



European Power & Utilities Report

Insights on key trends in the European Power
& Utilities Industry



KPMG Global Energy Institute

Q4 2021



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1 Executive summary

In 2021, power prices in Europe recorded a steep gain due to increased electricity demand as the economies recovered from COVID-19. The increasing prices for coal and natural gas, infrastructure challenges, and geopolitical tensions in the region also provided an upward push to prices.

As a result, the governments launched multiple interventions, including policy changes, tax cuts, subsidies, and price limits, in 4Q21 to protect consumers from the increasing energy prices.

The increasing prices have also accelerated the need for power market reforms in Europe and diversification of energy and fuel supplies to extend the bargaining power to purchasing countries.

In 4Q21, most KPMG power and utility (P&U) 20 companies reported an increase in revenue and share prices but a decrease in EBITDA. The increasing focus of these companies on renewable capacity development continued in this quarter, with increased activity around mergers, acquisitions, and new capacity additions.

The deal value of the European power and utilities sector increased by 25 percent (on a q-o-q basis) to EUR25.4 million, thanks to the increased activity in the chemicals and power utilities sub-sectors. The top five P&U M&A deals during 4Q21 accounted for 50 percent (EUR12.6 billion) of the overall deal value, marking the continuity of a well-established trend in the P&U sector.



2 Prices and margins

Electricity price evolution: Geopolitical tensions impacting the price of natural gas

Wholesale electricity prices have been on an upward trajectory in Europe since last year, with the majority of countries registering record levels due to a multitude of factors, including:



Post-COVID economic revival, electricity shortage, increasing coal and natural gas prices (triggered by higher demand in Asia that led to low liquified natural gas (LNG) deliveries to Europe), infrastructure challenges and deflated LNG supplies from Russia.

- The import prices of energy from December 2020 to December 2021 jumped by 115 percent, while the domestic producer prices surged 73 percent¹.

Natural gas plays a critical role in defining electricity prices in Europe. The geopolitical tensions have severely impacted natural gas prices, leading to governments taking measures to control power prices, from cutting taxes on energy to subsidizing stressed households.

High natural gas prices have tightened the fuel supply in Europe, leading to an energy shortage, which is affecting electricity prices differently in different countries.

- In December 2021, countries dependent on gas and coal-based electricity experienced a massive rise in electricity prices that rose to EUR282.14/MWh in Switzerland (its highest value) and EUR277.54/MWh in Italy. Countries such as Sweden, which depend on hydropower and nuclear energy, saw limited price growth during the period.

The increasing prices have led to an enhanced need for power market reforms in the region, including changes to EU rules to allow governments to regulate end-user prices, and diversification of energy and fuel supplies, extending increased bargaining power to purchasing countries².

Germany

The electricity prices in Germany have been witnessing a steady growth for the last two quarters and the trend continued in 4Q21. Germany witnessed its highest average wholesale electricity prices of EUR220.96/MWh in December 2021 since 2019. High heating demand due to cold winters, an increase in the price of natural gas and coal, and a decrease in wind power generation due to low speeds led to a spiral in electricity prices.

In 4Q21, the power base spot prices in Germany varied between EUR89.1/MWh and EUR292.5/MWh³.

¹ Energy prices on the rise in the euro area in 2021, Eurostat, published on 10 February 2022

² Week 49 report, Energy market price, published 7 December 2022

³ "Energy- Germany", Refinitiv database

Figure 1: Germany power generation and distribution, output price index (2015 = 100), 1Q19 to 4Q21

Source: Oxford Economics, sourced via EMIS



The UK

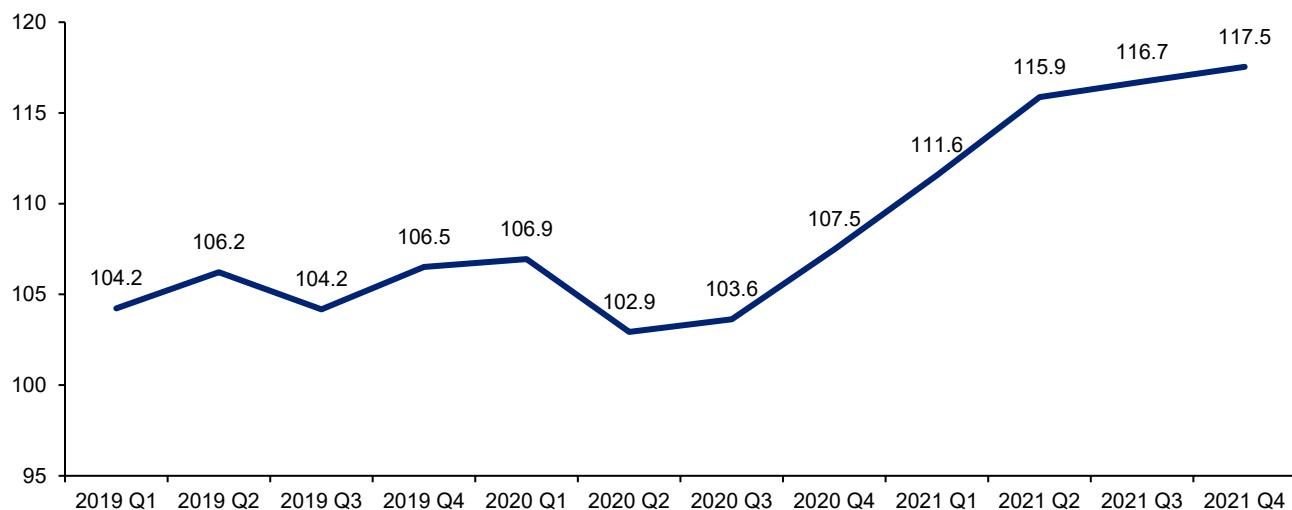
The UK, driven by the rising wholesale energy costs, increased its electricity price cap for 4Q21 and 1Q22 by 12 percent compared with the previous cap price⁴. As a result, the output price index for power generation and distribution touched 117.5 in the country in 4Q21.

- The prices were also impacted by the increasing gas prices, low renewable generation, and disruption in the services of Interconnexion France-Angleterre (IFA) interconnector between France and the UK.

Although the country has increased the electricity price cap, it also implemented measures, including 'warm home discount' and 'cold weather payment' to protect vulnerable sections of the society against increasing energy costs. Warm home discount provides reduced prices to people eligible for pension credit and low-income groups (meeting energy supplier's criteria) and provides a one-time discount of GBP140 on their electricity bill between October 2021 and March 2022.

The government is also providing the cold weather payment of GBP25 for each 7-day period of very cold weather⁵ between November and March 2022 to people with support for mortgage interest.

Figure 2: The UK power generation and distribution, output price index (2015 = 100), 1Q19 to 4Q21



Source: Oxford Economics, sourced via EMIS

⁴ Rising energy costs: the impact on households, pensioners and those on low incomes, House of Lords Library, published on 31 December 2021

⁵ Very cold is defined as time period in an area where the average temperature is forecasted to be 0° Celsius or below for more than 7 consecutive days

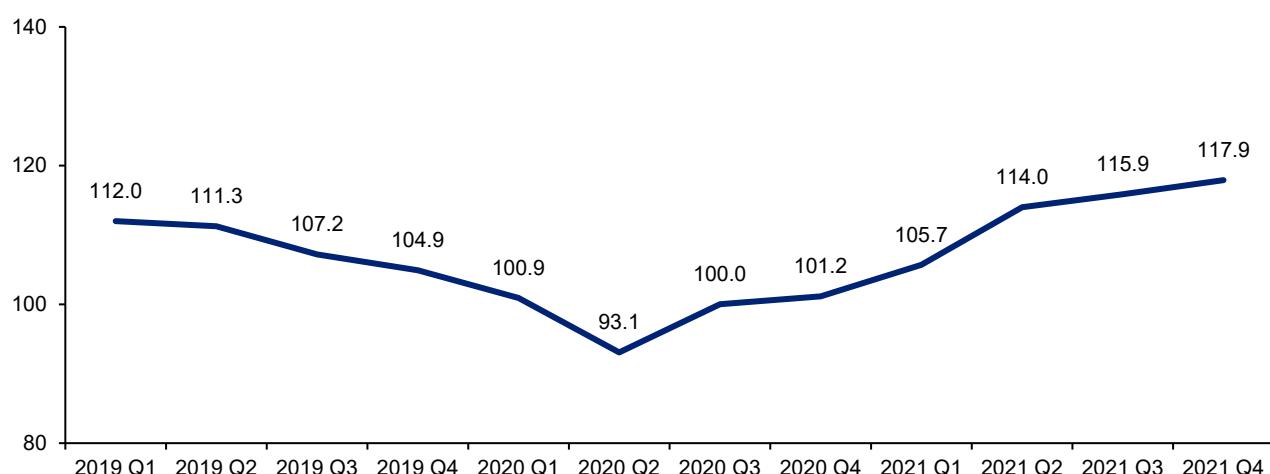
Italy

In 4Q21, Italy's average output price index increased by 1.7 percent to 117.9, which was similar to the growth reported in 3Q21. Although the output price index did not suddenly rise, the average electricity wholesale prices increased from EUR158.8/MWh in September to EUR277.5/MWh in December 2021⁶, driven by high natural gas prices.

- In 4Q21, Italy's weekly energy spot prices had a maximum and minimum value of EUR338.5/MWh and EUR190/MWh, with prices spiking in the second and third weeks of December before sliding back into the average range⁷.
- To combat rising prices of natural gas, the country witnessed a shift in preference for coal-based electricity generation in the second half of 2021. As a result, the output from coal-fired plants increased by 3 percent while gas-based generation declined by 5 percent y-o-y⁸.

To check the rise in retail energy bills, Italy has allocated a budget of EUR3 billion. It has also implemented measures, including the removal of system charges on electricity bill, cutting down taxes, and enhanced power and gas bonuses for low-income customers⁹.

Figure 3: Italy power generation and distribution, output price index (2015 = 100), 1Q19 to 4Q21



Source: Oxford Economics, sourced via EMIS

France

In 4Q21, France's power output price index, which has been steady for the last two quarters, witnessed a slight increment to 124. The wholesale electricity prices continuously increased during the quarter, touching EUR274.51/MWh in December¹⁰, while the energy spot prices grew by 22.8 percent and reached a maximum of EUR345.5/MWh in mid-December¹¹.

The rise in prices was supported by uncertainty related to the downtime in two nuclear energy reactors, limited natural gas exports from Russia and cold weather in the region. To avoid any supply disruptions, the French government allowed an exception to two coal-fired power plants (Cordemais and Emile Huchet) to increase output in January and February 2022.

In November 2021, France awarded 80 ground-based solar projects with a tender of 636.7 MW capacity at an average price of EUR 56.65/MWh, which was 6 percent less than the previous auction¹².

