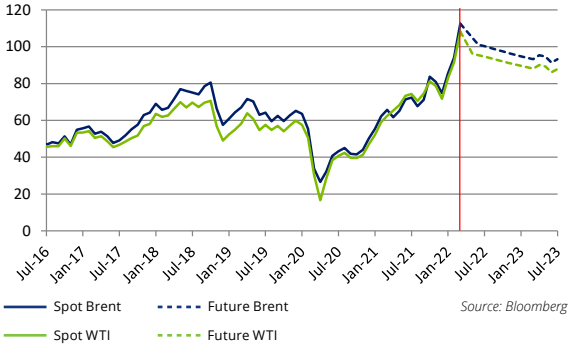
Deloitte.

Power & Utilities
May 2022

Newsletter
Power & Utilities in Europe

Commodities

Crude oil ($/bbl)

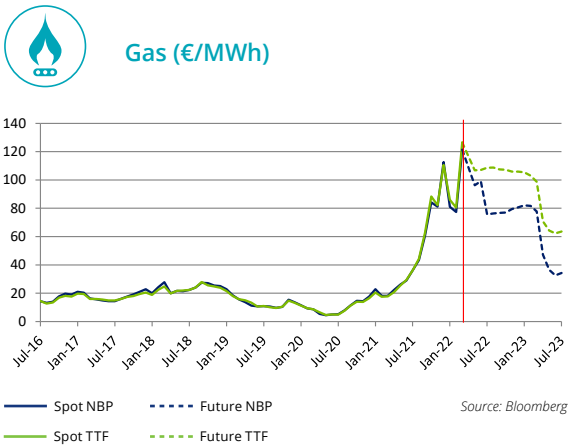


Over the first quarter of 2022, strong upward increases were observed for both Brent and WTI crude oil prices, peaking at USD112.5 and USD108.26 respectively at the close of the quarter. This is a price hike of over 50% for both benchmarks since the end of 2021. Short supply and uncertainty around future supply disruptions from the Russian invasion of Ukraine were coupled with strong global demand for oil, generating a bullish sentiment for oil commodity prices and giving rise to the observed trend.

Across the quarter, tight COVID-19 restrictions eased across Europe in response to a lower-than-predicted fatality rate for the omicron variant. **As a result, oil consumption returned to previous levels in line with increases in international travel.** Furthermore, cold spells in the north-east of the US saw a record high of 21.9 million barrels of crude oil products being consumed in the US per day. In response to the growing oil demand, the IEA called for member countries to start to implement emergency measures to curb demand and balance the market in the face of volatility due to the loss of Russia oil.

Supply has remained constrained across the quarter as capacity concerns continued. Opec+ and allies have continued to gradually increase output by 400,000 barrels a day each month, though not all members have been able to achieve these monthly targets. A portion of this shortfall is due to external factors, such as a drone attack at the start of the year near an oil depot in the UAE. This has led to increased fears of risks to production in the Gulf as well as concerns that Opec members will not be able to reach their targets in the near future.

Following the Russian invasion of Ukraine, IEA members agreed to withdraw 60 million barrels (4% of their total supplies) from their emergency stockpiles in order to counteract fears over depleted supplies. However, this announcement was concurrent with Opec+ and allies signalling that they will not accelerate plans to increase output. Supply fears were further exacerbated in an already very tight market as energy consumers tried to secure alternatives to their Russian energy supplies. Thus, prices continued to rise. Notably, counteractive measures to boost supply are limited by the ongoing push to reduce oil dependence.



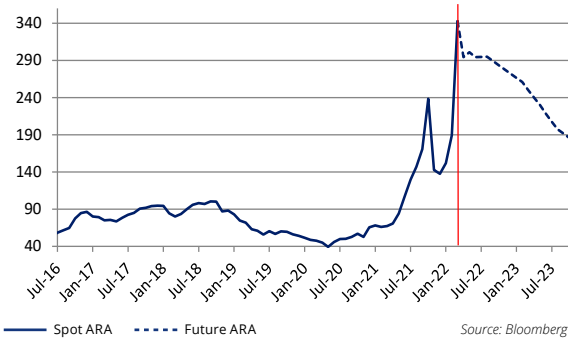
The price of natural gas has risen sharply since January 2022 across both NBP and TTF indices in response to the Russian invasion of Ukraine posing unprecedented uncertainty in European natural gas markets. Rises of 51% and 47% for NBP and TTF to €121.37/MWh and €126.50/MWh respectively, on average from January to March 2022, masked the more dramatic price rises observed since Autumn 2021, with Q4 2021 showing first signs of shortages in the market as demand picked up at the end of 2021.

Supply-side fundamentals dominated gas market movements across Q1 2022, with prices rising dramatically in January 2022 as news broke that diplomatic efforts to ease developing tensions between Russia and Ukraine were unsuccessful in response to so-called 'security risks' proclaimed by the Kremlin. **This news generated significant supply uncertainty, with Russia a chief exporter of natural gas to Europe.** Furthermore, immediately prior to the full-scale invasion of Ukraine in mid-February, prices pre-emptively rose in response to the news that Germany had blocked authorisation of the completed Nord Stream 2 pipeline following Russia's recognition of Dontesk and Lukahnsk as independent republics.

Prices continued to increase as Russia conducted its full invasion of Ukraine on 24 February 2022, though stabilised somewhat as news emerged that gas supply would not be completely disrupted despite the deterioration of geopolitical relations. **Uncertainty has overshadowed market fundamentals since Russia's initial invasion, with supply-side measures including expanded EU and UK domestic gas production considered but long on the horizon.** In March, European nation states refused Russia's demands to pay for gas in roubles, further increasing gas price due to a reduction in the effective supply of gas.

Demand-side fundamentals on the other hand were far more certain given Europe's reliance upon natural gas remaining despite the uncertain supply backdrop. Excess demand amid supply uncertainty remained a prominent risk across the quarter, with counteractive measures ranging from reductions in household gas use habits to price ceilings and embargos discussed but ultimately difficult to enact. Altogether, consistent demand coupled with unprecedented supply risk gave rise to the dramatic price increases observed across the quarter.

Coal ($/metric ton)

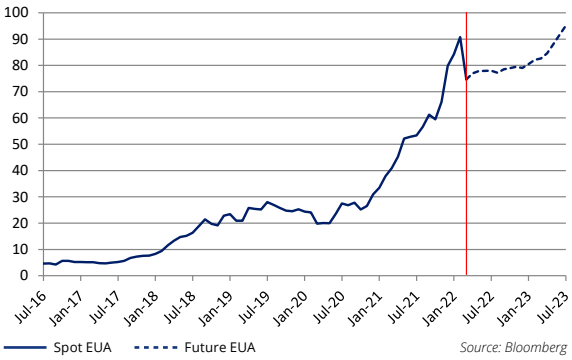


The price of coal rose sharply throughout the quarter, with the Amsterdam-Rotterdam-Antwerp (ARA) index rising 149% from USD137.60 at the end of 2021 to USD342.60 by the close of the quarter. Coal prices peaked at more than five times the level observed in March 2021. The price rally was driven by reduced coal supply from some of the world's largest coal producing nations, combined with increased demand for coal both due to global recovery from the pandemic and in response to price spikes observed in other energy sources.

As economies recover from the pandemic, demand for industrial electricity generation has grown, resulting in upwards pressure for both metallurgic and thermal coal. European economies have also turned towards coal to fill in the energy gap created by extreme pressure that the war in Ukraine has applied on the supply of staple fuels. Natural gas prices have continued to rise throughout the quarter, leading producers to seek out coal as a cheaper source of electricity generation, even when adjusted for carbon costs.

