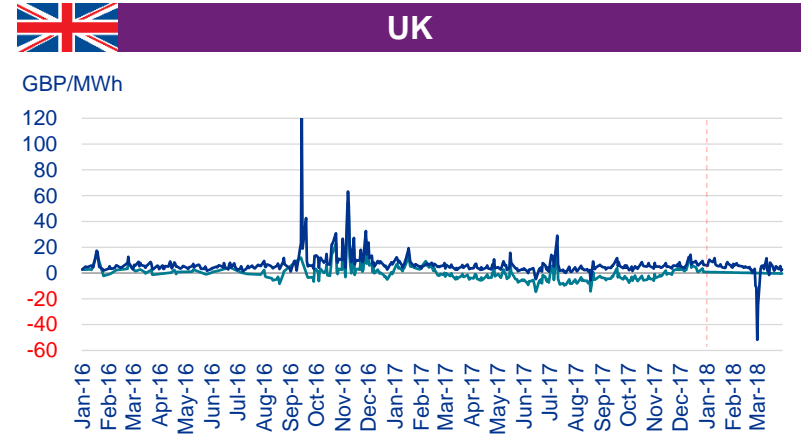
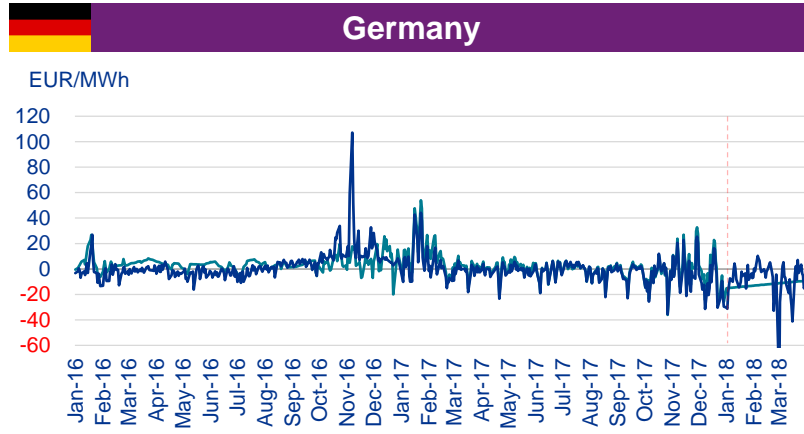


Source: World Bank/Bloomberg; 2018.





# Clean dark and spark spreads



— Clean dark spread — Clean spark spread

Source: Bloomberg; 2018.



# Regulatory overview

|                |  |
|----------------|--|
| European Union | The European Commission approved six electricity capacity mechanisms aimed at ensuring the security of supply in Belgium, France, Germany, Greece, Italy and Poland. The Commission stated that even though these mechanisms are in line with the 2014 Guidelines on State Aid for Environmental Protection and Energy, they are temporary and cannot replace the imminent electricity market reforms.                     |
| Germany        | The Federal Network Agency announced on 20 February 2018 the bid results for the auction for Onshore Wind Energy which took place on 1 February 2018. In the auction procedure, the Federal Network Agency awarded 83 bids with 709MW. The average award price was 4.73 ct/KWh. This auction was held together with the auction for solar plants.  |
| Italy          | In relation to white certificates, the ARERA (Italian Authority), with the resolution 139/2018/R/efr approves the updates of the TEE (Energy Efficiency Certificates) market rules. These rules are effective from the GME (Gestore del Mercato Elettrico) publication date. The objective is to eliminate tariff barriers to energy efficiency and electricity consumption.   |
| Portugal       | An incentive has been created for municipal public passenger transport vehicles to promote the replacement of the use of vehicles powered by fossil fuels by electric vehicles, as part of the commitments made by successive Portuguese governments in struggling against climate change.   |
| Spain          | Spain lost the second international arbitration related to the cuts in renewable energy plants remuneration. The Stockholm Chamber of Commerce obliged Spain to pay EUR53 million to Novenergía (an institutional investor) which is the owner of various PV plants on Spanish territory. Spain has about 30 more international arbitrages related to similar disputes demanding a total EUR7.565 million in compensation. |

# Regulatory overview

## Turkey

Turkish Energy Minister Berat Albayrak stated that preparations have started to hold new tenders for 1,000 megawatt (MW) wind and solar power plant projects in 2018 at a sector meeting on 22 February 2018. The Renewable Energy Office, Ministry of Energy in Turkey has announced three sites for new wind power and three sites for new solar projects.

## UK

**Capacity Market auction results:** The T-4 Capacity Market (CM) auction cleared at a record low price of GBP8.40/kW, securing 50.4GW of capacity for delivery in 2021/22. This will be at a gross cost to consumers of around GBP423 million. In addition, this year's auction means a big shift away from coal, with nearly 8GW of existing coal stations missing out on agreements. It also highlights how existing gas and nuclear, plus new interconnectors and decentralized energy are vital in filling the gap, as the GB market transitions to a power system that is both more localized and more international, with decreasing dependence on large-scale power generation. On the other hand, the low clearing price, however, means that it is difficult for proposed new large-scale gas-fired capacity.

## US

The Federal Energy Regulatory Commission (FERC) removed barriers to participation of electric storage resources in the capacity, energy, and ancillary services markets operated by Regional Transmission Organizations and Independent System Operators. This is considered a step towards a market model that takes into consideration the physical and operational characteristics of electric storage resources.