⁶ Average monthly electricity wholesale price in Italy, Statista, published on 14 February 2021

⁷ "Energy- Italy", Refinitiv database

⁸ Electricity Market Report, IEA, 13 January 2022

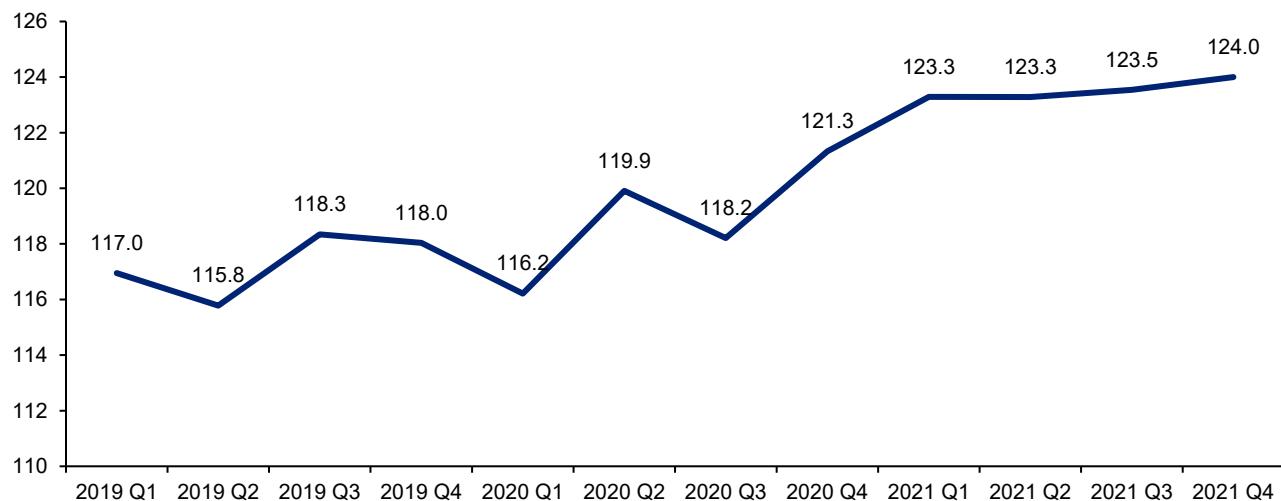
⁹ Italy sets aside more than 3 bln euros to curb energy bills, Reuters, published on 23 September 2021

¹⁰ Average monthly electricity wholesale price in France, Statista, published on 14 February 2022

¹¹ "Energy- France", Refinitiv database

¹² French Market analysis, Haya Energy solutions

Figure 4: France power generation and distribution, output price index (2015 = 100), 1Q19 to 4Q21



Source: Oxford Economics, sourced via EMIS

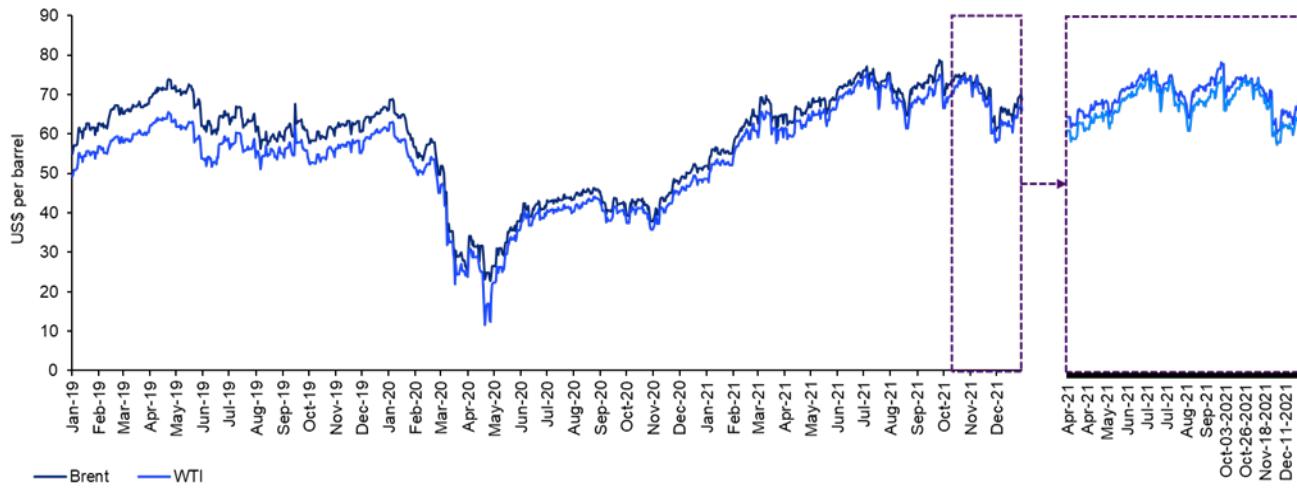
Natural gas price evolution

Natural gas and coal contribute the major share of electricity generation, but the continuous increase in prices and shallow reserves in the region are riling up the electricity suppliers. Russia, the main supplier of natural gas to Europe, kept its exports low as it needed to replenish its own depleted stocks in view of the geographical standoff.

In 4Q21, the price of Brent crude oil ranged between US\$62 per barrel and US\$75 per barrel, while that of crude oil West Texas Intermediate (WTI) varied between US\$65 per barrel and US\$72 per barrel. The average Brent and WTI prices were US\$69.8 per barrel and US\$67.5 per barrel, respectively, in line with the previous quarter.

The price increased in October and November 2021 due to optimism around post-COVID recovery and the increased demand emanating from the ongoing global energy crisis. However, the onset of a new COVID variant in Europe and the increased output from OPEC+ pushed the prices to their lowest quarterly level in the first week of December 2021.

Figure 4: Crude oil prices, January 2019 to December 2021



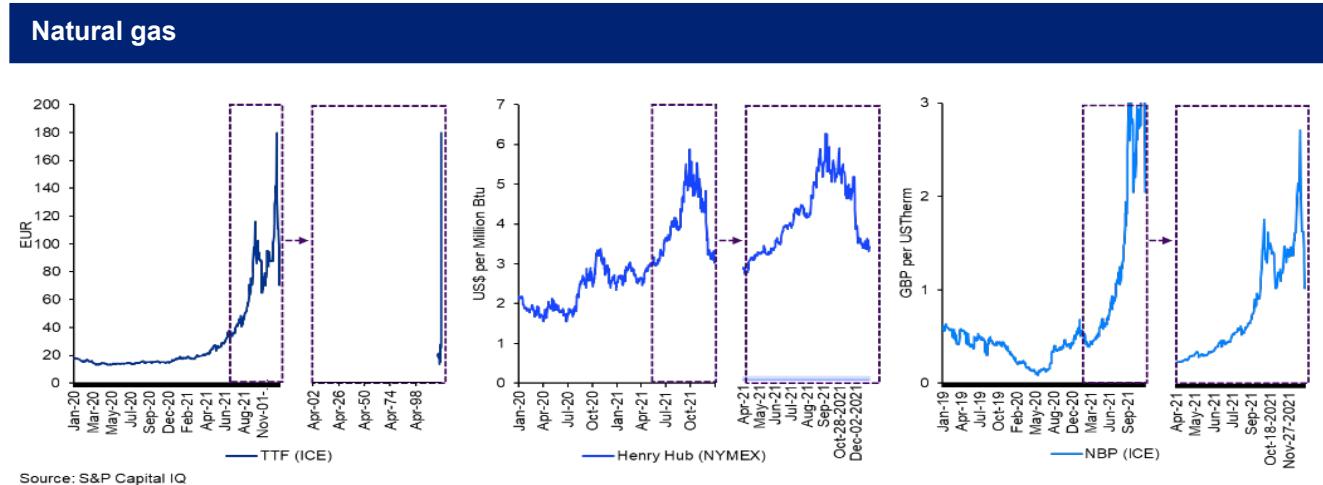
Source: S&P Capital IQ

The natural gas TTF prices continued to rise in 4Q21, increasing by 95.6 percent compared with 3Q21 to EUR94.9/MMBTU. The prices varied between EUR64.9/MMBTU and EUR179.9/MMBTU and witnessed a sudden rise in the second and third weeks of December 2021 due to Russia and Ukraine turmoil before settling at the average price in the last week.

The Henry Hub prices averaged EUR4.2/MMBTU in 4Q21, 2.3 percent less than the last quarter. Prices remained stable in October and November before falling in the first week of December due to the expectation of a milder winter and increased output in the US¹³.

The Natural Gas NBP averaged EUR2.93/MMBTU, skyrocketing 144 percent over 3Q21. Overall, prices remained near average, except for a sudden rise and fall in mid-December; prices ranged from EUR2.04/ MMBTU to EUR5.4/MMBTU in the quarter.

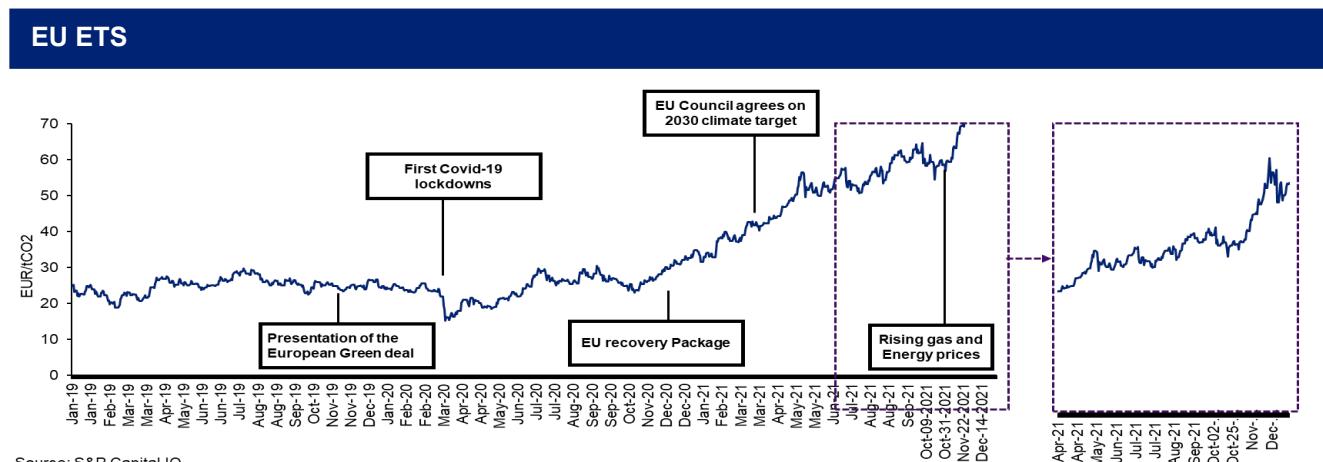
Figure 5: Natural gas prices, January 2019 to December 2021



Carbon and coal price evolution

The average carbon price for 4Q21 was valued at EUR68.3 per tonne CO₂, with the maximum and minimum values reaching EUR88.9 to EUR54.5, respectively. The price remained flat for October and the first week of November before increasing due to cold weather in the region, a shortage in the fuel market, and the German government's push for green ambitions (which plans to increase the floor prices to EUR60 per tonne). It reached its maximum value for the quarter on 8 December due to the expiry of options contracts in Europe and increased financial investment from speculative traders.