On the supply-side, European countries have turned to their domestic coal plants as a way of reducing dependence on Russia during the Ukraine war. However, due to low investment in coal-powered generation across the last 10 years, short term additional supply capacity is limited and has failed to fully ease constraints. Import-led coal supply is also limited, with notable constraints emerging across the globe. For instance, Indonesia announced an export ban of coal in order to avoid power outages. Indonesia one of the world's largest exporters of coal, and is China's largest foreign supplier. Meanwhile, Australia closed its largest coal-fired power station ahead of schedule despite ongoing reliance on the fuel for electricity. These fundamentals are very significant for the supply capacity of coal in Europe, with limited easing of fuel shortages.

Carbon (€/ton)



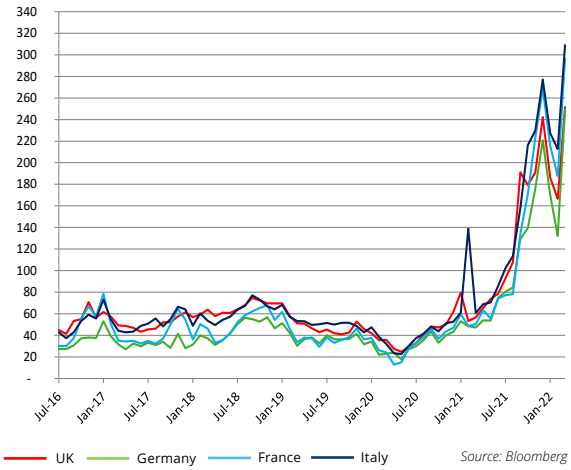
Carbon prices suffered volatility across Europe in Q1, with initial record-breaking levels of over €90 per tonne in February 2022 giving way to rapid declines to below €75 per tonne by March 2022. The increase in the carbon price in the first half of the quarter was fuelled by expectations of stricter climate policies as well as soaring demand for carbon emissions credits due in large part to supply constraints in gas markets increasing reliance upon more pollutant fuels such as coal. However, following the Russian invasion of Ukraine, a series of reactionary market behaviours were observed leading to price decreases in February and March 2022.

Firstly, in reaction to Russia's invasion of the Ukraine, investor sentiment became increasingly defensive and uncertain as the future of energy commodity markets fell under threat. **This gave rise to divestment from energy market segments leading to a marked increase in traded carbon credit supply, driving price downwards.**

Secondly, in reaction to business energy and financial uncertainty, **industrial operators and investors trimmed their traded carbon positions in order to boost liquidity and resilience.** This further increased supply and brought price down. Other emitting industrial operators tightened their operations in reaction to fuel input uncertainty, limiting demand and further accentuating supply-driven price lows.

Thirdly, due to the considerable fuel price increases observed across the quarter and the carbon price drops triggered by the behaviours noted above, automatic technical trading mechanisms (e.g. stop-losses) were triggered for some investors as positions were sold.

Baseload Spot Day Ahead (€/MWh)



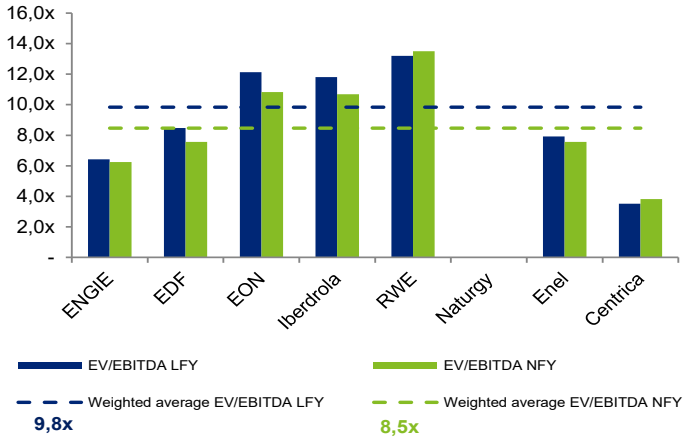
Baseload prices spiked significantly across UK, Germany, France and Italy across Q1 2022 in response soaring natural gas prices and the ongoing energy crisis, which was made worse by the Russia-Ukraine conflict, with monthly mean prices rising 39% on average from January to March 2022 across the various power markets.

Having briefly recovered from the highs in December 2021, January 2022 brought energy supply disruption with the escalation of geopolitical conflict between Russia and Ukraine. Russian pipeline gas, a key fuel for European power generation, was redistributed from Germany to Poland amid supply uncertainty, triggering substantial price rises. Further price rises observed in gas, oil and coal markets across Europe as Russia invaded Ukraine in February led to persistently high baseload prices. **Overall, baseload price is highly dependent on input prices, leading to the price rises observed despite strong renewables performance at times across the quarter.**

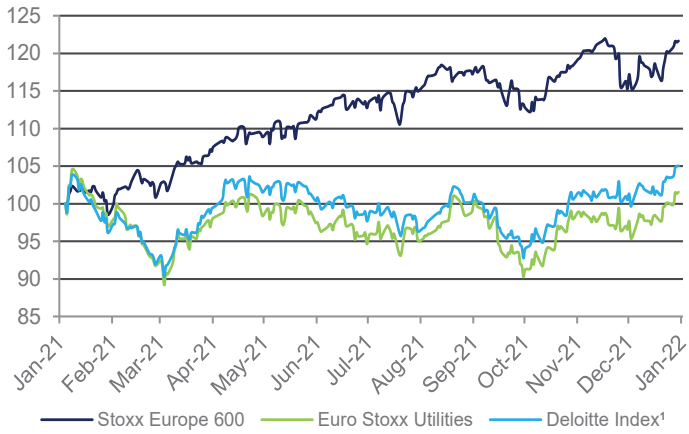
Spotlight on Power and Utilities market

Capital market overview

	Deloitte Index (1)	Enel	Iberdrola	EDF	ENGIE	EON	Naturgy	RWE	Centrica
Market cap. ratios									
Currency		EUR	EUR	EUR	EUR	EUR	EUR	EUR	GBP
Market Cap (Dec. 31)		**68 441**	60 923	35 316	31 387	30 011	25 225	23 579	**3 931**
3m stock price performance	**13%**	5%	19%	**-10%**	12%	14%	**31%**	16%	24%
YoY stock price performance	**5%**	-17%	-13%	**-21%**	2%	35%	50%	0%	**54%**
Market multiples (2)									
EV/EBITDA LFY	**8,1x**	7,9x	11,8x	8,5x	6,4x	12,1x	n/m(2)	**13,2x**	**3,5x**
EV/EBITDA NFY	**6,9x**	7,6x	10,7x	7,6x	6,2x	10,8x	n/m(2)	**13,5x**	**3,8x**
P/E LFY	**9,3x**	n/m	16,9x	n/m	**8,6x**	**29,5x**	20,8x	23,7x	n/m
P/E NFY	**10,5x**	12,5x	16,9x	**8,4x**	10,5x	12,7x	n/m(2)	19,5x	20,5x
Price/book value LFY	**1,3x**	2,2x	1,6x	**0,7x**	0,8x	**2,8x**	n/m(2)	1,6x	1,6x
Profitability ratios									
ROE forward 12m	**15%**	19%	10%	9%	8%	**48%**	20%	**7%**	20%
ROCE forward 12m	**7%**	10%	6%	**4%**	6%	9%	10%	5%	**64%**
EBITDA margin LFY	**23%**	23%	**30%**	23%	18%	**11%**	16%	23%	13%
EBITDA margin NFY	**24%**	25%	**30%**	25%	18%	12%	21%	22%	**10%**
EBIT margin LFY	**11%**	9%	**17%**	6%	11%	6%	**2%**	13%	6%
EBIT margin NFY	**14%**	15%	**18%**	9%	10%	7%	13%	12%	**4%**



Source: Capital IQ



Source: Capital IQ

(1) Deloitte Index is composed of Engie, EDF, EON, Iberdrola, RWE, Naturgy, Enel, SSE and Centrica

(2) Given the uncertainty about the completion of the takeover bid for 22.69% of Naturgy shares launched by IFM Global Infrastructure on January 1st, 2021, LFY and NFY multiples are irrelevant