# Links to new key regulation



## News



The European Commission approved six electricity capacity mechanisms aimed at ensuring the security of supply in Belgium, France, Germany, Greece, Italy and Poland. The Commission stated that even though these mechanisms are in line with the *2014 Guidelines on State Aid for Environmental Protection and Energy*, they are temporary and cannot replace the imminent electricity market reforms.

[Link I](#)

The International Renewable Energy Agency (IRENA) published a report titled *Renewable energy prospects for the European Union* stating that the EU could double the renewable share in its energy mix, cost effectively, from 17 percent in 2015 to 34 percent in 2030 surpassing the current goal of 27 percent by 2030.

[Link II](#)

With the objective of securing the integrity of cross-border trading capacities, ACER published a guidance note on capacity hoarding in intraday electricity markets that could constitute market manipulation under REMIT. Efficient management of cross-border trading capacities can potentially reduce the need for balancing services and thus contribute to lower network fees, which in turn benefit all consumers.

[Link III](#)

The European Commission approved the Belgian certificate schemes for renewable electricity and high-efficiency cogeneration concluding that the policies were in line with EU State aid rules while promoting climate goals and preserving competition.

[Link IV](#)

# Links to new key regulation



## News

On 7 February 2019 the European Commission approved the capacity reserve mechanism according to Art. § 13 e of the German Energy Act. The capacity reserve was necessary for Germany to guarantee the security of supply during the fundamental reform of its electricity market and, at the same time, be able to cope with the phasing out of nuclear energy. The control also included the draft of the capacity reserve regulation (KapResV), which was forwarded by Germany to the Commission on 23 January 2017, and its adoption can now be swiftly expected.

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[Link I](#)

On 20 February 2018 the Federal Network Agency announced the bid results for the auction for Onshore Wind Energy which took place on 1 February 2018. In the auction procedure, the Federal Network Agency awarded 83 bids with 709 MW. The average award price was 4.73 ct/kWh. This auction was held together with the auction for solar plants.

On 12 April 2018 the Federal Network Agency announced the results of the common auction for wind and solar plants. Only bids for solar plants were made. There were 32 awarded bids of 210 megawatts. The average awarded bid was 4.67 ct/kWh.

On 6 March 2018 the agency announced that a new auction will commence (only for onshore wind energy). Bids for this auction may be submitted by 1 May 2018. The volume which will be awarded is 670. 161 MW with a starting bidding price of 6.30 ct/kWh. Participation requirements for all bids is that the plant must receive a permit under the Federal Emission Control Act (BImSchG) and the permit is to be registered in the Market Master data register (MaStR) of the Federal Network Agency until 11 April 2018.

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[Link II](#)



# Links to new key regulation



## News

On 30 January 2018 the Federal Network Agency (Bundesnetzagentur) announced the terms for the second auction for offshore windfarms. The legislator has lowered the maximum bid threshold in the second tender from 12 ct/kWh to 10 ct/kWh. The auction volume amounts to 1,610 megawatts. This figure is based on the auction volume of 1,550 megawatts under the Wind Energy on Sea Act plus 60 megawatts, which could not be awarded in the first auction in April 2017. The bids were to be submitted to the Federal Network Agency in Bonn by 3 April 2018. Unlike in the first auctioning procedure, bids from offshore wind farms in the Baltic Sea are to be preferred.

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[Link III](#)

As of 4 December 2018, the Market Master Data (MaStR) register will be online. All producers, suppliers, storage facilities and grid operators have to register. The Market Master Data Register establishes a comprehensive regulatory register of the electricity and gas market that can be used by public authorities and market players in the energy sector (electricity and gas). For many energy industry processes, recourse to the master data of the register represents a significant increase in data quality and simplification. Many regulatory reporting requirements can in the future be standardized, simplified or completely abolished by centralized registration.

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[Link IV](#)

# Links to new key regulation

## News

Italy

In relation to white certificates, the ARERA (Italian Authority), with the resolution 139/2018/R/efr approves the updates of the TEE (Energy Efficiency Certificates) market rules. These rules are effective from the GME (Gestore del Mercato Elettrico) publication date. The objective is to eliminate tariff barriers to energy efficiency and electricity consumption.

[Link I](#)

In relation to the common grid model methodology, the ARERA (Italian Authority), with the resolution 119/2018/R/eel and in coordination with other European Authorities, requests Terna (Italian TSO) to update the methodology for the common grid model prepared by all TSOs (Transmission System Operators) as per the EU Regulation 1719/2016. The objective is to increase the market electricity integration.

[Link II](#)

In relation to the switching regulation in the gas sector, the ARERA (Italian Authority), with the resolution 77/2018/R/com establishes the regulation of switching through the SII (Integrated Information System) as well as the management of contract resolution.

In relation to Industry 4.0, in particular about the constitution methods and the forms of financing highly specialized competence centers, the government has published the official journal n. 6 on 9 January.

[Link IV](#)

# Links to new key regulation



## News

Portugal

Accordingly with regulatory requirements, grid operators submitted a proposal to the Regulatory Authority for Energy Services (ERSE) for the loss profiles and the consumption, production and self-consumption profiles to be applied in 2018. ERSE approved the respective directives and published the information on its website to be considered for 2018.