Figure 6: Carbon price, January 2019 to December 2021



Source: S&P CapitalIQ

¹³ NYMEX Henry Hub drops to 12-week low, S&P Global, 30 November 2021

Coal (Richard Bay) prices, which have been continuously increasing since July 2020, recorded their highest at US\$214.8/mt in October 2021 before falling to US\$102.1/mt in December 2021. The prices in Europe were negatively impacted by China's announcement to strengthen its coal production.

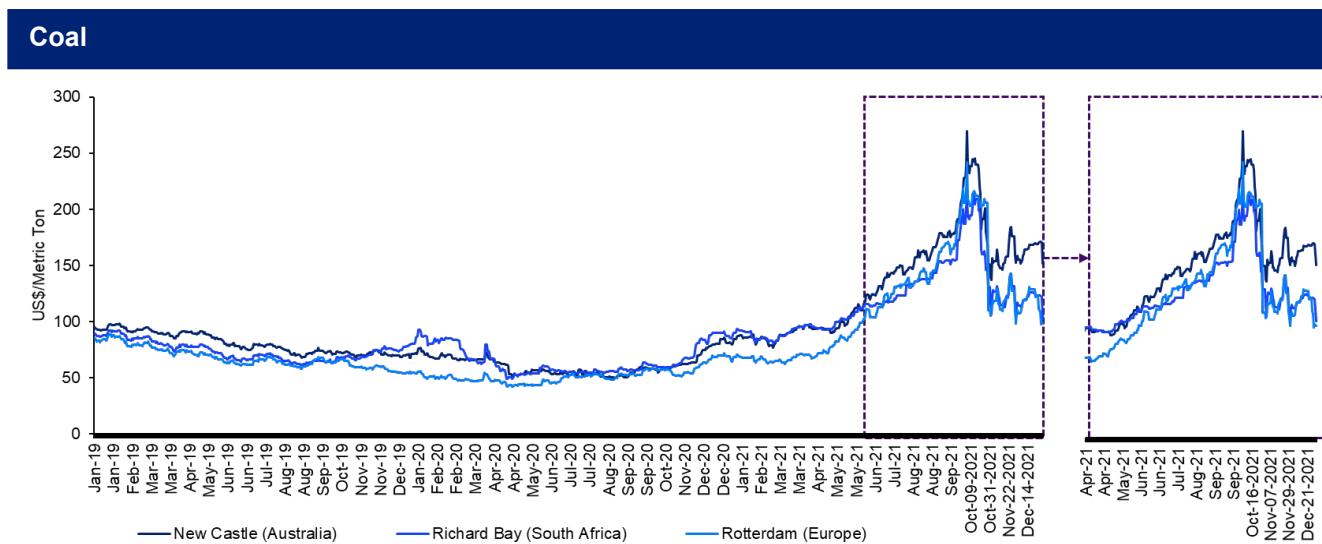
In 4Q21, Australian and South African coal prices decreased after clocking in an upward movement for 1 year.

- Australian coal reached its maximum value of US\$269.5/mt in October but slipped to US\$137.1/mt in early November. Prices stabilized at US\$140/mt to US\$170/mt (averaging US\$179.6/mt) for the period. In 4Q21, the average Australian coal price increased by 10.1 percent compared to 3Q21.
- Prices in South Africa touched their Q4 high of US\$242.1/mt in October 2021; prices declined to US\$97.1/mt in December 2021. It averaged US\$145.7/mt, up 4.07 percent from 3Q21.

Coal API2 (European coal) prices averaged US\$141.8/mt in 4Q21, showing a 3.7 percent decline compared with 3Q21. The minimum and maximum price range settled at US\$102.1/mt in December and US\$214.8/mt in October.

The prices witnessed an increase in the last 2 weeks of December due to the tight supply and a variant gas market (leading to a preference for coal). The closure of French nuclear plants increased the use of coal to support electricity production, supporting the price increase.

Figure 7: Coal price, January 2019 to December 2021



Source: S&P Capital IQ, February 2022

Renewable

EU generated a record 1,068 TWh¹⁴ of electricity from renewable sources in 2021 — a 1 percent increment over last year and accounting for a 37 percent share in the total electricity production in the region.

- Solar and wind output peaked at 547 TWh in 2021, 17 percent higher than in 2019 and contributed 19 percent to EU electricity generation.
- The Netherlands, Greece and Spain powered solar and wind growth in the EU, with each country recording nearly a 10-percentage-point jump in the solar and wind market from 2019 to 2021 after posting modest growth from 2016 to 2018.

Major P&U companies focused on renewable capacity development and resorted to diverse mechanisms, including mergers, acquisitions, and new capacity installation, to meet the agenda. The last quarter of 2021 also witnessed signing of new contracts for sale of renewable energy between P&U companies and global large-scale companies.

- In December 2021, OVHcloud signed a 15-year agreement with EDF Renewables to supply electricity to its data centres in France. The electricity will be provided using EDF's Renewables 50 MW solar power plant, which is expected to be commissioned by 2024 in France¹⁵.

¹⁴ European Electricity Review 2022, RE Global

¹⁵ EDF Renewables is to supply OVHcloud with solar-generated renewable electricity to power a number of its data centres in France, OVHcloud

- In November 2021, Ørsted A/S established a partnership to supply 55 MW of solar capacity from Sparta Solar plant in Texas to Johnson & Johnson¹⁶.
- In November 2021, Enel-owned Morro do Chapéu Sul II wind farm in Brazil, with a capacity of 353 MW, started commercial operations¹⁷. In December, Enel Green Power Brasil started working on four wind farms and one solar plant in Brazil, which will have a combined capacity of 1.3 GW¹⁸.

The European Commission, in the Fit for 55 package, proposed to increase the renewable energy target of EU from 32 percent¹⁹ to at least 40 percent by 2030. And continuing its commitment towards a clean future and ensure energy security, the EU announced the launch of 'RePower EU' in March 2022 to increase the share of renewable energy and decrease its reliability on Russian gas supply. It will focus on diversifying the energy supply and supporting clean energy transition by adding more renewable gases to the energy mix and replacing natural gas with renewable gases²⁰.



¹⁶ Ørsted enters into power purchase agreements with Johnson & Johnson in Ireland and the US, Ørsted

¹⁷ Enel Green Power begins operation of 353-MW wind farm in Brazil, Renewable now

¹⁸ Enel Green Power starts construction of 1.3 GW of new renewable capacity in Brazil, Enel

¹⁹ Renewable energy targets, European Commission

²⁰ Press conference on the REPowerEU Communication, European Commission, as accessed on 5 April 2022

Regulatory developments in 4Q21: Key takeaways

In 4Q21, the government measures and initiatives were focused on **protecting consumers** from the increasing energy prices in the region. As a result, the governments introduced multi-layered policy measures, such as tax cuts, subsidies and price limit, to put off the crisis.

- EDF has acknowledged the French government measures aimed at limiting the increase in electricity tariffs for 2022. It will sell cheaper nuclear power to smaller competitors (regulated access to historic nuclear energy, or ARENH mechanism) at a fixed price of EUR46.2/MWh (increasing from EUR42.0/MWh). It will also increase the nuclear electricity volumes from 100 TWh to 120 TWh in 2022.
- The government initiatives will limit the increase in price to 4 percent instead of the anticipated 35 percent.
- In October 2021, Spain introduced 'Royal Decree-Law 23/2021,' which focuses on urgent measures in the field of energy for the protection of consumers and introduction of transparency in the wholesale and retail markets of electricity and natural gas.
- In December 2021, the Italian government published its Budget Law 2022 (Law n. 234), extending the validity of the 'Superbonus 110' incentive scheme, which is a tax deduction mechanism for energy upgrading and/or seismic retrofitting of buildings up to a maximum of 110 percent.

The policymakers continued their focus on renewable energy development and transition towards sustainability by supporting the establishment of new sources, increasing investment and revising the rules in favour of renewable energy.

- Germany introduced an Ordinance for the revision of biomass electricity sustainability. It transposes sustainability criteria and criteria for greenhouse gas savings in electricity generation and biofuel production from biomass from the European parliament and council into national law.
- The UK introduced the 'heat and buildings strategy' in October, setting the ways it will decarbonize homes, and commercial, industrial and public sector buildings, as part of setting a path to net-zero by 2050.
- In November, the UK government announced minimum funding of GBP20 million per year for tidal energy in the CfD. It will invest in tidal stream electricity as part of its fourth allocation round of the Contracts for Difference scheme.

For more details, please refer to the Appendix section titled: Regulatory developments in the European P&U sector, 4Q21.

3 Financial performance

EUROSTOXX index, share prices and credit ratings: Increase in EUROSTOXX index and growth in quarterly and yearly average share prices in 4Q21

The index increased in the first half of the quarter as economic activities continued to resume and the risks of corporate default and bank losses reduced, reaching a maximum value of 487.72 on 17 November 2021²¹. However, prices started to decrease post-mid-November, largely due to the tensions around the new COVID variant. The index averaged 469.8 during the quarter, 1.5 percentage points more than the last quarter.

Quarterly average share prices of **KPMG P&U 20 Index** companies:

- In 4Q21, 15 of the 20 companies witnessed an increase in share prices on a q-o-q basis. VERBUND, CEZ and Suez SA witnessed the highest growth in share prices among their peers, clocking in growth of 109 percent, 73 percent and 59 percent, respectively.
- On a y-o-y basis, 14 of the 20 companies witnessed an increase in share price, with CEZ (73 percent), Veolia Environment S.A (57 percent) and VERBUND AG (66 percent) reporting the largest increment.

(For more details, refer to share price evolution: Overview (4Q21) in Appendix.)

Figure 9: EURO STOXX utilities index, January 2019 to December 2021



Note(s):
(a) The EURO STOXX sector indices use the market standard ICB Industry Classification Benchmark; companies are categorized according to their primary source of revenue. This categorization is then used for accurate classification of companies in their respective business environments.
(b) The EURO STOXX utilities index comprises the following 20 P&U companies: IBERDROLA, ENEL, E.ON, ENGIE, RWE, EDP ENERGIAS DE PORTUGAL, VEOLIA ENVIRONNEMENT, TERNA, FORTUM, AND ENDESA, RED ELECTRICA CORPORATION, Naturgy Energy Group, EDF, SUEZ ENVIRONNEMENT, UNIPER, ELIA GROUP, VERBUND, HERA, ITALGAS, A2A