Key messages from brokers and analysts

" Utilities generally should benefit from higher power prices, although this depends partly on government interventions, plants availability and reliable commoditiy procurement " **(Deutsche Bank - March 1, 2022)**

" Hydrogen in Europe: Plenty of projects ready to go, but regulation is missing " **(Credit Suisse - March 24, 2022)**

" Commodities under conflict conditions – Demand may slow with higher energy prices "
(Credit Suisse - March 3, 2022)

" Renewables are going through turbulent times, with higher power prices, higher capex and WACC's also likely to rise " **(Société Générale – April 26, 2022)**

" We see the evolution of regulation at the EU level as supportive to the sector, both in terms of renewables development and possible adjustement to the market design " **(Credit Suisse – April 5, 2022)**

M&A Trends

Transactions involving power and utilities companies

TotalEnergies SE, a France-based oil and gas company, has **acquired EnBW North America,** a renewable energy company focused on offshore wind development. This announcement comes after the successful bidding by both TotalEnergies and EnBW for the development of an offshore wind farm off the U.S. East Coast was won for a consideration of **US$ 795 million** (100%). (MarketLine – March 02, 2022).

SSE Renewables has entered into an agreement with **Siemens Gamesa Renewable Energy** (SGRE) to acquire its existing European **renewable energy development platform** for a consideration of **€580m.**The SGRE portfolio includes c.3.9GW of onshore wind development projects. The transaction is subject to investment and regulatory approvals. (ENP Newswire – April 20, 2022)

French energy company **Rubis** finalised the purchase of an 80% stake in domestic solar project developer and power producer **Photosol SA** in an all-cash deal worth **€385m.** Photosol owns 330 MW of operating capacity, 145 MW of under-construction projects and has an additional 3 GW in the development pipeline. (RenewablesNow – April 19, 2022)

Greencoat Renewables PLC agreed to acquire a 50% stake in the operational **312-MW offshore wind farm** Borkum Riffgrund 1 in Germany for **€350m.** (MarketLine – April 5, 2022)

The electricity group **Energias de Portugal** (EDP) announced the **sale of 12 wind farms in Spain** to the state-owned group **China Three Gorges** (CTG) for €307m. (MarketLine - November 15, 2021)

Econergy International Ltd, a renewable energy company, agreed to acquire 49% stake in a Greek company that owns two companies which are developing **two solar power plants in Kilkis region of Greece.** The combined installed capacity of the projects will be 460 MW. The total investment for the construction of the projects is estimated at **€265m.** (MarketLine – April 20, 2022)

OX2 AB, a renewable energy company, has completed acquisition of the rights to build the Klevberget wind farm in the municipality of Ange, Vasternorrland County, Sweden, from **Vattenfall AB,** a renewable energy company, for a purchase consideration of c.€**200m.** The total installed capacity of the power plant will be **145 MW.** (MarketLine – February 28, 2022).

Verbund AG, an electricity company, has acquired 70% stake in renewable portfolio in Spain, from **Capital Energy Power Vortice** S.L.U., a wholly owned subsidiary of Capital Energy for an undisclosed amount. The combined installed capacity of the **portfolio will be 171 MW.** (GlobalData – March 21, 2022).

Greenvolt – Energias Renovaveis SA, a Portugal-based renewable energy company, has agreed to acquire 50% stake in solar projet portfolio in Portugal, from **Infraventus SA,** a renewable energy company for an undisclosed amount. The combined installed capacity of the project is **243 MW.** (MarketLine – March 11, 2022).

Eurowind Energy, a solar and wind energy developer, has acquired four wind farms in Denmark, from **Vattenfall** AB for an undisclosed amount. The combined installed capacity of the wind farms is **325 MW.** (MarketLine - March 10, 2022).

Transaction involving equity funds

Macquarie Asset Management Holding Pty Ltd and British Columbia Investment Management Corp, through their Consortium have reached an agreement to acquire a **60% stake in National Grid Gas plc (NGG),** a company that owns and operates the 7,660-kilometre gas transmission system in UK from National Grid Plc, for a purchase consideration of **£4.2bn.** (MarketLine April 1, 2022)

A consortium led by Australian **Macquarie Asset Management** has agreed to acquire, from Infravia and et Eurazeo **private equity funds,** the power producer **Reden Solar** at an enterprise value of **€2.5.** (Renewables Now – March 08, 2022).

The **Infrastructure Investments Fund** completed acquisition of **60% stake in Falck Renewables** SpA, an Italian based renewable energy company with a **1,133 MW installed capacity,** for consideration of approximately **€1.9bn** (MarketLine March 1st, 20222)

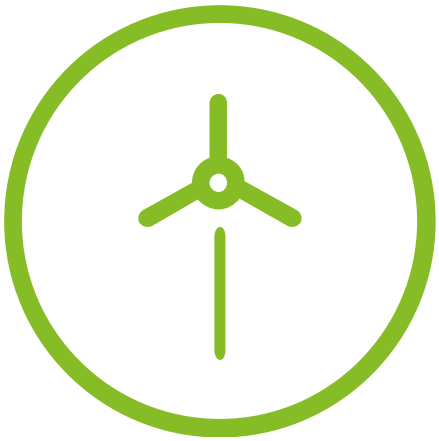
The French renewable energy company **Albioma** said that that it has accepted to be taken over the US investment firm **KKR for €1.6bn.** Albioma has an installed capacity of over **1 GW,** through investments in biomass, photovoltaics and geothermal energy. Completion of the transaction also remains subject to investment control clearances. (Reuter – April 28, 2022)

Sixth Street Partners, a private equity firm, has agreed to acquire 49% stake in **Eni Power SpA,** for a purchase consideration of up to **$1.4bn.** The transaction is part of Eni's strategy to enhance its assets and free up new resources for the energy transition. Eni will retain control of Enipower in terms of operations as well as over the financial consolidation of the company. The agreement is subject to conditions precedent (Reuters - March 15, 2022).

Finnish utility **Fortum** has agreed to sell its **50% stake in Fortum Oslo Varme, which provides heating to homes and businesses in Norway's capital,** for **$1.14 bn.** The buyers are Hafslund Eco, owned by the **Oslo municipality,** as well as **Norwegian private equity firm** HitecVision and Swedish energy **infrastructure investor** Infranode. (Reuters – March 22, 2022).

Energy Infrastructure Partners, an investment company in sustainable energy infrastructure has agreed to acquire **30%** stake in renewable assets and development pipeline in France, from **Boralex Inc.,** a renewable energy company, for an expected amount of **EUR532 million.** The total installed capacity of the renewable portfolio is more than **1 GW.** (MarketLine – February 26, 2022).

The Renewables Infrastructure Group Limited (TRIG), a renewable energy infrastructure investment company, has agreed to acquire **7.8%** stake in **Hornsea One** offshore wind farm in UK from **Global Infrastructure Partners,** a renewable energy project developer **for £277m.** The total installed capacity of the project is **1200 MW.** (MarketLine – March 21, 2022).



European Power and Utilities companies wrap-up

Revenue and EBITDA of Power & Utilities companies improved in FY21 thanks to strong increase in both volumes and sales prices.

In this context European Power Utilities achieved their guidance for FY21.

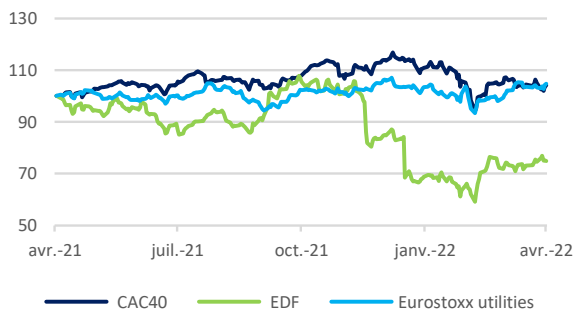
Energy prices are historicaly high and notably gas prices are traded with meaningful risk premium and volatility due to direct exposure of procurement on Russia.