[Link I](#)

[Link II](#)

The Resolution of the Council of Ministers issued in January 2018, approved the program of actions and studies to be developed by ERSE in the scope of the public tender procedures for the award of concessions for the operation of the municipal distribution low voltage networks.

[Link III](#)

A new ordinance issued in January defines the application of Ordinance no. 15/2015 for the year 2018, regarding the tariff applicable to the electricity sold to the public service electricity grid, produced by small production units that use renewable energy sources.

[Link IV](#)

The Secretary of State for Energy has determined the discount of 31.2 percent, to be applied in tariffs for access to natural gas networks, applicable from 1 July 2018.

[Link V](#)

# Links to new key regulation



## News

Portugal

Within the framework of the Industrial Strategy of Oceanic Renewable Energies and its Action Plan, the Council of Ministers approved a set of measures, updating the legal regime of the pilot zone for oceanic renewable energies.

[Link VI](#)

The Minister of Environment approved the annual plan for the allocation of resources and revenues of the Environmental Fund, for the year 2018. Following the approval of the resources of the fund, the Minister of the Environment has issued complementary regulation for the award of the incentive for the introduction of low carbon emission vehicles.

[Link VII](#)

[Link VIII](#)

An incentive has been created for municipal public passenger transport vehicles to promote the replacement of the use of vehicles powered by fossil fuels to electric vehicles, as part of the commitments made by successive Portuguese governments.

[Link IX](#)

The Secretary of State for Energy approved the regulation for the attribution of production licenses or acceptance of prior notification for the production of electricity under special regime and under the general remuneration regime.

[Link X](#)

# Links to new key regulation



## News

Spain lost the second international arbitration related to the cuts in renewable energy plants remuneration. The Stockholm Chamber of Commerce obliged Spain to pay EUR53 million to Novenergía (an institutional investor) which is the owner of various PV plants on Spanish territory. Spain has about 30 more international arbitrages related to similar disputes demanding a total EUR7.565 million in compensations.

[Link I](#)

The National Commission on Markets and Competition (CNMC) approved the contract framework which facilitates the access to Enagas' transmission and distribution network for entities from the rest of Europe.

[Link II](#)

[Link III](#)

The CNMC published a report regarding the regulatory conditions proposed by the Ministry of Energy, Tourism and Digital Agenda related to the potential closure of electricity generation plants. The new tougher closure provisions as well as the proposed auction mechanism that is to be employed in the case of a change of ownership of an existing generation plant are being criticized.

[Link IV](#)

[Link V](#)

On 22 January 2018, the National Security Council established the Special Committee for Energy Security. This committee will have the goal of guaranteeing the security of energy infrastructures as well as ensuring sustainable and cost-efficient national energy supply.

[Link VI](#)

The CNMC published a report criticizing the method proposed by the ministry for calculating the interest rates applied to gas system collection rights on the grounds that it increases the total cost of the system by EUR8.2 million.

[Link VII](#)

[Link VIII](#)



# Links to new key regulation



## News

TURKEY

Turkish Energy Minister Berat Albayrak stated that preparations have started to hold new tenders for 1,000-megawatt (MW) wind and solar power plant projects in 2018 at a sector meeting on 22 February. The Renewable Energy Office, Ministry of Energy in Turkey announced three sites for new wind power and three sites for new solar projects.

[Link I](#)

Turkish households are preparing to generate solar energy by installing roof-top and facade solar panels with a new legislation that enables residential utility customers to supply their own electricity.

[Link II](#)

The European Bank for Reconstruction and Development (EBRD) welcomes Turkey's National Energy Efficiency Action Plan (NEEAP), which aims to reduce 14 percent of primary energy consumption by 2023 and invest almost US\$11 billion in energy efficiency measures.

[Link III](#)

[Link IV](#)

# Links to new key regulation



## News

TURKEY

Electricity market capacity mechanism regulation was announced at the beginning of 2018. Power plant operators are allowed to benefit from the TRY1.5 billion in annual funds. Lignite fired power plants have the priority to benefit from the fund and gas power plants comes second.

[Link V](#)

[Link VI](#)

[Link VII](#)

The Council of Ministers decided to continue its implementation of TETAŞ's (the state-owned electricity wholesale company) purchase of electricity from domestic coal-fired power plants at a guaranteed price.

[Link VIII](#)

With the Regulation of Recent Source Supply, eligible subscribers above 50 million kwh of electricity consumption per year are not allowed to benefit from the National Electricity Tariff. This regulation aims to direct these customers to buy electricity from private wholesalers

# Links to new key regulation



## News

UK

### Capacity market auction results

- The T-4 Capacity Market (CM) auction cleared at a record low price of GBP8.40/kW, securing 50.4GW of capacity for delivery in 2021/22. This will be at a gross cost to consumers of around GBP423 million.
- This year's auction means a big shift away from coal, with nearly 8GW of existing coal stations missing out on agreements. It also highlights how existing gas and nuclear, plus new interconnectors and decentralized energy are vital in filling the gap, as the GB market transitions to a power system that is both more localized and more international, with decreasing dependence on large-scale power generation.
- The low clearing price means that it is difficult for proposed new large-scale gas-fired capacity.
- The January 2018 T-1 auction cleared at GBP6/kW, securing 5.8GW of capacity for delivery in 2018/19, with the total cost of CM approximately GBP1 billion for 2018/19. This is a 'top-up' auction to the capacity secured for this same delivery year in the T-4 2014 auction (initially 49.3GW, at GBP19.40/kW).