Source(s): CapitalIQ, 2022

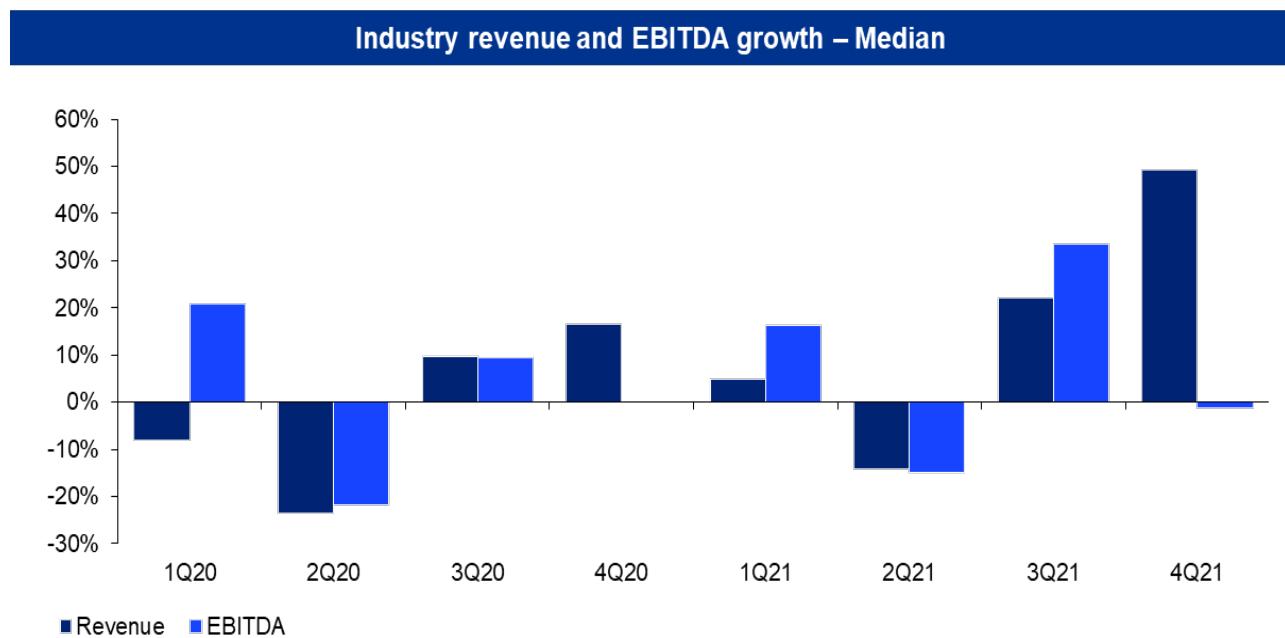
Financial performance of the industry

For a detailed financial performance study of the European P&U industry, KPMG has shortlisted 20 P&U companies based on revenue and market capitalization — collectively known as KPMG P&U 20. Revenue of these companies witnessed an increase in 4Q21, like 4Q20, with median revenue growing at a rate of 49.2 percent because of the increase in average electricity prices sparked by a gain in demand due to cold weather.

The median capital expenditure for the 20 P&U companies increased by 43 percent and the median enterprise value increased by 6.6 percent, while the median debt decreased by 2 percent q-o-q, showing that financially the quarter has been positive for the industry.

²¹Financial Stability Review, November 2021, European Central Bank

Figure 9: Revenue and EBITDA: Steady revenue growth in 4Q21

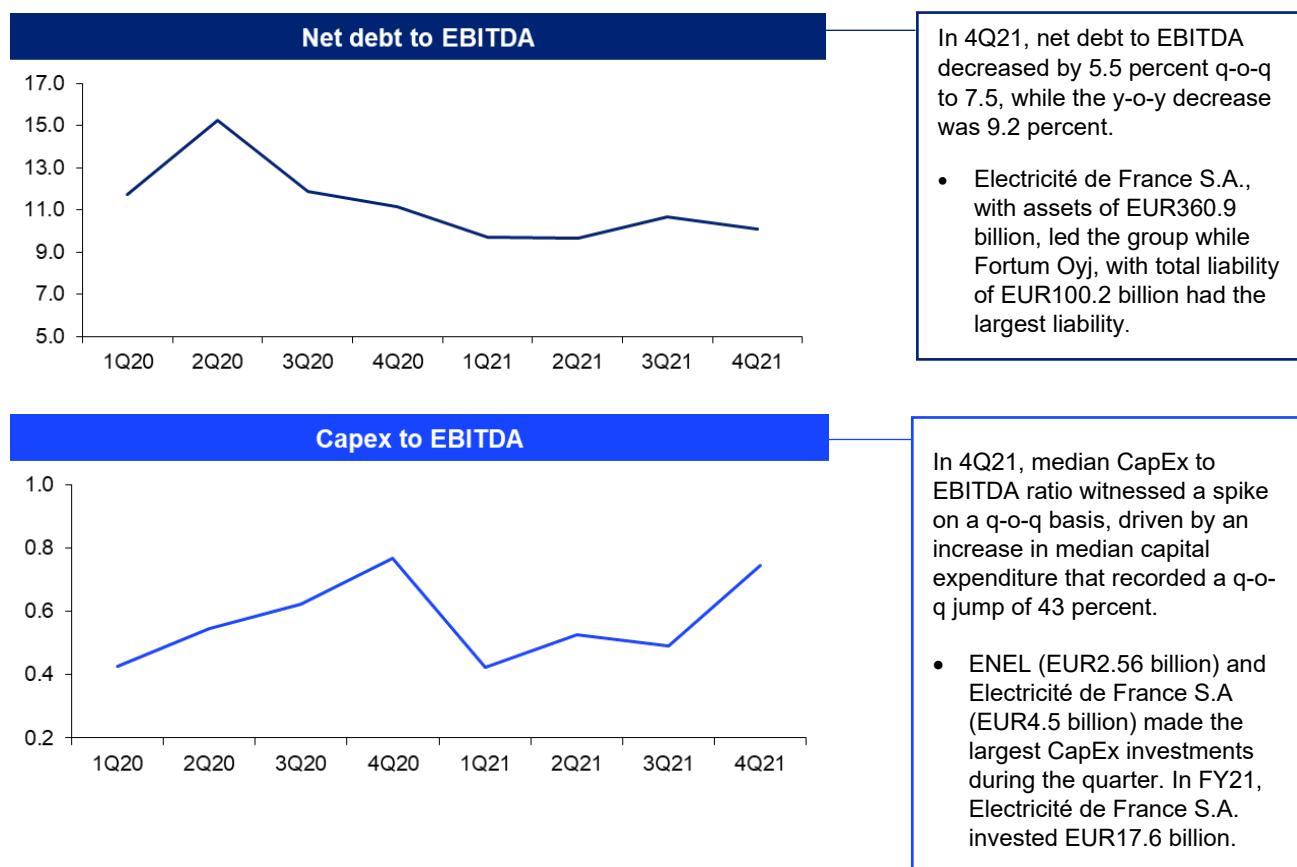


Note(s): (a) KPMG P&U 20 includes 20 European P&U companies: CEZ, E.ON SE, Energias de Portugal (EDP), Electricité de France (EDF), EnBW Energie Baden-Württemberg, Endesa, Enel, Engie, Fortum Oyj, Iberdrola, National Grid, Naturgy Energy Group, Ørsted A/S, Public Joint Stock Company Inter RAO UES (Inter RAO), RWE Aktiengesellschaft, SSE, Suez SA, Uniper, Veolia Environment and Verbund AG. (b) 4Q 2021 median data doesn't include data for Iberdrola SA, Suez SA, and Public Joint Stock Company Inter RAO UES, as they report half-yearly financial performance.

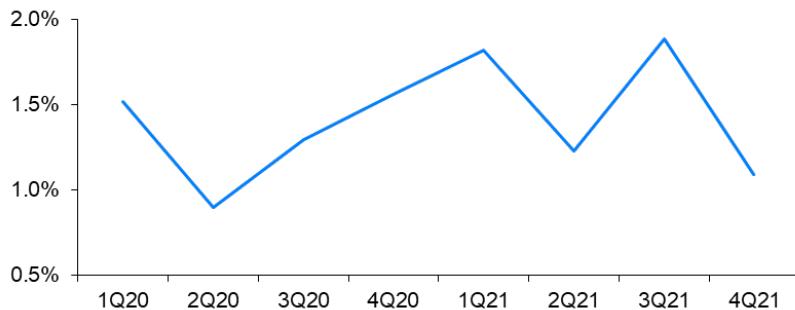
Source(s): CapitalIQ, 2022

Figure 10: Industry revenue and EBITDA quarterly growth (based on median values) of KPMG P&U 20

Other key financial metrics: P&U players reported a decline in Net Debt and CapEx

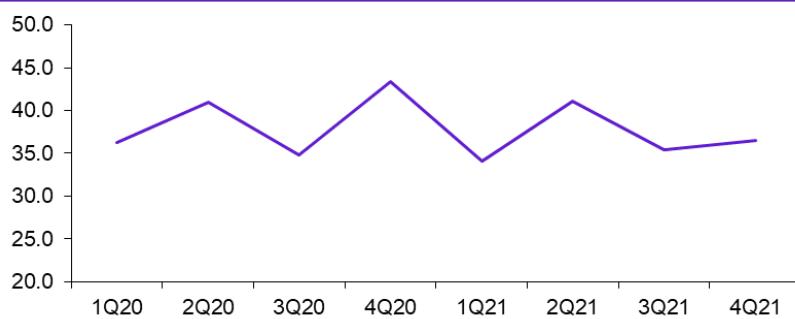


Return on capital employed



The value of Median ROCE (Return on Capital Employed) of KPMG P&U 20 companies in 4Q21 remained similar to the last quarter and grew by only 1 percent.

TEV/EBITDA



Median TEV/EBITDA of KPMG P&U 20 companies stood at 36.46 in 4Q21, 3 percent more than 3Q21 (35.4) but 15.9 percent less than 4Q20 (43.4).

- Ørsted, Fortum and VERBUND maintained their status of being the P&U companies with high valuations in the market (based on TEV/EBITDA) of P&U companies.

Note(s): (a) Net debt = Total debt - Total cash and short-term investments; Return on capital employed = EBIT/(Total assets - Current liabilities); TEV = Market capitalization + Book value of total debt + Book value of preferred stock + Book value of minority interest - Cash and short-term investments.

(b) Industry median has been considered for the above key financial metrics, due to wide variations in financial data of KPMG P&U 20 companies.

(c) 4Q 2021 median data doesn't include data for Iberdrola, S.A., ENGIE SA, Public Joint Stock Company Inter RAO UES, Engie and Suez, as their quarterly financials were not available.