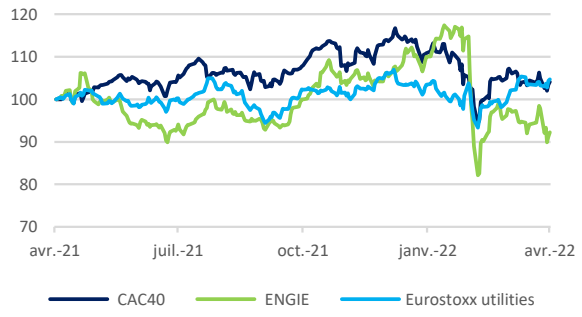
While higher power price should be positive to Power & Utilities companies, the unprecedent rise put them at risk.

Power & Utilities companies with significant energy procurement derivatives are subject to **significant margin call payment.** In addition, the skyrocketing increase in energy prices led to **government intervention to mitigate impacts** on consumer's bill and secure back-up of energy companies running for bankruptcy.

Lastly it creates **uncertainty on Energy policies with the review of previously announced energy transition measures** such as closure of coal plants.

Share Price Perf. Avril 2021 Avril 2022





Key Reported Financials

In billion of €	2021	2020	Var.
Sales	84.5	69.0	+22.4%
EBITDA	**18.0**	**16.2**	**+11.3%**
Operating Income	5.2	3.9	+34.8%
Recurring net income Gr	**4.7**	**2.0**	**+140%**
Net Income Gr Share	**5.1**	**0.6**	**+750%**
Operating CF	12.6	12.8	-1.6%
Net Capex	17.6	16.0	+10%
Net debt	43.0	42.3	+1.7%

In billion of €	2021	2020*	Var.
Sales	57.9	44.3	+31%
EBITDA	**10.6**	**8.9**	**+18.6%**
Operating Income	6.1	4.5	+37%
Recurring net income Gr	**3.2**	**1.7**	**+70%**
Net Income Gr Share	**3.7**	**-1.5**	**n.m**
Operating CF*	6.3	6.6	-5%
Net Capex*	8.0	7.5	+6%
Net debt	25.3	22.5	+12.4%

*Restated of EQUANS activities held for sale

FY21 Highlights

- **2021 guidance achieved.**
- **Revenues amounted to €84.5bn, +22.4%** vs FY20 mainly due:
  - Increase in (i) **France nuclear output by 7.5%** to 360.7 TWh thanks to a better availability of the nuclear fleet in 2021, and by lower modulation, (ii) **EDF Renewables output by +1.6TWh** and (iii) the **increase in Electricity prices**
  - Partly offset by (i) **decrease in the UK nuclear output** by 4.0TWh to €41.7TWh resulting from more outages in 2021 than in 2020. In addition **Hydro output decreased by 6.5%.**
- **Organic growth in EBITDA of 11.3%** between 2020 and 2021 is mainly :
  - Positive impacts of (i) **better opertionnal performance, (ii) positive performance in the trading busines,** (iii) significant improvements in Italy and in the French regulated activities, and (iv) reduction in production tax.
  - However, outages and extended outages of nuclear reactors at the end of the year in France required the **purchase of volumes on the market against a backdrop of a sharp rise in electricity prices.** This had a strongly unfavourable impact.
- **Impairment of €653m** mostly related to the Dungeness B and Hunterston B reactors definitive shutdowns.
- Announcement of additional **exceptional allocation of 20TWh of ARENH volumes for 2022** at €46.2/MWh, in addition to the exceptional measures dedicated to limit the electricity price increase in 2022,
- French President announcement of a construction p**rogram of 6 EPR2 reactors** and potentially 8 more
- Outages or extended outages of nuclear reactors owing to the detection of defaults on the pipes of the safety injection system. French nuclear output estimate updated to 295 - 315TWh for 2022 and 300 - 330TWh for 2023.
- **Share capital increase of €3.2bn in March 2023**
- **Sign-off of €10.3bn of banking facilities**

- **2021 guidance achieved.**
- **Revenues amounted to €57.9bn, +31% vs FY20 due to:**
  - Positive impact from (i) **higher commodity prices and volumes** notably for Giants and BtoB Supply, (ii) strong performance of **Thermal activities in Europe** thanks to exceptional market conditions allowing to capture higher spreads and increased ancillaries, (iii) increased activity in **Energy Solutiuons** and in **Renewables.**
  - Slightly offset by **adverse Foreign exchange** impacts
- **Operating income amounted to €6.1bn, +37% vs FY20 due to the above mentioned impacts.**
  - The **temperature effect** stood at c. €118 million, generating a **positive variation of €338 million** compared to a warmer than average 2020 across Networks, upply and Others in variation.
  - The **Nuclear** delivered an exceptional performance (+€1.1bn) driven by **higher prices and better availability** of 92% vs 63% in 2020.
- **Impairment** of €1.0 billion related to coal assets in Brazil and Renewables in Mexico.
- **Capital gains** of €1.1 billion were mainly related to the sale of 10% shareholding in GTT and the earn-out on the 29.9% shareholding in SUEZ sold in 2020.
- **Net income Group Share including EQUANS amounted to €3.7bn.**
- **Net debt stood at €25.3bn,** up €2.9bn vs FY20, mainly due to (i) the increase of capital expenditure over the period of €8.0bn, (ii) dividends paid to ENGIE SA shareholders (€1.4bn), (iii) other items included, €1.5bn mainly related to new leased right of use assets, hybrid repayments and foreign exchange rates effects.
- **EQUANS disposal on track with completion expected in H2 2022, as planned**
- **Regarding the Nord Stream 2 project the Group, as a lender, is exposed to €987m of credit risk**

FY22 Outlook

- **No guidance for FY22**
- **Impact of measurues announced on January 14, 2022 amounts to €8.3bn** based on market prices as at December 31, 2021 out of wich:
  - €3.1bn linked to additional 20TWh of ARENH
  - €3.3bn linked to replication in EDF offers
  - €1.3bn linked to limitation to 4% of regulated tariff increase

- **FY22 guidance:**
  - Operating income between €6.1bn - €6.5bn based on an indicative EBITDA between €10.7bn - €11.1bn. S
  - target of a leverage ratio for economic net debt to EBITDA of below or equal to 4.0x

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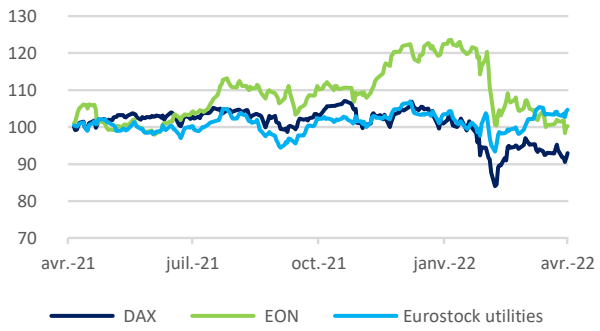
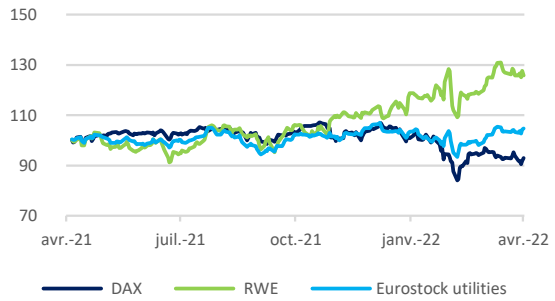




Key Reported Financials

In billion of €	2021	2020	Var.
Sales	77.4	60.9	+ 27%
EBITDA	**7.8**	**6.9**	**+13%**
Operating Income	6.7	2.9	+124%
Recurring net income Gr	**5.3**	**1.3**	**+308%**
Net Income Gr Share	**4.7**	**1.0**	**+370%**
Operating CF	4.1	5.3	-22.6%
Net Capex	4.8	4.2	+14%
Net debt	38.8	40.7	-4.7%