[Link I](#)

[Link II](#)

[Link III](#)

### RIIO 2 draft framework

- RIIO (Revenue = Incentives + Innovation + Outputs) is the name given to the price controls that apply to network companies (transmission system and distribution network operators) for both gas and electricity.
- The second iteration, RIIO-2, aims to take account of changes in the way networks are expected to be used in the coming years, to simplify the relatively complex setting of incentives and cost allowances, and to ensure fairer returns from both the consumer and investor perspective.
- The RIIO-2 price control was put out for consultation by the regulator, Ofgem, in March 2018 – responses are due by May 2018.
- RIIO-2 is due to become applicable from April 2021 (for electricity transmission and gas distribution) and from April 2023 (electricity distribution).

[Link IV](#)

# Links to new key regulation



## News

US

The Federal Energy Regulatory Commission (FERC) removed barriers to participation of electric storage resources in the capacity, energy, and ancillary services markets operated by Regional Transmission Organizations and Independent System Operators. This is considered a step towards a market model that takes into consideration the physical and operational characteristics of electric storage resources.

[Link I](#)

The FERC proposed to approve the new mandatory reliability standards proposed by the The North American Electric Reliability Corporation (NERC) aimed at strengthening supply chain risk management protections for the electric system as a whole. The proposed standards are intended to augment current Critical Infrastructure Protection standards aimed at mitigating cyber security risks associated with the supply chain for the grid-related cyber systems.

[Link II](#)

The US Secretary of Energy established a new Office of Cybersecurity, Energy Security, and Emergency Response (CESER) at the US Department of Energy (DOE). The CESER office will focus on protecting the nation's energy infrastructure from cyber threats, physical attacks, and natural disasters.

[Link III](#)

The FERC staff inquiry revealed no evidence of anticompetitive withholding of natural gas pipeline capacity on the Algonquin Gas Transmission by New England shippers. The decision followed the alleged pipeline capacity withholdings by local distribution companies in New England with the aim to manipulate prices in the region.

[Link IV](#)

# Capital markets overview

|                     |   |
|---------------------|---|
| Eurostoxx Utilities | After the significant reduction experienced in January, the Eurostoxx Utilities Index maintained an upward trend at the end of Q1 and has gained 11.8 percent in the last 12 months.  |
| Best performance    | CEZ as, EDP Renovaveis and Gas Natural registered the best performance in Q1 2018 in terms of share price; a period where 14 out of the top 18 European players have experienced a negative QoQ price evolution.  |
| Valuation levels    | <p>Valuation levels in the sector averaged at 7.9 EV/EBITDA in Q1 2018; 1.3 percent lower than the previous quarter.</p> <p>Wide differences persist in EBITDA multiples, with Snam, Iberdrola and Fortum receiving highest valuations, trading above 11 x EV/EBITDA.</p> |
| Net debt ratios     | Net debt ratios averaged at 3.2 x EBITDA in Q1 2018, 5.3 percent lower than the figure registered in Q4 2017 (3.38 x EBITDA).   |
| Credit ratings      | S&P and Moody's made the only changes in credit ratings in the European sector during the quarter with the downgrade of Fortum OyJ to BBB and Baa2 respectively.  |