Source(s): CapitalIQ, 2022

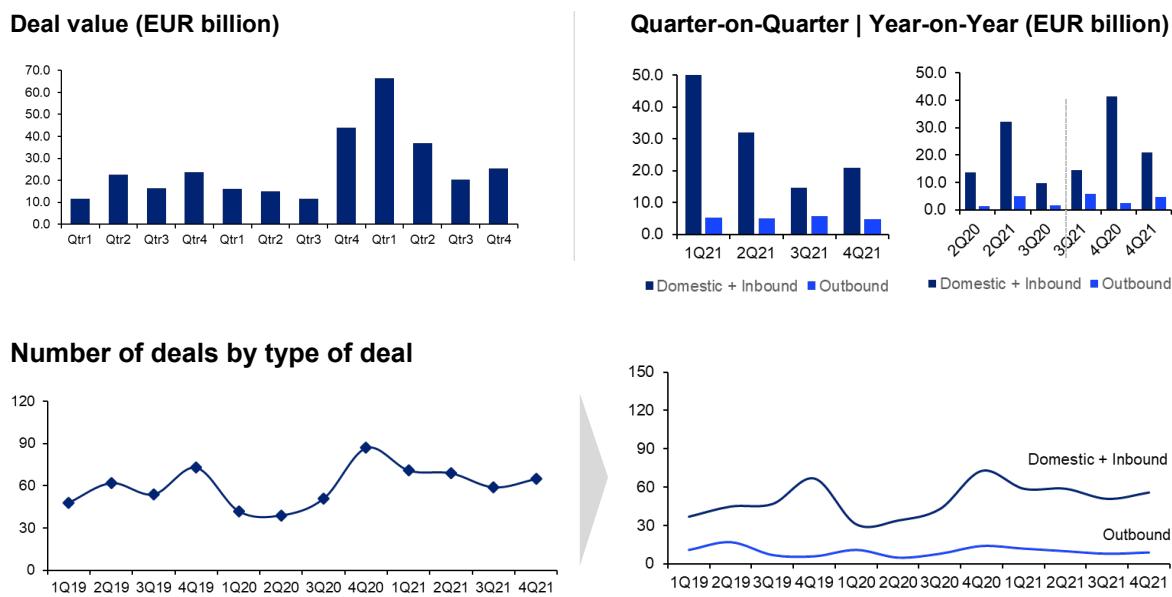
4 Mergers and acquisitions

4Q21 M&A performance

The European power and utilities sector saw an increase of 25 percent in the total deal value in 4Q21 over the last quarter, largely propelled by high activity in the chemicals and power utilities sub-sectors. **The total deal value increased from EUR20.3 billion in 3Q21 to EUR25.4 billion in 4Q21. In 4Q21, Energy was the dominant target sub-sector, clocking in a deal value of EUR 21.9 billion, owing to the transition of companies from non-renewable to renewable energy in alignment with COP26 commitments.**

The top five P&U M&A deals during 4Q21 accounted for 50 percent (EUR12.6 billion) of the overall deal value. The top 15 deals, on the other hand, touched EUR19.6 billion in value during the quarter, making up for 77 percent of the total deal value. Expansion into the renewables business and need for decarbonization continue to drive mergers and acquisitions in the power and utility industry.

Figure 12: Number and value of M&A deals in the European P&U sector, 1Q19 to 4Q21



Key inbound deal

G+E GETEC Holding GmbH sold its energy services and connected supply system services for a reported valuation of EUR4 billion. KKR, Blackstone, JP Morgan Asset Management and a consortium consisting of Omers and PGGM participated in the transaction, with the acquisition focusing on contracted power, utilities and transportation.

Key outbound deal

Switzerland-based Vitol Group completed the acquisition of the UK-based but Africa-focused petroleum products distributor and marketer, Vivo Energy plc, for EUR1.6 billion. Vitol Group operates in crude oil trading, exploration, shipping and storage activities.

Note(s): (a) M&A deals include Domestic, Inbound and Outbound deals. Domestic M&A deals are those for which both target and buyer companies are within Europe; Inbound M&A deals are those for which target company is in Europe but the buyer company is outside Europe; Outbound M&A deals are those for which the target company is outside Europe and buyer company is in Europe. Criteria selected for Outbound: Target Company - Is not Europe, Buyer Company - Europe.

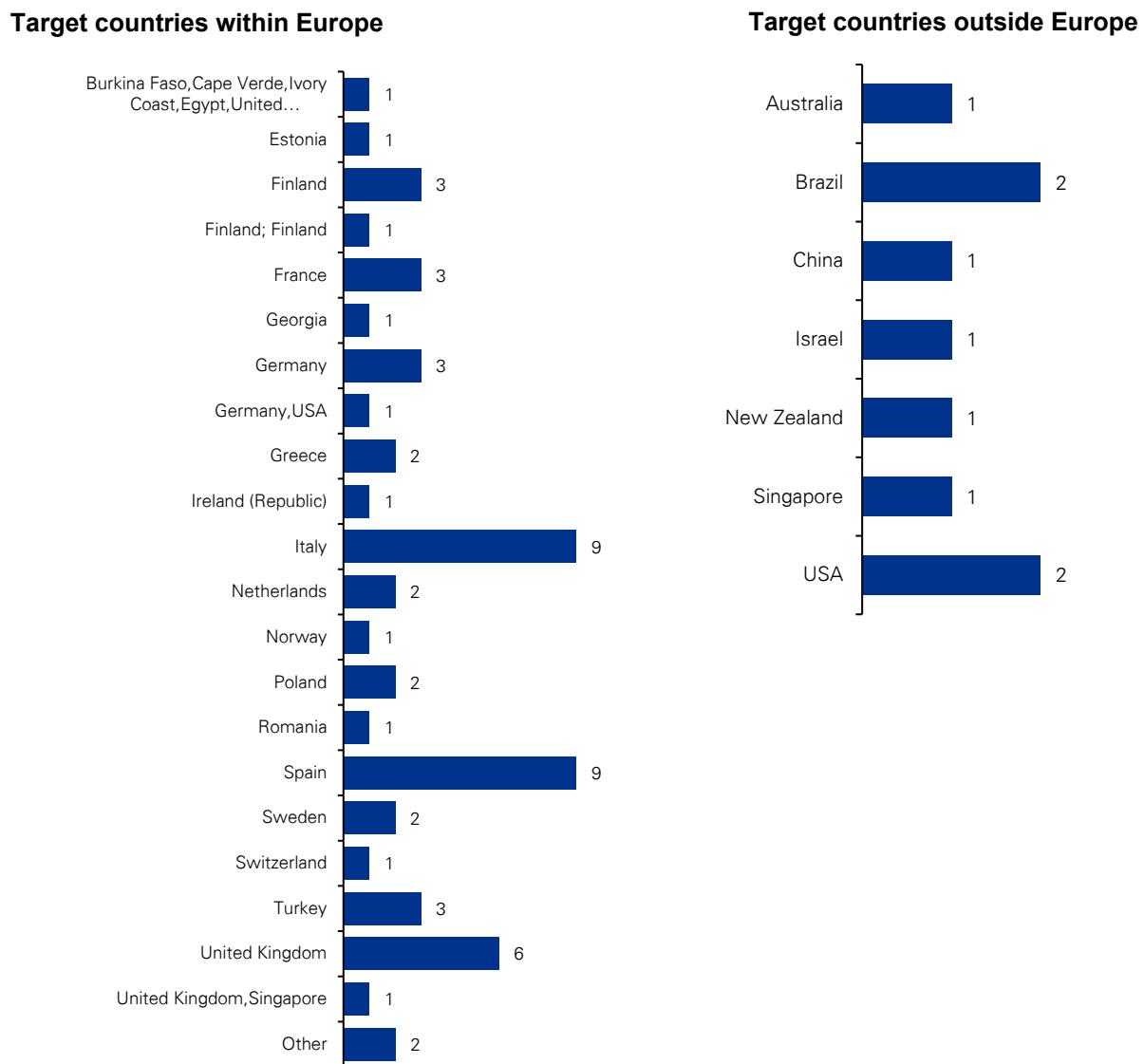
(b) Deals with undisclosed deal value not included.

Source(s): MergerMarket, 2021

Key domestic deal

Alberta Investment Management Corporation announced a EUR2 billion deal to divest 97.33 percent of its ownership stake in Eolia Renovables de Inversiones to ENGIE and Credit Agricole Assurances. The deal will help Credit Agricole Assurances and Engie capitalize on the renewable power production capacity of Eolia. The acquisition will support Credit Agricole Assurances to double its investment in renewable energy and Engie to reach its goal of 50 GW of renewable capacity by 2050.

Figure 13: Target countries by total number of deals, 4Q21



Note(s): Deals with undisclosed deal value not included; Target geographies have been considered as per the data available by MergerMarket, wherever possible fair assumption has been taken as per the deal description in database.

Source(s): MergerMarket, 2021

High renewable generation capacity with government subsidies and a rise in electricity demand propelled a high amount of deal activity in Q4. Spain and Italy, with 18 deals, contributed to about 27.6 percent of the total deal value. Other major target countries within Europe were the UK, Germany, France and Finland. For outbound deals, the US and Brazil remain the primary target countries for the European P&U companies.

The way forward

Energy transition will dominate the power and utility sector going forward. With 46 countries, including European nations such as the UK and Germany, agreeing at the COP26 conference to phase out coal, a lot of investments are expected to flow into the renewable energy sector.

Europe's ambitious environmental targets will lead to the closure of more and more thermal and nuclear baseload generation plants, which renewables will not be able to fully replace in the short term. With the Russia-Ukraine conflict as a result, European power companies are expected to pace up their energy transition efforts, funneling investments into renewable energy and intensifying domestic and inbound deal activity.



Appendix

[Top 15 M&A deals in European P&U sector, 4Q21](#)

[Share price evolution, 4Q21](#)

[Credit ratings, as of February 2022](#)

[Regulatory developments in the European P&U sector, 4Q21](#)

Top 15 M&A deals by deal value, 4Q21

Announced date	Target company	Target description	Target country	Bidder company	Bidder country	Seller company	Deal value EUR(m)	Deal type
11/19/2021	G+E GETEC Holding GmbH (100% Stake)	It offers custom-made sustainable energy solutions to real estate and industrial companies	Germany	The Infrastructure Investments Fund	USA	EQT Infrastructure Fund	4,000	Inbound
10/20/2021	Falck Renewables SpA (60% Stake)	Italy-based company that develops, designs, builds and manages plants of wind power generation, solar, biomass and waste to energy	Italy	The Infrastructure Investments Fund	USA	Falck SpA	3,381	Inbound
11/11/2021	Eolia Renovables de Inversiones, S.C.R., S.A. (97.33% Stake)	Spain-based company engaged in the development, construction and operation of wind farms and solar photovoltaic plants	Spain	ENGIE SA; Credit Agricole Assurances SA	France	Alberta Investment Management Corporation	2,000	Domestic
11/25/2021	Vivo Energy plc (63.95% Stake)	UK-based company that distributes and markets petroleum products	Burkina Faso, Cape Verde, Ivory Coast, Egypt, United Kingdom, Ghana, Guinea, Kenya, Morocco, Madagascar, Mali, Mauritius, Senegal, Tunisia, Uganda	Vitol Group	Switzerland, UK, Netherlands	Helios Investment Partners LLP	1,639	Outbound
12/1/2021	Commonwealth Fusion Systems	US-based company that develops energy through inexhaustible power plants and uses rare-earth barium copper oxide superconductor technology to develop energy	USA	Eni S.p.A.; Equinor ASA; Temasek Holdings Pte. Ltd.; Alphabet; Soros Fund Management LLC; Tiger Global Management, LLC; Khosla Ventures; Schooner Capital LLC; Coatue Management, L.L.C.; Host-Plus Pty Limited; Senator Investment Group LP; DFJ Growth; Emerson Collective LLC; Breakthrough Energy Ventures LLC; Jigyo Souzou Capital Co., Ltd.; Moore Strategic Ventures, LLC; The Engine; Future Ventures;	Italy, Norway, Singapore, USA, Australia, Japan, Monaco	Not available	1,589	Outbound