In billion of €	2021	2020*	Var.
Sales	24.8	13.9	+78.4%
EBITDA	**3.6**	**3.3**	**+11%**
Operating Income	1.5	1.7	-12%
Recurring net income Gr	**0.8**	**0.9**	**-11%**
Net Income Gr Share	**0.7**	**1.0**	**-31.4%**
Operating CF	7.1	4.1	+76.3%
Net Capex	3.7	2.3	+61%
Net debt	-0.4	4.4	n.m

*Some prior-year figures restated due to a retroactive change in the recognition of tax benefits to subsidise renewable energy in the USA

FY21 Highlights

- **2021 guidance achieved.**
- **Sales** totaled €77.4bn in FY21, +27% above FY20. This is mainly due to (i) the **settlement of commodity derivatives** amid higher prices on commodity market (€4.9bn), (ii) a **higher sales volume** primarily because of the **cooler weather** and **recovery** from the Covid-19 pandemic's aadverse consequences and (iii) the **passthrough of higher cost components,** especially in Germany and the United Kingdom.
- **Operating income amounts to €6.5bn,** the 3.6bn increase being driven by the above-mentioned positive impacts on operational performance but also thanks to (i) **cost saving measures** (+€0.3bn), **agreement with federal authority with nuclear power plants operators** (+€0.6bn) and **valuation of derivatives** (+€2.2bn).
- **Net income** amounted to €4.7bn, compared to €1bn in the previous year. The development of the net income in 2021 financial year reflects asymmetrical valuation effects on unrealized sales and procurement transactions which are the result of sharp increases in commodity prices.
- **Net debt** decreased to €38.8bn (-4.7%). This is mainly due to an increase in the net financial position of €0.7bn that was largely offset by operating cash flow, disposals, and margin payments in the conjunction with the development of commodity prices.
- **Issue of bonds for €1.3bn** (including €800m of green bonds) and another **€1.5bn of green bonds**
- E.ON Group's subsidiary **Essent NV,** a dutch energy supplier, was sold in February 2021 according to a signed agreement with Luminus, a Belgian energy supplier.
- **Drastic short-term measures required to replace Russian gas supply next winter** with contemplated additional LNG & Storage withdrawals

- **2021 guidance achieved.**
- **Net sales** totaled €24.8bn in FY21, +78.4% above FY20. Electricity revenue grew by 75 % to €20.5bn primarily due to the steep rise in the price of electricity last year. Price effects were also the main reason why gas revenue quadrupled to €2.1bn. In addition, Power generation increased by 19.5GWh vs 2020 to 160.8 TWh.
- **EBITDA amounted to €3.6bn, +11% vs 2020** thanks to
  - **Positive impact of (i)** the **good operational performance,** and (ii) the **exceptional trading performance,** which notbly improved margins of lignite and nuclear power stations (+€0.3bn).
  - Partly offset by the **adverse impact of the worst cold snap in a century in Texas** which led to unscheduled plant outages, forcing us to fulfil existing electricity supply commitments with expensive power purchases on the market
- **Strong operating cash flow** in FY21 (+ 76%) thanks to high **margin payments for forward contracts** for electricity, fuel and CO2 certificates. This is also due to the **positive effects of the compensation paid in November 2021 by the German Federal government to RWE for the phaseout of nuclear energy.**
- **Net treasury asset of €0.4bn.** The net debt declined by €4.8bn versus the previous year (€4.4bn). As a result of this, RWE posted a net asset position of €0.4bn as of 31 December 2021. The main reason for this was the excellent free cash flow. The marketdriven increase in the discount rates used to calculate the present value of pension obligations also played a role, as it resulted in a decline in provisions for pensions. A similar effect was exerted by the income generated from managing the plan assets for the pension obligations.
- RWE signed an **agreement with the Danish grid operator Energinet for 1,000 MW its Thor Offshore Wind Farm.**

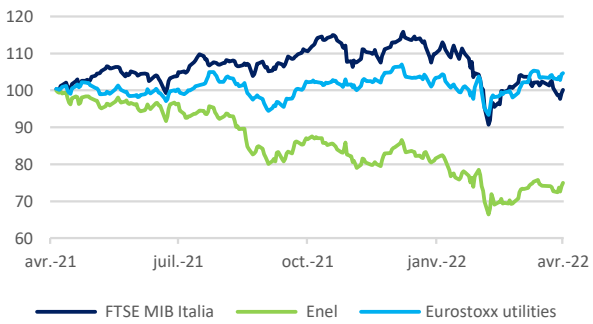
FY22 Outlook

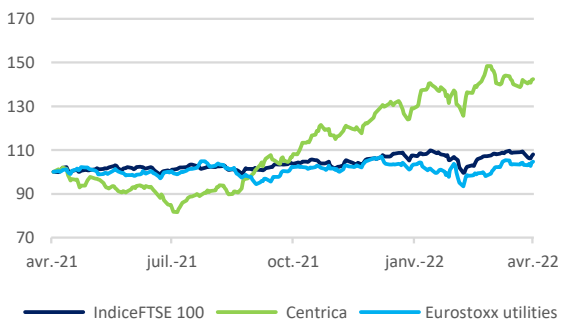
- **FY22 Guidance :**
  - Adjusted EBITDA: €7.6bn to €7.8bn
  - Adjusted net income: between €2.3bn to €2.5bn
  - Net investment: around €5.3bn

- **FY22 Guidance :**
  - EBITDA: €3.6bn to €4bn
  - Adjusted EBIT between €2bn to €2.4bn
  - Adjusted net income between €1.3bn to €1.7bn

enel | centrica

Share Price Perf. Avril 2021 Avril 2022





Key Reported Financials

In billion of €	2021	2020*	Var.
Sales	88.0	66.0	+33.3%
EBITDA	**17.6**	**16.9**	**+3.9%**
Operating Income	7.7	8.4	-9.2%
Recurring net income Gr	**5.6**	**5.2**	**+7.6%**
Net Income Gr Share	**3.2**	**2.6**	**+22.2%**
Operating CF	10.1	11.5	-12.5%
Net Capex	13.0	10.2	+28.5%
Net debt	51.9	45.4	+14.4%

*The 2020 figure has been adjusted, for comparative purposes only, to take into account the effects of the differing classification resulting from the measurement at fair value, at the end of the period, of outstanding contracts for the purchase and sale of commodities settled by physical delivery

In billion of £	2021	2020	Var.
Sales	14.7	12.2	+20%
EBITDA	**1.8**	**1.4**	**+38.5%**
Operating Income	0.9	-0.4	n.m
Recurring net income Gr	**0.2**	**0.4**	**-37.3%**
Net Income Gr Share	**1.2**	**0.0**	**n.a**
Operating CF	3.8	1.1	+254%
Net Capex	0.3	0.5	-29%
Net debt*	0.7	-2.9	n.m

*Net debt has been restated to remove the adjustment for collateral posted/(received).