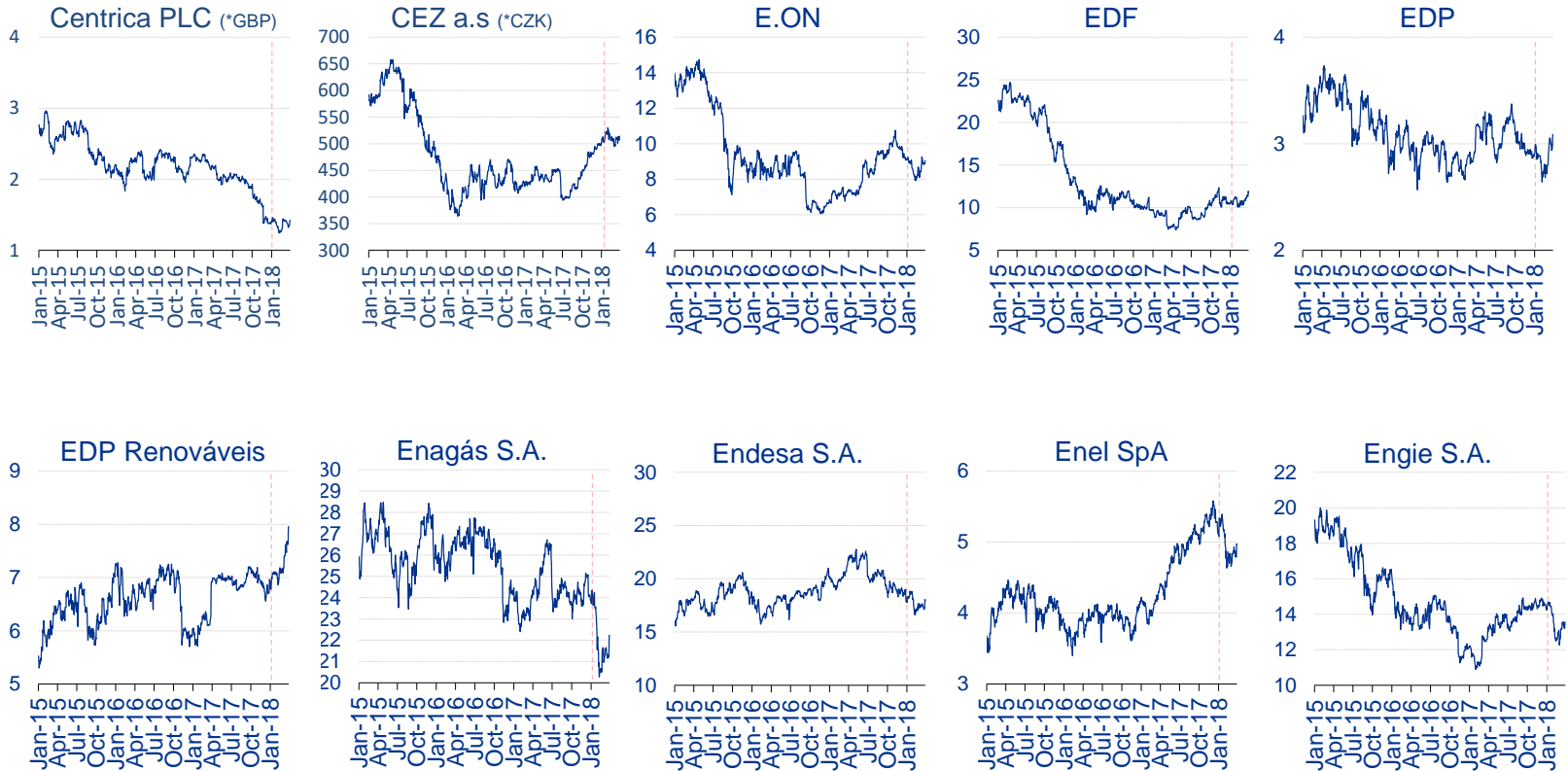
# Share price evolution: overview

| Company                  | Q1 2016 | Q2 2016 | Q3 2016 | Q4 2016 | Q1 2017 | Q2 2017 | Q3 2017 | Q4 2017 | Q1 2018 | Last quarter Q1 2018/ Q4 2017 | Last year Q1 2018/ Q1 2017 |
|--------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------------------------------|----------------------------|
| CEZ as (*CZK)            | 391.38  | 428.52  | 436.75  | 435.84  | 435.62  | 437.61  | 413.66  | 477.50  | 510.22  | 6.85%                         | 17.12%                     |
| EDP Renováveis           | 6.72    | 6.72    | 7.04    | 6.31    | 6.13    | 6.98    | 6.92    | 6.92    | 7.19    | 3.87%                         | 17.31%                     |
| Gas Natural SDG SA       | 17      | 17.49   | 18.31   | 17.19   | 18.32   | 21.17   | 20.00   | 18.63   | 19.17   | 2.90%                         | 4.60%                      |
| Fortum Oyj               | 12.88   | 13.14   | 14.26   | 14.48   | 14.59   | 13.84   | 14.88   | 17.57   | 17.72   | 0.86%                         | 21.46%                     |
| EDF                      | 10.94   | 11.29   | 11.22   | 10.12   | 8.85    | 8.86    | 9.25    | 10.93   | 10.79   | -1.31%                        | 21.88%                     |
| EDP                      | 3.01    | 2.97    | 2.97    | 2.84    | 2.84    | 3.13    | 3.12    | 2.97    | 2.87    | -3.34%                        | 1.12%                      |
| Iberdrola SA             | 6.13    | 5.99    | 5.98    | 5.93    | 6.17    | 6.89    | 6.81    | 6.62    | 6.25    | -5.68%                        | 1.33%                      |
| Enel SpA                 | 3.72    | 3.93    | 3.99    | 3.88    | 4.10    | 4.62    | 5.00    | 5.29    | 4.96    | -6.15%                        | 20.95%                     |
| Endesa SA                | 17.05   | 17.76   | 18.54   | 19.24   | 20.04   | 21.85   | 20.17   | 18.92   | 17.69   | -6.50%                        | -11.68%                    |
| ENGIE SA (GDF Suez S.A.) | 14.19   | 13.79   | 14.41   | 12.4    | 11.88   | 13.48   | 13.93   | 14.53   | 13.52   | -6.98%                        | 13.83%                     |
| SSE Plc (*GBP)           | 14.26   | 15.1    | 15.5    | 15.23   | 15.19   | 14.71   | 14.27   | 13.54   | 12.55   | -7.33%                        | -17.40%                    |
| REE <sup>1</sup>         | 73.94   | 77.88   | 19.811  | 17.82   | 17.21   | 19.17   | 18.47   | 18.39   | 16.84   | -8.45%                        | -2.17%                     |
| Enagás SA                | 25.88   | 26.7    | 26.82   | 24.61   | 23.43   | 25.37   | 24.14   | 24.19   | 22.05   | -8.86%                        | -5.90%                     |
| Snam SpA                 | 5.02    | 5.21    | 5.06    | 4.09    | 3.81    | 4.11    | 4.03    | 4.23    | 3.81    | -10.00%                       | -0.03%                     |
| E.ON SE                  | 8.62    | 8.65    | 8.33    | 6.45    | 7.14    | 7.74    | 9.01    | 9.79    | 8.67    | -11.49%                       | 21.43%                     |
| National Grid plc (*GBP) | 9.58    | 9.9     | 10.82   | 9.83    | 9.63    | 10.74   | 9.52    | 8.98    | 7.89    | -12.17%                       | -18.05%                    |
| RWE AG                   | 11.28   | 12.21   | 15.06   | 12.7    | 13.28   | 17.01   | 19.26   | 19.98   | 17.44   | -12.68%                       | 31.38%                     |
| Centrica plc (*GBP)      | 2.11    | 2.16    | 2.33    | 2.15    | 2.26    | 2.04    | 1.98    | 1.59    | 1.37    | -13.67%                       | -39.46%                    |
| Eurostoxx Utilities      | 249.28  | 251.42  | 255.19  | 238.6   | 244.04  | 273.03  | 282.12  | 291.95  | 272.82  | -6.55%                        | 11.79%                     |