Announced date	Target company	Target description	Target country	Bidder company	Bidder country	Seller company	Deal value EUR(m)	Deal type
				Starlight Ventures Management LLC; Safar Partners LLC; Lowercarbon Capital LLC; FootPrint Coalition; TIME Ventures; Fine Structure Ventures; Jameel Investment Management Company				
10/20/2021	HEDNO S.A. (49% Stake)	Greece-based power distributor via underground power cables, overhead lines, and substations, delivers power to homes and businesses in the mainland and the islands of Greece	Greece	Macquarie Asset Management, Inc.	USA	Public Power Corporation SA	1,312	Inbound
12/9/2021	Ausgrid (16.8% Stake)	Australia-based company engaged in the distribution of electricity	Australia	APG Asset Management NV	Netherlands	Australian Super Pty Ltd	1,265	Outbound
10/19/2021	Borkum Riffgrund 3 Investor Holding GmbH (50% Stake)	Germany-based 900 MW offshore wind farm	Germany	Glennmont Partners	United Kingdom	Orsted A/S	1,210	Domestic
12/3/2021	Edison S.p.A. (Renewable energy business) (49% Stake)	Italy-based renewable energy platform of Edison	Italy	Credit Agricole SA; Credit Agricole Assurances SA	France	Edison S.p.A.	980	Domestic
11/24/2021	Ionity	Germany-based operator of high-power charging station network for electric vehicles	Germany, USA	BMW AG; Volkswagen AG; AUDI AG; Ford Motor Company; Hyundai Motor Co; Kia Motors Corporation; Dr. Ing. h.c. F. Porsche AG; Global Renewable Power II Fund; Mercedes-Benz AG	Germany, USA, South Korea	Not available	700	Inbound
10/10/2021	REC Solar Holdings AS	Norway-based manufacturer and distributor of solar-grade polysilicon, solar cells and panels for the photovoltaic market	China, Norway, Singapore, Sweden	Reliance Industries Limited	India	China National Bluestar (Group) Co., Ltd.	666	Inbound
10/4/2021	Ignis Energia, S.L. (49% Stake)	Spain-based company engaged in the management of cogeneration plants	Spain	EFG Hermes Private Equity	Egypt	Not available	625	Inbound

Announced date	Target company	Target description	Target country	Bidder company	Bidder country	Seller company	Deal value EUR(m)	Deal type
11/3/2021	Sunseap Group Pte Ltd (87.4% Stake)	Singapore-based integrated clean energy solutions provider	Singapore	Energias de Portugal S.A.	Portugal	Banpu Public Company Limited	600	Outbound
11/22/2021	Meridian Energy Limited (100% Stake)	New-Zealand based ASX-listed electricity generation company	New Zealand	Royal Dutch Shell Plc; Infrastructure Capital Group Limited	United Kingdom, Netherlands, Australia	Meridian Energy Limited	468.747	Outbound
12/8/2021	AEB Holding NV (100% Stake)	Netherlands-based operator of biomass energy plant	Netherlands	AVR-Afvalverwerking B.V.	Netherlands	Amsterdam	450	Domestic

Source(s): MergerMarket, 2021

Share price evolution, 4Q21

Company	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Last Quarter Q42021/Q32020	Last Year Q42021/Q42020
CEZ, a. s.	21.3	20.9	20.2	20.1	18.5	17.4	17.4	17.4	20.4	23.9	25.3	30.12	73%	73%
E.ON SE	9.5	9.7	8.9	9.1	10.1	9.4	10	9.2	8.8	10.1	10.7	11.13	11%	21%
EDP - Energias de Portugal, S.A.	3.2	3.4	3.4	3.7	4.1	4	4.3	4.6	5	4.7	4.6	4.78	11%	4%
Electricité de France S.A.	13.5	12.2	10.8	9.4	10.7	7.6	8.9	11.4	11.1	11.8	11	12.13	36%	6%
EnBW Energie Baden-Württemberg AG	31.3	32.6	33.8	44.9	45.8	49.1	49.6	53.8	62.9	80.2	77	77.25	56%	44%
Endesa, S.A.	21.8	22.7	23.2	24.1	22.8	20.7	23.6	23.5	21.8	22.3	20.2	19.43	-18%	-17%
Enel SpA	5.3	5.7	6.4	6.9	7.4	6.7	7.8	7.9	8.3	8.2	7.6	6.94	-11%	-12%
ENGIE SA	13.6	13.2	13.8	14.6	14.2	10.2	11.4	12	12.7	12.3	11.8	12.62	11%	5%
Fortum Oyj	19.6	19	20.6	21.5	19.5	16	17.4	18	21.5	23.1	24.7	26.4	52%	47%
Iberdrola, S.A.	7.3	8.3	9	9.1	9.8	9.3	10.8	11.1	11.1	11.1	10.1	9.86	-9%	-11%
National Grid plc	9.6	9.4	9.4	10.5	11.4	10.4	9.7	10.1	9.8	9.2	9.4	11.54	19%	14%
Naturgy Energy Group, S.A.	23.9	25.6	23.5	23.5	21.2	16.2	16.6	18.4	20.7	21.4	21.9	24.01	45%	30%
Ørsted A/S	63.8	71	85.2	83.5	92.7	96.9	117.4	142.7	145.9	123.1	127.4	115.83	-1%	-19%
Public Joint Stock Company Inter RAO UES	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.06	-40%	-40%
RWE Aktiengesellschaft	21.6	22.9	25.3	26.8	29.3	27.9	32.5	33.7	34.1	32	31.6	33.34	3%	-1%
SSE plc	13.5	12.7	12.7	15.4	17.2	14.1	14.2	15.2	16.6	15.1	15.8	19.03	34%	25%
Suez SA	11.4	12.3	13.5	13.4	13.5	10.1	12.4	16	17.4	19.8	19.7	19.74	59%	23%
Uniper SE	25.5	26.4	28.2	28.8	27.6	25.8	28.5	27.6	30.1	30.4	33.6	38.86	36%	41%
Veolia Environnement S.A.	19	20.9	22.2	23.1	24.6	19.5	19.4	18.7	22.4	25.3	27.6	29.28	51%	57%
VERBUND AG	42.5	45.2	51.3	46.8	42.9	39.5	44.6	56	69.7	71.2	86.1	93.1	109%	66%
EURO STOXX Utilities	300.9	315.9	330.2	340.9	356.3	306.7	353.7	362.7	377.2	382.3	374.4	377.3	7%	4%

Source(s): S&P Capital IQ, 2022

Credit ratings, as of February 2022

Company	S&P Rating ¹	Moody's Rating ¹	Fitch Rating ¹
CEZ, a. s.	A-	Baa1	-
E.ON SE	BBB	Baa2	BBB+
EDP - Energias de Portugal, S.A.	BBB	Baa3	BBB
Electricité de France S.A.	BBB	Baa1	A-
EnBW Energie Baden-Württemberg AG	A-	Baa1	-
Endesa, S.A.	BBB+	Baa1	BBB+
Enel SpA	BBB+	Baa1	BBB+
ENGIE SA	BBB+	Baa1	A-
Fortum Oyj	BBB+	Baa1	BBB
Iberdrola, S.A.	BBB+	Baa1	BBB+
National Grid plc	BBB+	Baa2	BBB-
Naturgy Energy Group, S.A.	BBB	Baa2	BBB
Ørsted A/S	BBB+	Baa1	BBB+
Public Joint Stock Company Inter RAO UES	-	Baa3	BBB
RWE Aktiengesellschaft	-	Baa2	BBB+
SSE plc	BBB+	Baa1	BBB
Suez SA	-	Baa1	-
Uniper SE	BBB	- -	-
Veolia Environnement S.A.	BBB	Baa1	BBB
VERBUND AG	A	A3	-
Mode	BBB+	Baa1	BBB

¹Quarterly rating variation: Upgrade Unchanged Downgrade

Note(s): (1) Long-term credit rating provided as of February 2022; comparison made with ratings as of 17 June 2021
Source: S&P CapitalIQ/Moody's/Fitch, 2022

Regulatory developments in the European P&U sector, 4Q21

Italy

Extension of the Super bonus scheme

On 30 December 2021, the Italian government published its Budget Law 2022 (Law n. 234), extending the validity of the 'Super bonus 110' incentive scheme, which is a tax deduction mechanism in place for energy upgrading and/or seismic retrofitting of buildings up to a maximum of 110 percent. It was first introduced as part of the Italian COVID relief package 2020 and gives final customers the possibility of transferring the credit to third parties (like banks). Until 2023, the full 110 percent can be deducted, while expenses incurred in 2024 and 2025 can be deducted up to 70 percent and 65 percent, respectively.

Source: "LAW 30 December 2021", Gazzetta Ufficiale

Ratification of the European RED II Directive

On 8 November 2021, the Italian government published the Legislative Decree n. 199 to ratify the European RED II Directive, which aims to promote the use of renewable energy sources. It came into implementation on 15 December 2021 and calls upon the ministries involved to adjust the regulation within 180 days. The main points the decree addresses are:

- Create a new incentive mechanism for renewable energy sources that gives direct access to incentives for small scale (<1 MW) 'traditional' technologies (FV, onshore wind, etc.) and energy communities, as well as an auction mechanism for large scale (>1 MW) and 'innovative' technologies (solar thermal, energy storage, etc.)
- Promote the use of renewable thermal energy and incentivize the production of biomethane
- Simplify the bureaucratic processes for renewable energy plants

Source: "Legislative decree 8 November 2021, n. 199", Gazzetta Ufficiale

Spain

Royal Decree-Law 23/2021, of October 26

Royal Decree-Law 23/2021, of October 26, focuses on urgent measures in the field of energy for the protection of consumers and introduction of transparency in the wholesale and retail markets of electricity and natural gas.

The objective of this regulation is to define measures aimed at protecting consumers against the price situation that the international energy markets have been experiencing in recent years, generating tensions in other sectors as well (listed prices of main raw materials and electricity, etc.).

Source: "General Disposition October 27, 2021", BOE

Resolution of December 16, 2021

Resolution of December 16, 2021, of the National Commission of Markets and Competence (CNMC), establishes the values of the access tolls to the electricity transmission and distribution networks applicable from 1 January 2022. The purpose of this resolution is to establish the electricity transmission and distribution tolls for 2022. As these are regulated businesses, the CNMC publishes annually (generally at the end of the year) the regulated terms that will serve to establish the expenses of access to the network for all users that are connected to the transport and/or distribution networks.

Source: "National Markets and Competition Commission December 22, 2021", BOE

Royal Decree-Law 29/2021, of December 21

It adopts urgent measures in the energy field to promote electric mobility, self-consumption and the deployment of renewable energies. The decarbonization of the economy, in addition to an urgent need to limit climate change and its effects on the planet, represents an opportunity from an economic point of view, as identified by the Recovery, Transformation and Resilience Plan (PRTR) so that the funds allocated by Europe serve to repair the damage caused by the COVID-19 crisis, through reforms and investments, to build an economically, socially and environmentally sustainable recovery.

Source: "General Disposition December 22, 2021", BOE

Circular 10/2021, of December 20

Circular 10/2021, of December 20, of the National Commission of Markets and Competition (CNMC), establishes the remuneration aspects of the electricity market operator attributed by European regulations to the national regulator, and are specified in:

- The determination of the recoverable costs incurred by the electricity market operator under Regulation (EU) 2015/1222
- The definition of the mechanism for the recovery of those costs

Source: "National Markets Commission and the Competition December 25, 2021", BOE

Self-consumption Roadmap

Self-consumption Roadmap is focused on identifying the challenges and opportunities of the new energetic reality and establishing measures to ensure its deployment in Spain in the coming years. After undergoing the public hearing process, the Self-consumption Roadmap incorporates improvements and includes 37 measures of awareness, training for professionals or dissemination, to improve knowledge and acceptance of self-consumption by the entire population.