FY21 Highlights

- **2021 guidance achievded.**
- **Sales** amounted to €88bn (+33.3%), mainly due to:
  - **Positive impact of (i) higher volumes** of electricity produced and sold, (ii) gain realized from the sale of the stake held in Open Fiber S.p.A.
  - party offset by the **negative impact of exchange rates,** mainly in Latin America.
- **EBITDA** totaled €17.6bn, +3.9% due to (i) **Enel Green Power 's operational growth** thanks to to higher production and the commissioning of new renewable plants; (ii) to **Infrastructure and Networks,** thanks to the increasing margin in Latin America alongside better performances associated with improved service quality and network digitalization in Europe.
- **Group net recurring income:** €5.6bn (€5.2bn in 2020, +7.6%):
  - the increase is attributable to the **positive performance of ordinary operations and the lower impact of non-controlling interests,**
  - however **more than offset the higher taxes recorded mainly due to the tax reforms in Argentina and Colombia.**
- **Net financial debt** was up by 14.4% (€51.9bn) compared to 2020 (€45.4bn). This is due to the (i) capital expenditure for the period, (ii) acquisition of an additional stake in Enel Americas and (iii) the adverse exchange rate effect.
- The (i) positive cash flow generated by operations, the **issuance of a non-convertible subordinated perpetual hybrid bond and the sale of the stake held in Open Fiber S.p.A.,** (ii) partially offset the financial needs associated with the above-mentioned events
- **Issue of a £750m Green bound**

- **Revenue increased by 20% to £14.7bn.** This was driven largely by the impact of **higher wholesale commodity prices on Energy Marketing & Trading and Upstream,** and the impact of **higher wholesale prices on retail tariffs in British Gas Energy, Bord Gáis Energy and Centrica Business Solutions.**
- **EBITDA** amounted to £1.8bn, +38.5% vs FY20 benefiting from the above-mentioned positive impacts. In addition, **colder than normal weather** in H1 had a positive effect on British Gas Energy and the other supply businesses, partially offset by the **impact of buying incremental gas and power volumes at higher prices, and higher balancing costs.**
- **Disposal of its North American supply, services and trading business, Direct Energy, to NRG for headline consideration of £2.7bn** on a debt free, cash free basis. The transaction was completed in early 2021 resulting in a profit on disposal of £0.6bn in 2021.
- The net **Cash Flow** was up by 254% compared to 2020 due to (i) higher EBITDA and margin cash inflows, (ii) partly offset by higher pension and tax payments, and related to the proceeds from the sale of Direct Energy on 5 January 2021.
- **Net debt :** Centrica ended the year with a net cash of £0.7bn compared to net debt of £2.9bn at the end of 2020, this is mainly due to received proceeds from the Direct Energy sale and a tight maintained focus on costs, capital expenditure and restructuring spend across the Company.

FY22 Outlook

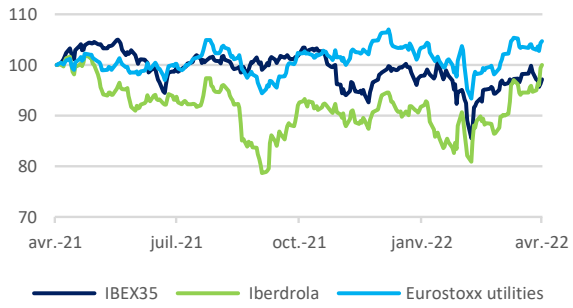
- **FY22 Guidance:**
  - EBITDA: €19.0bn to €19.6bn
  - Ordinary profit: €5.6bn to €5.8bn

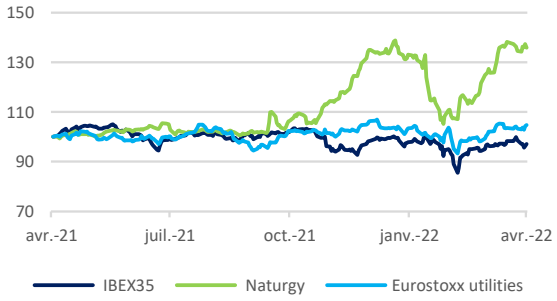
- **No guidance disclosed for 2022**

IBERDROLA

Naturgy

Share Price Perf. Avril 2021 Avril 2022





Key Reported Financials

In billion of €	2021	2020	Var.
Sales	39.1	33.1	+18%
EBITDA	**12.0**	**10.0**	**+19.6%**
Operating Income	7.3	5.6	+32%
Recurring net income Gr	**3,7**	**3.2**	**+15.6%**
Net Income Gr Share	**3.9**	**3.6**	**+8.3%**
Operating CF	8.9	8.2	+8.6%
Net Capex	7.1	6.0	+18.3%
Net debt	39	35.1	+11%

In billion of €	2021	2020	Var.
Sales	22.1	15.3	+44.3%
EBITDA	**3.5**	**3.4**	**+2.3%**
Operating Income	2.1	0.5	+320%
Recurring net income Gr	**1.27**	**0.9**	**+41%**
Net Income Gr Share	**1.2**	**-0.3**	**n.m**
Operating CF	**1.0**	**3.4**	**-70.8%**
Net Capex	1.5	1.3	+16.1%
Net debt	12.8	13.6	-5.7%

FY21 Highlights

- **2021 guidance achieved.**
- **The EBITDA** reported in 2021 increased by 18% compared to 2020, with growth in both the Networks and Electricity Production and Customers business:
  - The **Networks business turned** in a strong operating performance (+13% to €5.4n) in all countries thanks to (i) **increased assets base** in all geographies, (ii) **tariff increases** linked to **regulatory frameworks** in force with especially a full year impact of 2020 New York Rate Case, (iii) **integration of Neoenergia Brasilia. Partly** offset by the negative impacts of the exchange rate effect (-€0.1bn).
  - The **Electricity Production and Customers business** (+24% to €6.4bn) was driven by (i) the increase in both **renewable installed capacity** of 10% and **renewable production** and (ii) despite the lower contribution of the United Kingdom and Mexico, due to the lower margins in the United Kingdom, and the negative impact of the storm in Texas in Mexico.
- **Two non-recurring significant impacts** recorded in 2021 but excluded from recurring net income:
  - -€0.5bn linked to the **UK Government decision to increase the corporate tax** rate from 19% to 25%, effective starting April 1st, 2023.
  - +€0.8bn due to **Spanish Court rulings and legal measures.**
- Net debt increase mainly due to strong capex and FX evolution.

- **2021 guidance achieved.**
- **Net sales** totaled €22,1bn in FY21, +44.3% above FY20, mainly because of **higher demand and better energy prices in the period,** with a particularly positive impact in Energy management activities.
- **EBITDA** reached €3.5bn in the full year 2021, up 2.3% vs. FY20 mainly supported by the gradual recovery of energy demand and the rising commodity prices, particularly gas.
- **Net Income** reached €1.2bn in the full year 2021, compared to €-0.3m vs. FY20. The restructuring costs linked to the employee voluntary departure plan in Spain, and the breakup penalties associated to the cease of certain gas contracts in the last quarter of the year, were almost fully compensated by the net gains from the disposal of CGE Chile.
- **Total Capex** amounted to €1.5bn in 2021, up 16% vs. FY20. This increase is mainly explained by greater investments in renewable developments in Australia, Spain & the USA, as well as by higherinvestments in supply (commercial efforts and digitization).
- **The Net debt** reduction and deleveraging was mainly driven by the disposal of Naturgy's Chilean electricity networks subsidiary in Chile and the cash payments resulting from the agreement to exit UFG.
- **Presentation of Geminis project aimed at demerging Naturgy in two separate entities:** one dedicated to liberalized business (Renewables and New Businesses, Energy Management, Supply) and the other dedicated to Regulated Gas & Power distribution networks.