<sup>1</sup> On July 11th 2016, REE executed a 4-to-1 stock split. Values in Q3 2016 reflect that split.

Source: Bloomberg; 2018.

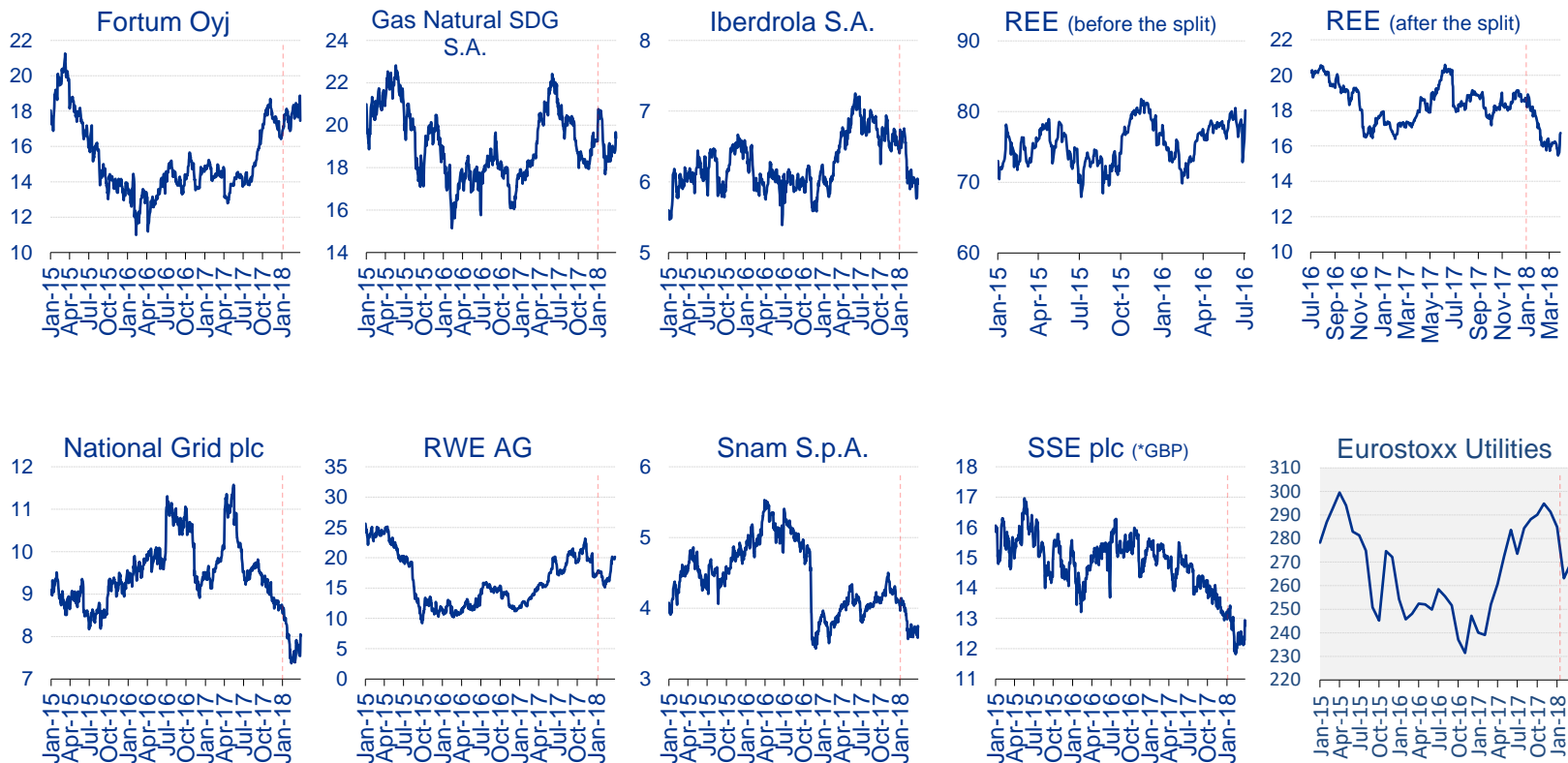
# Share price evolution: individual stocks (1)



Source: Bloomberg; 2018.



# Share price evolution: individual stocks (2)



Source: Bloomberg; 2018.