The document contemplates measures to promote collective self-consumption, for example, in **neighbor** communities, and regulatory changes to speed up the start-up of facilities. It also pursues the improvement of industrial competitiveness, reducing energy costs, the development of the existing value chain and promotion of new businesses. For this reason, it contemplates actions that contribute to the implementation of self-consumption in sectors such as industry or services.

According to a study by the Institute for Energy Diversification and Saving (IDAE), self-consumption can reach between 9,000 MW and 14,000 MW of installed power in 2030. Lately, self-consumption in Spain has been multiplied by 2.5 to reach almost 600 MW installed during the year 2020. For 2021, an increase of approximately 1,000 MW is expected, with which the accumulated total could reach 2,500 MW.

Source: "Roadmap of self-consumption", MITECO

Roadmap for the development of offshore wind and sea energy

The roadmap for the development of offshore wind and sea energy in Spain is lined up with the 'EU Strategy on Marine Renewable Energies,' setting the fourfold objective:

- Make Spain a European benchmark for environmental innovation and technological development regarding renewable energies in the marine environment.
- Make Spain an international benchmark in industrial capabilities and the entire sector's value chain.
- Promoting a compatible and sustainable development of renewable marine technologies from an environmental and social point of view.
- Establishing an adequate state framework for the orderly use of renewable marine resources.

This deployment is part of the key strategic elements in the path of decarbonization of the Spanish economy, as well as other transversal challenges such as economic reactivation after the COVID-19 health crisis, just transition, demographic challenge and circular economy.

Source: "Road Map offshore wind and Marine energy in Spain", MITECO

Mudejar 400 KV Just Transition Knot

The Order TED/1182/2021, of November 2, which regulates the tender for the Mudejar Just Transition Knot (and Order TED/1198/2021, of November 3, which corrects errors detected in the first Order), aims to articulate a capacity tender for new generation access to the electricity transmission network in Spain. These orders identify a set of 34 municipalities close to the closed Thermal Power Plant of Andorra, which make up the Just Transition Zone defined for this tender and in which the new generation assets that participate must be established.

In this sense, the Just Transition Strategy constitutes a state-level instrument aimed at minimizing the impact of the ecological transition in those regions with a significant dependence on fossil fuels economy, incorporating strong socio-economic measures at the local level in the projects to be developed.

In addition, and independently of the so-called Just Transition Knots, it is expected that more than 180 additional capacity tenders will be published for new generation access to the electricity transmission network in Spain.

Source: "Ministry for the ecological transition and the demographic challenge", November 5, 2021; "Ministry for the ecological transition and the demographic challenge", November 3, 2021

Renewable energies, renewable hydrogen and storage PERTE

The main objective of this PERTE is to advance in Energy Transition designed and made in Spain, increasing the economic opportunities of the industry:

- Consolidating the value chains of renewable energies and their integration in different sectors
- Promoting social and business model innovation
- Positioning Spain as a technological benchmark in the production and use of renewable hydrogen
- Developing and deploying technologies and business models linked to energy storage and flexible management

Other specific objectives are defined:

- Identify, demonstrate and deploy '2050 ready' solutions
- Promote technology and knowledge transfer
- Support the growth of national initiatives, overcoming the growth barriers of SMEs and betting on start-ups and new business models
- Develop skills and knowledge, promoting adequate quality training
- Promote public-private and private-private collaboration through driving initiatives and business groups that generate economies of scale

The PERTE ERHA is articulated through four actions: 25 transformative measures (EUR3,550 million), 17 facilitating measures in four areas of action, NextGen Energy seal, and development of a system for monitoring, evaluating and valuing capacities, knowledge and value chain in Energy Transition that allows quantifying the impact of PERTE.

Source: "PERTE of Energies renewable, Renewable Hydrogen and Storage", Plan de Recuperacion

Germany

Market communication 2022

As part of MaKo 2022, big changes will be introduced to the energy sector on 1 October 2022. The changes relate to new processes and fundamental process changes, within the process documents GPKE, MPES, MaBiS and WiM. In addition, two new electronic price sheets and a new market role, namely that of the energy service provider, have been established. The ESA acts between the connection user and the metering point operator and is only allowed to analyse meter readings. The target group of the ESA includes customers with minimum consumption of at least 6,000 kWh/year. MaKo 2022 is postponed from 1 April 2022 to 1 October 2022 due to the ongoing burden on the energy industry and a hacker attack.

Source: "MaKo 2022: The most important content at a glance", GISA

Ordinance on the amendment of the heating costs ordinance

The amendment to the energy efficiency directive, which came into force on 1 December 2021, contains obligations regarding the remote readability of metering equipment for recording consumption. Among other things, the directive stipulates that newly installed meters and heat cost allocators must be remotely readable. Devices that have already been installed must be retrofitted. In addition, building owners must provide users with billing or consumption information at least twice a year in cases where remotely readable meters or heat cost allocators have been installed. From 1 January 2022, this must be provided at least monthly during the heating period.

Source: "Ordinance on amending the heating cost ordinance", BMWK

Ordinance on the revision of the biomass electricity sustainability ordinance

The draft regulation came into force on 8 December 2021. The regulations transpose sustainability criteria and criteria for greenhouse gas savings in electricity generation and biofuel production from biomass from the European parliament and council into national law. The scope of the sustainability regulations is extended from liquid to gaseous and solid bioenergy sources in implementation of the EU requirements.

The regulations provide for extensions of the sustainability criteria to be met and requirements for greenhouse gas savings. In addition to agricultural biomass, forestry biomass is now also subject to the requirements of the BioSt-NachV and Biokraft-NachV.

Source: "Ordinance of the federal government on the revision of the biomass electricity", BMUV

Ordinance on costs and charges for hydrogen networks

The amendment of the ordinance entered into force on 1 December 2021 and serves to define the conditions and methods for determining the costs and charges for access to hydrogen-only networks. In addition to the principles for the formation of charges for access to hydrogen networks, it essentially specifies the requirements for determination of the underlying network costs from the energy industry act (EnWG). The ordinance applies only to operators of hydrogen networks who submit an effective declaration pursuant to section 28j EnWG and thus voluntarily submit to regulation.

Source: "Ordinance on the costs and fees for access to hydrogen networks and amending the Incentive Regulation Ordinance", BMUV

The UK

Net Zero Strategy: Build Back Greener

The Net Zero Strategy, published on 19 October 2021, sets out policies and proposals for decarbonizing all sectors of the UK economy to meet the net zero target by 2050. It is built on the Prime Minister's 10-point plan for a green industrial revolution to be on track for UK carbon budgets, 2030 National Determined Contribution and net zero by 2050.

Source: "Net Zero Strategy: Build Back Greener", Government of the UK

Heat and buildings strategy

This strategy, published on 19 October 2021, sets out how the UK will decarbonize homes, and commercial, industrial, and public sector buildings, as part of setting a path to net zero by 2050. The heat and buildings strategy sets out the government's plan to significantly cut carbon emissions from the UK's 30 million homes and workplaces in a simple, low-cost and green way, while ensuring this remains affordable and fair to households across the country.

Source: "Heat and buildings strategy", Government of the UK

Greening finance: a roadmap to sustainable investing

It was published on 18 October 2021 and sets out the government's ambition to make the UK the best place in the world for green and sustainable investment. It ensures that the information exists to enable every financial decision after factoring in climate change and the environment.

Source: "Greening Finance: A Roadmap to Sustainable Investing", Government of the UK

Track 1 clusters confirmed

Hynet and East Coast Clusters have been confirmed as Track-1 clusters for the mid-2020s. It was published on 1 November 2021. The cluster sequencing process has GBP1 billion (through the CCS Infrastructure Fund) that aids in providing the industry with the certainty to deploy CCUS at pace and scale. The process has completed the first phase of the evaluation of the 5 cluster submissions received by the department. The selected clusters will now be taken forward to track-1 negotiations.

Source: "Climate Change Update", UK parliament

UK government announces biggest investment into Britain's tidal power

On 24 November 2021, the UK government announced a minimum funding of GBP20 million per year for tidal energy in the CfD. It will invest in tidal stream electricity as part of its fourth allocation round of the Contracts for Difference scheme due to open in December.

Source: "UK government announces biggest investment into Britain's tidal power", Government of the UK

Nuclear Energy Financing Bill

The Nuclear Energy Financing bill was published on 26 October 2021. It will introduce a Regulated Asset Base (RAB) model as an option to fund future nuclear projects. A RAB model is a tried-and-tested method, typically used in the UK, to finance large-scale infrastructure assets such as water, gas and electricity networks.

Source: "Future funding for nuclear plants", Government of the UK

Announced GBP160 million to upgrade ports for floating wind

On 30 October, the UK announced new large-scale floating offshore wind ports and factories, which will be built using government investment. Developers and manufacturers looking to invest in offshore wind will be able to bid for GBP160 million in the new funding, to kickstart projects across the UK. The newly allocated funding will support the target in the Prime Minister's Ten Point Plan to deliver 1 GW of energy through floating offshore wind by 2030.

Source: "Scotland and Wales could be home to new floating offshore wind ports thanks to £160m UK government funding", Government of the UK

Electrical vehicle smart charging

On 15 December, EV (Smart Charge Points) Regulations 2021 was signed into law to support the commitment to net zero emissions by 2050. The government has announced that all new cars and vans must be fully zero emission by 2035. The EV regulations mandate that new private charge points sold in GB must have smart functionality and meet certain device-level requirements to enable smart charging. Smart charging shifts the charging of an EV to a time when there is either less demand on the grid or more renewable energy available.

Source: "Electric vehicle smart charging", Government of the UK

France

EDF has acknowledged the France government measures aimed at limiting the increase in electricity tariffs for 2022

On 13 September, the French government announced that EDF (80 percent state-owned-utility company) will sell more of its cheap nuclear electricity to smaller competitors (ARENH mechanism) to limit the increase of electricity prices in France. It will increase the nuclear electricity volumes from 100 TWh to 120 TWh in 2022.

This nuclear electricity fixed price to its competitors will only increase from EUR42.0/MWh to EUR46.2/MWh, which is far below recent market prices exceeding EUR100.0/MWh.

This measure comes while EDF lowered its 2022 nuclear output forecast by 10 percent after detecting technical faults on Penly 1 nuclear reactor, forcing a maintenance outage. EDF has acknowledged the measures and have estimated the cost of these measures on the group at EUR8.4 billion (based on market prices on 31 December 2021).

Source: "EDF hit by cap on power prices, nuclear reactor closures", Reuters; "Fact box: Europe's efforts to shield households from soaring energy costs", Reuters; "Publication of the decree and orders relating to the additional allocation of 20 TWh of ARENH volumes for 2022: update of the impact on the 2022 EBITDA outlook", EDF; "Exceptional measures announced by the French Government", EDF

France softens usage restrictions of coal-fired power plants this winter

The French government temporarily eases limits on use of its remaining coal-fired power plants to ensure electricity supply in January and February 2022. It comes at a time when electricity supply is under particular strain due to low availability of the nuclear fleet, which supplies about 70 percent of France's electricity. Several reactors are shut down for maintenance.