FY22 Outlook

- **FY22 Guidance:**
  - Net profit: €4.0bn to €4.2bn

- **No guidance disclosed for 2022**

The case of Hydrogen Valleys around the North Sea

Author

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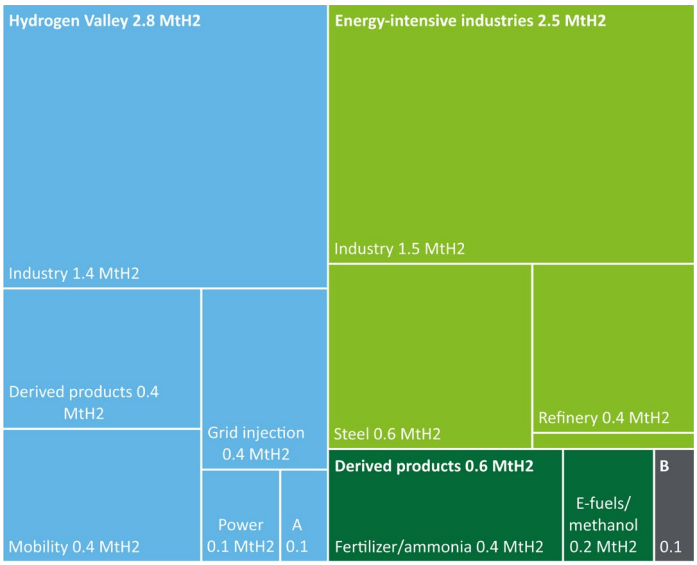
The growth of a European clean hydrogen economy has so far rested on the "Hydrogen Valley" business model, by which an ecosystem of end-users spawns around a large-scale supply project. By minimising distance between supply and demand in tightly concentrated hydrogen clusters, Hydrogen Valleys minimise infrastructure costs and the risk of stranded assets. This coordination partly solves the ever-present "chicken and egg" dilemma of how to secure sufficient volumes on the supply and demand sides to make both types of projects viable. As such, the Valley approach unlocks trial-and-error, with each cluster carving its own vision out of its existing resources. However, this approach prioritises the independent growth of each Valley over the planning of a coherent and interconnected trans-European hydrogen market. Proponents of a less organic growth planned at EU level have met resistance from some stakeholders, who argue that local clusters are needed until infrastructure costs are sufficiently low.

Figure 1: Announced clean hydrogen volumes in Europe by associated end-use in 2030

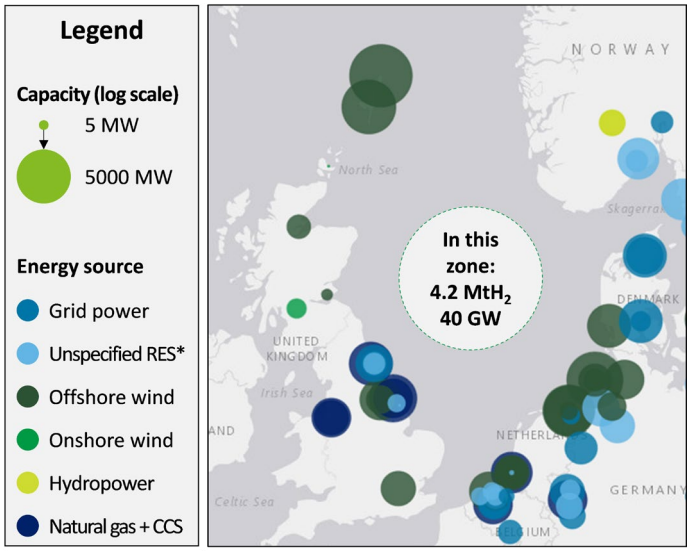


Source: H2-Tracker, Deloitte Economic Advisory
A: Buildings; **B:** Other end-uses, including mobility or power generation

Delving into real project data allows us to get a better sense of the importance of Hydrogen Valleys in today's project pipeline. Our H2-Tracker analytical tool crawls online sources for new announcements and feeds processed information into a growing dataset tracking over 300 hydrogen projects in Europe. This wealth of data on hydrogen supply projects is then used to model projections of capacity, quantities produced, and costs, which unlocks a full perspective of clean hydrogen supply in Europe. Coming back to our Hydrogen Valleys, the high update frequency of our H2-Tracker database enables us to track with precision the evolution of those clusters over time.

Hydrogen Valleys account for more than half of announced clean hydrogen volumes by 2030. As figure 1 shows, based on clean hydrogen supply projects announced so far in Europe, Hydrogen Valley-type initiatives add up to nearly 3 million tonnes of hydrogen (MtH2). Demand for clean hydrogen follows the order dictated by economies of scale and by each end-use's cost to switch to hydrogen. Therefore, industrial processes that can swap unabated hydrogen feedstock or cost-effectively replace machinery to start using hydrogen are the first buyers. These processes often revolve around refining, and steel or ammonia-making. By contrast, hydrogen-based mobility and power generation total less than 1 GW of dedicated supply capacity. Hydrogen mobility suffers from poor economies of scale for the required refuelling station network and for the large number of individual owners switching to costly hydrogen fuel cell vehicles. Moreover, current roundtrip energy efficiencies of below 40% are simply too low for hydrogen-fired power generation projects to be viable.

Figure 2: A snapshot of clean hydrogen supply projects around the North Sea



Source: H2-Tracker, Deloitte Economic Advisory
*: Unspecified renewable energy sources, which are often ongrid electrolysis projects

Today, the North Sea shorelines host more than two-thirds of all announced supply capacity in Europe. Figure 2 reveals a high density of gigawatt-scale supply projects in the North Sea area, stemming from three factors. First, the North Sea gold rush is above all about local natural resources. Strong winds above vast, shallow and flat sandbanks heavily favour offshore wind farms, which can be used to power electrolyzers more than 4000 hours per year. Large natural gas reserves in, e.g., Norway and the UK can be used to make hydrogen when full, and to store hydrogen or captured CO2 when depleted. Second, the North Sea area is highly industrialised. As explained above, the presence of large CO2-intensive industrial clusters makes a strong case for hydrogen projects, especially Hydrogen Valleys. Finally, the area boasts a densely connected gas network that can be retrofitted for hydrogen use. **This benefits domestic hydrogen production, but also facilitates the distribution of imported hydrogen.**

Hydrogen Valleys are a cost-effective way to kick-start the hydrogen economy without requiring strenuous efforts to coordinate and finance network developments before markets emerge. However, a cluster-based approach will not by itself suffice to meet the expected demand by as early as 2030. Germany acknowledges this supply gap in its 2020 Hydrogen Strategy: imports from outside Europe are needed to complement domestic production. Again, the North Sea area is well-suited to become a hydrogen trading hub. Belgian, Dutch, and German industrial ports have already positioned themselves as the future seaborne clean hydrogen imports gateways into the EU. Germany is pioneering hydrogen imports with its work on the H2Global scheme, which it will use to support the economic viability of the first shipments. As gas producers, the UK and Norway are poised to be producers, consumers, and exporters of clean hydrogen. In a subsequent stage, governments and industrials will need to collaborate to connect the different Valleys, import hubs, and demand centres. Through this effort, today's dawning hydrogen economy will evolve over time into an integrated European clean gas market.

Policy and Regulation Radar

This section summarizes the key changes respectively in the EU or in the country regulation that may significantly affect the power and utilities companies.

What is changing in the EU regulation?

EU Taxonomy: Commission presents Complementary Climate Delegated Act to accelerate decarbonisation

Key features

On February 2, 2022, the European Commission presented a **Taxonomy Complementary Climate Delegated Act on climate change mitigation and adaptation** covering certain **gas and nuclear activities.**

According to the Commission, a great deal of private investment is needed for the EU to become climate neutral by 2050. The EU Taxonomy aims to guide private investment to **activities that are needed to achieve climate neutrality.** The Taxonomy classification does not determine whether a certain technology will or will not be part of Member State energy mixes. The objective is to step up the transition, by drawing on **all possible solutions to reach European climate goals.**

Insights

The Commission **considers that there is a role for private investment in gas and nuclear activities in the transition,** taking account of scientific advice and current technological progress. The gas and nuclear activities selected are in line with the EU's climate and environmental objectives and **will allow the EU to accelerate the shift from more polluting activities, such as coal generation, towards a climate-neutral future, mostly based on renewable energy sources.** In particular, the approved Complementary Climate Delegate Act:

- **Introduces additional economic activities from the energy sector into the EU Taxonomy.** The text sets out clear and strict conditions under which certain nuclear and gas activities can be added as transitional activities to those already covered by the first Delegated Act on climate mitigation and adaptation, applicable since 1 January 2022. Main stringent conditions are: **for both gas and nuclear, that they contribute to the transition to climate neutrality;** for nuclear, that it fulfils nuclear and environmental safety requirements; and for gas, that it contributes to the transition from coal to renewables.