# Relative valuation per company

|   | TEV (as of March 31)<br>/EBITDA (LTM)<br>▼ | TEV (EUR mill.)<br>(as of March 31) | Market capitalization<br>(EUR mill.)<br>(as of March 31) |
|---|--|-------------------------------------|--|
| <b>Snam S.p.A.</b>                      | 12.2x                                      | 24,647.10                           | 12,747.10  |
| <b>Iberdrola, S.A.</b>                  | 12.0x                                      | 76,013.00                           | 37,276.00  |
| <b>Fortum Oyj</b>                       | 11.8x                                      | 16,727.00                           | 15,502.00  |
| <b>EDP - Energias de Portugal, S.A.</b> | 10.3x                                      | 30,436.90                           | 11,223.70  |
| <b>National Grid plc</b>                | 10.3x                                      | 59,207.70                           | 30,728.60  |
| <b>Enagás, S.A.</b>                     | 10.2x                                      | 10,740.10                           | 5,300.20   |
| <b>Gas Natural SDG, S.A.</b>            | 10.1x                                      | 38,970.00                           | 19,278.00  |
| <b>EDP Renováveis, S.A.</b>             | 9.4x                                       | 12,265.50                           | 6,943.60   |
| <b>Red Eléctrica Corporación, S.A.</b>  | 9.1x                                       | 13,895.80                           | 9,025.30   |
| <b>Enel SpA</b>                         | 8.1x                                       | 111,981.40                          | 50,528.40  |
| <b>SSE plc</b>                          | 8.1x                                       | 23,125.70                           | 14,746.70  |
| <b>CEZ, a. s.</b>                       | 7.6x                                       | 16,369.80                           | 10,828.90  |
| <b>Endesa, S.A.</b>                     | 7.3x                                       | 23,914.80                           | 18,935.80  |
| <b>ENGIE SA</b>                         | 6.2x                                       | 55,268.10                           | 32,375.10  |
| <b>RWE Aktiengesellschaft</b>           | 6.2x                                       | 24,914.60                           | 12,247.60  |
| <b>Electricité de France S.A.</b>       | 5.8x                                       | 72,955.20                           | 34,386.20  |
| <b>Centrica plc</b>                     | 5.2x                                       | 13,827.10                           | 9,079.50   |
| <b>E.ON SE</b>                          | 4.6x                                       | 31,943.70                           | 19,599.70  |
|   | <b>Weighted average: 7.9</b>               | <b>657,203.50</b>                   | <b>350,752.40</b>  |

Source: S&P Capital IQ; 2018



# Leverage and credit ratings

|                                  | LTM Net Debt/ EBITDA | Rating S&P      | S&P financial update | Rating Moody's   | Date       | Rating Fitch | Date       |
|----------------------------------|----------------------|-----------------|----------------------|------------------|------------|--------------|------------|
| Snam S.p.A.                      | 5.9                  | BBB+            | 15 Mar 18            | Baa1             | 12 Dec 16  | BBB+         | 28 Sept 17 |
| Iberdrola, S.A.                  | 5.2                  | BBB-            | 10 Mar 18            | Baa3             | 3 Apr 17   | BBB-         | 14 Dec 17  |
| EDP - Energias de Portugal, S.A. | 5.2                  | A-              | 24 Feb 18            | Baa2             | 20 Dec 16  | A-           | 19 Jun 17  |
| Enagás, S.A.                     | 5.2                  | BBB+            | 28 Feb 18            | Baa1             | 14 Mar 18  | BBB+         | 16 Mar 18  |
| National Grid plc                | 5.0                  | A-              | 10 Nov 17            | Baa1             | 13 Dec 13  | BBB          | 27 Mar 18  |
| Gas Natural SDG, S.A.            | 4.2                  | BBB             | 18 Mar 18            | Baa2             | 8 Aug 17   | BBB+         | 31 Oct 17  |
| EDP Renováveis, S.A.             | 3.5                  | -               | 7 Mar 18             | -                | -          | -            | -          |
| Red Eléctrica Corporación, S.A.  | 3.2                  | BBB+            | 24 Mar 18            | Baa2             | 12 Dec 16  | BBB+         | 19 Feb 18  |
| Enel SpA                         | 3.2                  | A-              | 20 Feb 18            | -                | -          | A            | 18 Sept 17 |
| SSE plc                          | 3.1                  | A-              | 9 Nov 17             | A3               | 3 Oct 16   | BBB+         | 22 Sept 17 |
| Electricité de France S.A.       | 2.5                  | A-              | 18 Feb 18            | A3               | 28 Sept 16 | A-           | 3 Aug 17   |
| CEZ, a. s.                       | 2.4                  | A-              | 27 Mar 18            | Baa1             | 6 Apr 16   | A-           | 8 Dec 17   |
| RWE Aktiengesellschaft           | 2.3                  | -               | 15 Mar 18            | Baa3             | 14 Mar 18  | BBB          | 14 Mar 18  |
| ENGIE SA                         | 2.0                  | A-              | 12 Mar 18            | A2               | 27 Apr 16  | A            | 9 Oct 17   |
| Endesa, S.A.                     | 1.5                  | BBB+            | 23 Feb 18            | Baa1             | 13 May 16  | -            | -          |
| Centrica plc                     | 1.5                  | BBB             | 14 Mar 18            | Baa2             | 14 Mar 18  | BBB+         | 14 Mar 18  |
| E.ON SE                          | 1.5                  | BBB+            | 9 Mar 18             | -                | -          | BBB+         | 19 Feb 18  |
| Fortum Oyj                       | 0.8                  | <b>BBB</b>      | 24 Feb 18            | <b>Baa2</b>      | 15 Feb 18  | BBB+         | 20 Mar 18  |
| <b>Average:</b>                  | <b>3.2</b>           | <b>Mode: A-</b> |                      | <b>Baa1-Baa2</b> |            | <b>BBB+</b>  |            |

Quarterly rating variation: Upgrade Unchanged Downgrade

Source: S&P Capital IQ/Moody's/Fitch; 2018.