Under current law, a carbon emissions cap for coal plants limits their operation to 700 hours annually, but the decree lifted it to 1,000 hours between January and February. This measure does not change the closing schedule of coal-fired power plants (4 currently running; ultimate closing year should be 2024/2026).

Source: "France looking at using more winter coal as nuclear output lags", Reuters

Recovery plan (update)

On 6 September 2021, the French Prime Minister announced that EUR70 billion of the EUR100 billion recovery plan (launched in September 2020) has already been committed to support economic activity and job creation. The recovery plan, among others, paves the way for the French economy of 2030, which will be greener given the emergency to speed up the ecological transition.

The recovery plan in France dedicates EUR30 billion to green transition, which includes:

- EUR6.7 billion for thermal retrofitting of public (EUR4 billion for schools and administrative buildings, EUR500 million for social housing) and private (EUR2 billion for housing, EUR200 million for SMEs/VSEs) buildings. After a year's progress following the launch:
 - For private houses, renovations reached EUR1.7 billion/173,000 houses
 - For state public buildings, renovations reached EUR2.7 billion/4,000 projects
 - For schools and regional buildings, renovations reached 2,000 projects
- Industry decarbonation to finance investments and operating expenditures dedicated to the industry decarbonation during the 2020-22 period. Initial envelope of EUR1.2 billion fully allocated to 140 projects. A second EUR5.6 billion envelope allocated to help achieve decarbonization.
 - EUR1 billion will be focused on the decarbonization of SMEs and midcaps.
 - EUR4 billion for innovation on most polluting industrial sectors (metallurgy, chemicals, materials production). Focus will be stressed on improved technologies such as iron reduction and CCUS.
- EUR1.2 billion to develop everyday green mobility (cycling and public transportation). After a year's progress following the launch of clean vehicles:
 - 420 k conversion premiums (for scrapping old thermic vehicles) and ecological bonuses (subsidy to purchase clean vehicles, e.g., EV, HV, H²V)
 - 15.7 percent of new vehicle sales to individuals are electric or plug-in hybrids (compared to 2.5 percent in the first 7 months of 2019)
- EUR4.7 billion to support and develop railway transportation, including freight
- EUR2 billion have been committed to develop green hydrogen over 10 years (2021-30)

Source: "France Relance", Government of France; "Decarbonization of industry: France wants to take the leadership in Europe", Les Echos

Russia

Russia: The market of carbon credits in Russia is expected to be launched by mid-2022

The head of the Russian Ministry of Economic Development announced on the side lines of the UN Climate Conference in Glasgow that the Russian carbon credits trading market could be launched by mid-2022.

First climate projects, duly verified and validated, should appear in Russia towards the end of the first half of the year, where upon Russia will begin issuing carbon credits. Russia should launch a system of trading in and registering these carbon credits. Thereafter, the country will face the challenge of reducing the product carbon footprint.

In a related move, Russia is going to negotiate recognition and exchange of carbon credits — first, based on bilateral agreements with certain countries and at a later stage, it anticipates that the implementation of Article 6 of the Paris Agreement will make it possible to create an international market.

Source: "The market of carbon units in Russia is planned to be launched by mid-2022", TACC

Russia: RusHydro and Pertamina Power Indonesia agreed to jointly develop renewable power generation

RusHydro and Pertamina Power Indonesia have signed a memorandum of understanding for the development of power generation based on renewable energy sources including water energy. Signing the memorandum was the first step towards the development of cooperation between RusHydro and one of the key energy companies in Southeast Asia and one of the leaders in the Indonesian market of RES and hydrogen energy, which will allow for the diversification of RusHydro's international operations. These companies are going to

share RES expertise, knowledge and technologies and develop their talent pool. Potential joint projects also include designing and constructing hydroelectric power plants and constructing and modernizing dams in Indonesia.

Source: "RusHydro and Pertamina Power Indonesia agreed on the joint development of renewable energy generation", RusHydro

Russia: Rosatom will develop battery manufacturing for both Russia and Europe

Rosatom hopes to launch production of industrial and household lithium-ion batteries, which will be in demand in the European market including Russia. The corporation has launched a project in this area, "which is beginning to be localized on the Earth" with the help of a South Korean company, Enertech, whose authorized capital previously included Renera, industry integrator of the fuel division of Rosatom (TVEL) in the field of energy storage systems.

Source: "Rosatom will be able to create the production of batteries for both Russia and Europe", TACC

Russia: Russia increases its electricity exports to China in 2022 to a record high of 4.4 billion kWh

According to Inter RAO, Russia and China have signed an agreement in accordance with which in 2022 electricity exports from Russia will increase to a record-breaking annual figure of 4.4 billion kWh. This is an unprecedented volume of supplies in the history of relationships between these two countries.

Source: "Russia will increase electricity exports to China in 2022 to a record 4.4 billion kWh", TACC

Kazakhstan: Kazakhstan and China implement joint RES projects

Kazakhstan and China continue implementing joint renewable energy projects. Some of the current solar and wind power plants are the largest ones across Central Asia. Four more green facilities will be launched in the near future. China is the fifth-largest investment partner of Kazakhstan. By 2060, the share of renewable and alternative energy sources in Kazakhstan should reach 80 percent. Chinese companies are actively investing in the development of renewable energy in Kazakhstan.

Source: "Kazakhstan and China are implementing joint projects on the use of renewable energy", COK

Kazakhstan: Kazakhstan largest electric power company issues its first green bonds

Samruk-Energo, with the assistance of the Green Finance Center, made its debut offering of green bonds through a public subscription to Astana International Exchange worth KZT18.4 billion at a coupon rate of 11.4 percent per annum with maturity in 6.5 years.

Proceeds from the offering will be used to finance acceptable green projects in accordance with the Green Bond Principles (GBP) of the International Capital Markets Association (ICMA). Halyk Finance became the lead manager for the issue and placement of the company's green bonds. The Chairman of the Board of Samruk-Energo spoke of the importance of investing in green energy in order to implement the Energy Transition Plan stipulated by the company's new development strategy.

Source: "Samruk-Energo JSC, the largest Kazakh electric power holding, has issued debut green bonds", SAMRUK

Kazakhstan: How can EDB help Kazakhstan reduce its carbon footprint

The Eurasian Development Bank (EDB) has adopted a 5-year development strategy for the bank and plans to invest US\$3.8 billion in the Kazakhstani economy. Most RES projects of EDB have been implemented in Kazakhstan. Six of the eight wind and solar energy projects are currently implemented in Kazakhstan. EDB plans to invest in these types of energy in the coming 5 years and create at least 300 megawatts of clean green power. This will reduce Kazakhstan's carbon footprint by approximately 1.4-1.7 percent over the next 5 years.

Source: How can EDB help Kazakhstan reduce its carbon footprint

Ukraine: The EU will help Ukraine create a hydrogen market

The EU has already helped Ukraine accomplish energy transition and plans to strengthen their collaboration, particularly in creating a hydrogen market integrated into the European market, which is also in its emerging phase. A concept of the draft EU package for the water and decarbonized gas market is planned to be presented. The EU is ready to help the Operator of the State Customs Service of Ukraine and Ukrtransgaz to evaluate the infrastructure, in particular, gas storage facilities and pipelines, and their potential use in the hydrogen power industry.

Source: "The European Union will assist Ukraine in creating a hydrogen market - Yaroslav Demchenkov", Metallurgprom

Ukraine: Ukraine will produce hydrogen and transport it to Europe

Ukraine will produce 'green hydrogen' in Ukrainian gas holders and export it to the EU through its gas pipeline. Naftogaz of Ukraine and Ukrtransgaz have signed the respective memorandum, having joined the H2EU+Store initiative.

Source: "Ukraine wants to produce hydrogen and export it to Europe", Prime RU

Ukraine: Implementation of energy storage systems in Ukraine

The Verkhovna Rada has approved in its first reading a draft law ensuring the use of energy storage facilities in Ukraine, which should balance the operation of the power system and improve the stability of power supply for consumers. According to the Chairman of the Verkhovna Rada Committee for Energy, Housing and Utilities, even when wind or sun energy generation is limited, and this happens with extreme frequency, the compensation to producers at a green tariff accrues.

Source: "The Rada approved the introduction of energy storage systems in Ukraine", Finance.UA

Uzbekistan: Construction of nuclear power plants planned to be launched in Uzbekistan in 2022

Next year, the country will begin building a complex of two generator units for the region's first nuclear power plant. Rosatom will participate in the project on behalf of the Russian Federation. Uzbekistan is heading for modernization of its energy sector. In particular, 18 new power plants with a total capacity of 7,331 MW will be built and commissioned in the country by 2025. The first solar power plant has already been launched in the Navoi Region. Distribution substations will also be upgraded or built from scratch. Multilateral development banks (MDB) have also been reported to have invested US\$4.7 billion in the power sector of Uzbekistan. This is the largest investment in Central Asia.

Source: "Uzbekistan plans to start construction of nuclear power plant in 2022", KUZ

Azerbaijan: Azerbaijan and Saudi Arabia launch a major wind power project

In January 2022, a ground-breaking ceremony was held in Azerbaijan to lay the foundation for Khizi-Absheron 240 MW wind farm to be built by ACWA Power (a Saudi-based company). The project is implemented in the villages of Sitalchai (Khyzynsky District) and Pirakeshkul (Absheronsky District).

Source: "Azerbaijan and Saudi Arabia launched a major energy project", Eur Asia Daily

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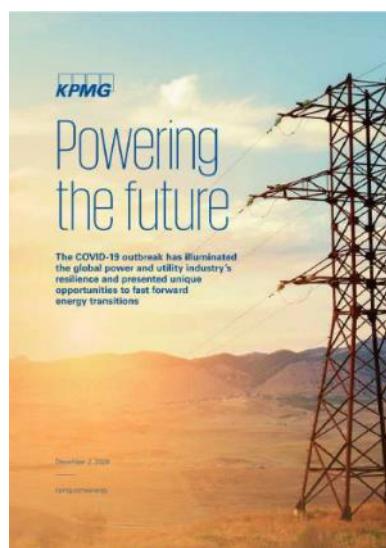
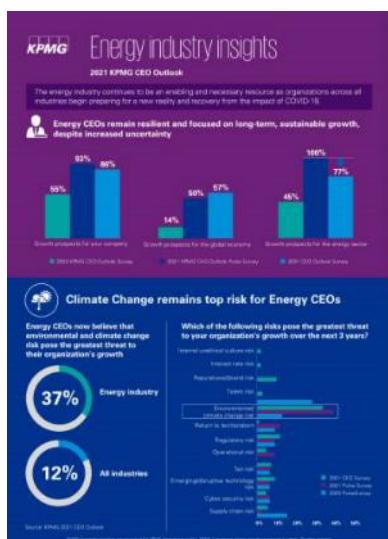
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