# Global M&A overview

## Main trends

The last quarter continued to show a very active M&A market. The **total value of the top 10 deals exceeded EUR80 billion** with a broad diversification of subsectors (oil, gas, infrastructure, renewables, water...).

The **largest deals** during Q1 2018 targeted mostly **US companies** (6 deals in the top 10).

## Main transactions

Acquisition of **Energy Future Holdings Corporation**, a US-based holding of electricity companies by **Sempra Energy** (EUR15,962 million).

The sale of a 40.32 percent stake of **MPLX LP**, a US-based company that owns, operates and develops crude oil, refined product, other hydrocarbon-based product pipelines and other midstream assets to **Marathon Petroleum Corporation** (EUR14,670 million).

Purchase of **Calpine Corporation**, a US-based integrated power generating and power solutions company, by **Calpine Consortium** (EUR14,495 million).

Acquisition of **MPLX Refining Logistics LLC and MPLX Fuels Distribution LLC**, a US-based fuels distribution assets of Marathon Petroleum Corporation and a US-based refining logistics assets of Marathon Petroleum Corporation by **MPLX LP** (EUR6,949 million).

The sale of **Maersk Olie Og Gas A/S**, a Denmark-based oil and gas exploration company, to **Total S.A.** (EUR6,325 million).

# Top 10 M&A operations in Q1 2018 by deal value <sup>(1)</sup>

| Date            | Target company   | Target description   | Target country  | Bidder company                 | Bidder country | Seller company                 | Deal value EUR(m) |
|-----------------|--|--|---|--------------------------------|----------------|--------------------------------|-------------------|
| 8 March 2018    | Energy Future Holdings Corporation                       | US-based holding of electric utility companies   | US  | Sempra Energy                  | US             |                                | 15,962            |
| 1 February 2018 | MPLX LP (40.32 percent stake)                            | US-based company that owns, operates and develops crude oil, refined product, other hydrocarbon-based product pipelines and other midstream assets | US  | Marathon Petroleum Corporation | US             |                                | 14,670            |
| 8 March 2018    | Calpine Corporation                                      | US-based integrated power generating and power solutions company   | US  | Calpine Consortium             | US             |                                | 14,495            |
| 1 February 2018 | MPLX Refining Logistics LLC; MPLX Fuels Distribution LLC | US-based fuels distribution assets of Marathon Petroleum Corporation; US-based refining logistics assets of Marathon Petroleum Corporation         | US; US  | MPLX LP                        | US             | Marathon Petroleum Corporation | 6,949             |
| 8 March 2018    | Maersk Olie Og Gas A/S                                   | Denmark-based oil and gas exploration company  | Angola, Algeria, Brazil, Denmark, UK, Kazakhstan, Kenya, Kyrgyzstan, Norway, US | Total S.A.                     | France         | A.P. Moller - Maersk A/S       | 6,325             |

Source: Mergermarket; 2018.



# Top-10 M&A operations in Q1 2018 by deal value (2)

| Announced date   | Target company  | Target description  | Target country              | Bidder company   | Bidder country                   | Seller company  | Deal value EUR(m) |
|------------------|---|---|-----------------------------|--|----------------------------------|---|-------------------|
| 22 January 2018  | Spectra Energy Partners, LP (35.68 percent stake)         | US-based company engaged in the transportation of natural gas through interstate pipeline systems, and the storage of natural gas in underground facilities                         | US                          | Enbridge Inc   | Canada                           |   | 6,001             |
| 31 January 2018  | Hindustan Petroleum Corporation Ltd (51.11 percent stake) | India-based state owned oil refining and marketing company  | India                       | Oil and Natural Gas Corporation Limited  | India                            | Government of India   | 5,416             |
| 15 February 2018 | ENGIE E&P International S.A. (70 percent stake)           | France-based company engaged in exploration and production activities in gas field  | France, Netherlands, Norway | Neptune Oil & Gas Limited  | UK                               | ENGIE SA  | 4,610             |
| 19 January 2018  | Equis Energy  | Singapore-based renewable energy company engaged in operation, construction and development of power assets across Australia, Japan, India, Indonesia, the Philippines and Thailand | Singapore                   | Public Sector Pension Investment Board; Global Infrastructure Partners; China Investment Corporation | China, Australia, UK, US, Canada | Equis Pte. Ltd  | 4,251             |
| 9 February 2018  | Alta Mesa Holdings, LP                                    | US-based company engaged in acquisition, exploitation, exploration, development and production of oil and natural gas properties  | US                          | Alta Mesa Resources, Inc.  | US                               | HPS Investment Partners, LLC; Bayou City Energy Management, LLC | 2,864             |

Source: Mergermarket; 2018.



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