- **Introduces specific disclosure requirements for businesses related to their activities in the gas and nuclear energy sectors.** To ensure transparency, the Commission amended the Taxonomy Disclosures Delegated Act, so that investors can identify which investment opportunities include gas or nuclear activities and make informed choices.

Next steps

The College of Commissioners reached a political agreement on the text, which was formally adopted once translations are available in all EU languages (March 9, 2022). As for the other Delegated Acts under the Taxonomy Regulation, the European Parliament and the Council (who have delegated the power to the Commission to adopt Delegated Acts under the Taxonomy Regulation) will have four months to scrutinise the document, and, should they find it necessary, to object to it. Both institutions may request an additional two months of scrutiny time. Once the scrutiny period is over and if neither of the co-legislators objects, the Complementary Delegated Act will enter into force and apply as of 1 January 2023.

Link: *EU Taxonomy: Commission presents Complementary Climate Delegated Act to accelerate decarbonization*

REPowerEU: Joint European action for more affordable, secure and sustainable energy

Key features

On March 8, 2022, the European Commission proposed an **outline of a plan to make Europe independent from Russian fossil fuels well before 2030,** starting with gas, in light of Russia's invasion of Ukraine.

This plan also outlines a **series of measures to respond to rising energy prices in Europe and to replenish gas stocks for next winter.** Although Europe has been facing increased energy prices for several months, uncertainty on supply is exacerbating the problem in recent times. In this context, **REPowerEU will seek to diversify gas supplies, speed up the roll-out of renewable gases and replace gas in heating and power generation.** According to the European Commission, this can reduce EU demand for Russian gas by two thirds before the end of the year.

Insights

According to the European Commission, phasing European's dependence on fossil fuels from Russia can be done before 2030. To do so, **the Commission proposes to develop a REPowerEU plan that will increase the resilience of the EU-wide energy system based on two pillars:**

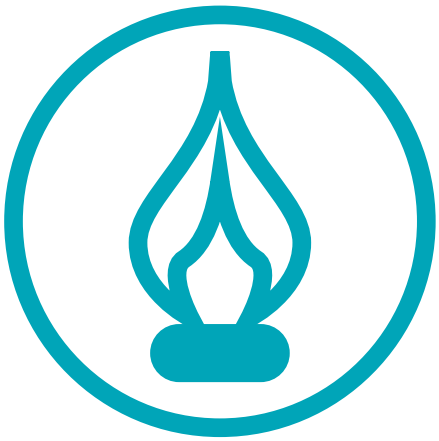
- **Diversifying gas supplies,** via higher Liquefied Natural Gas (LNG) and pipeline imports from non-Russian suppliers, and larger volumes of biomethane and renewable hydrogen production and imports.
- **Reducing faster the use of fossil fuels in European homes, buildings, industry, and power system,** by boosting energy efficiency, increasing renewables and electrification, and addressing infrastructure bottlenecks.

Full implementation of the Commission's 'Fit for 55' proposals would already reduce our annual fossil gas consumption by 30 percent, equivalent to 100 billion cubic metres (bcm) by 2030. According to the Commission, with the measures in the REPowerEU plan, **Europe could gradually remove at least 155 bcm of fossil gas use,** which is equivalent to the volume imported from Russia in 2021. Nearly two thirds of that reduction can be achieved within a year, ending the EU's overdependence on a single supplier. The Commission proposes to work with Member States to identify the most suitable projects to meet these objectives, building on the extensive work done already on national Recovery and Resilience Plans.

Next steps

The Commission will work in the development of the REPowerEU plan in the upcoming weeks and months.

Link: *REPowerEU: Joint European action for more affordable, secure and sustainable energy*



The European Council has adopted conclusions on several aspects, including energy, during its 24-25 March session

Key features

On 24-25 March 2022, **the European Council adopted conclusions** on the Russian military aggression against Ukraine, security and defence, **energy,** economic issues, COVID-19, external relations and the election of the President of the European Council.

Insights

In particular, regarding Energy, main conclusions adopted by the European Council are the following:

- **The European Union will phase out its dependency on Russian gas, oil and coal imports as soon as possible, as set out in the Versailles Declaration.** Therefore, the European Council looks forward to the comprehensive and ambitious plan, elaborated in close coordination with Member States, that the Commission will submit to this effect by the end of May 2022.
- **Sustained high energy prices have an increasingly negative impact on citizens and businesses,** which is further compounded by the Russian military aggression against Ukraine. The European Council discussed how to provide further relief to the most vulnerable consumers and how to support European businesses in the short term. In this regard, the European Council: **(i) invites the Member States and the Commission to continue to make best use of the toolbox, including the new State aid temporary crisis framework,** as a time-limited departure from the status quo. As proposed by the Commission, **temporary taxation of or regulatory interventions on windfall profits can be a useful source of national financing; (ii) tasks the Council and the Commission, as a matter of urgency, to reach out to the energy stakeholders,** and to discuss, if and how, **the short-term options as presented by the Commission would contribute to reducing the gas price and addressing its contagion effect on electricity markets,** taking into account national circumstances; and **(iii) calls on the Commission to submit proposals that effectively address the problem of excessive electricity prices while preserving the integrity of the Single Market,** maintaining incentives for the green transition, preserving the security of supply and avoiding disproportionate budgetary costs.
- The European Council reviewed the EU's immediate term preparedness and tasked the Council to examine the proposals by the Commission on EU gas storage policy duly taking into account and addressing the interests of the Member States with significant storage capacity in order to ensure a fair balance. **Refilling of gas storage across the Union should start as soon as possible,** taking fully into account national preparedness measures.
- Energy security and climate neutrality **can only be achieved if the European Union relies on a robust and fully interconnected internal electricity market and a well-functioning carbon market.**

Next steps

The European Council will revert to all these issues at a special meeting. Additionally, the European Union will continue to coordinate with international partners in order to ensure adequate supply and to mitigate the increase of energy prices.

Link: *The European Council has adopted conclusions on several aspects, including energy, during its 24-25 March session*

France			
Topic	**Key features**	**Insights**	**Next Steps**
Tariff shield	On September 30, 2021, the Government announced the introduction of tariff shield for 2022 aimed at limiting the increase in the regulated sales tariffs for residential customers to 4% (including tax). This tariff shield is based on two measures provided for in the 2022 Finance Act: • a reduction in the domestic tax on the final consumption of electricity (TICFE) applicable from 1 February 2022; • the possibility for the Government to set the level of tariffs by decree at a lower level than the Energy Regulation Commission's (CRE's) proposal if the latter is still higher than 4% by including the previous lever.	This mechanism was used in January 2022 and allows to limit the increase in residential and non-residential blue tariffs to 4%. In return the government granted the possibility of a catch-up in 2023 of the losses borne by Power companies as well as a compensating mechanism for market offer suppliers. Starting February 1st, 2022, this measure has been extended for regulated sales tariffs applicable to non-residential customers.	The application for future period is to be follow-up
Additional ARENH volumes	In the context of an unprecedented rise in electricity prices, the French Government and in order to Support the above mentioned tariff shield, the Government decide an exceptional increase of 20TWh in the volume of the ARENH to be delivered in 2022 at a price of €46.20/MWh. CRE will allocate the additional ARENH volumes between suppliers according to the same distribution as for the delivery period that began on 1 January 2022. The Government published on March 12, 2022 the final Decree relating to the application of the mechanism.	Eligible suppliers, will have to sell EDF the same volume that will be transferred to them by EDF under this additional allocation, at €257/MWh. On March 13, 2022, EDF announced that he impact of the regulatory measures on the Group's EBITDA for 2022 is assessed at approximately -€10.2 billion However the adverse impact on EDF Financial statements might be increased in connection with (i) the shortage in French nuclear output and (ii) the context of an extremely volatile market.	EDF announced its intention to ask a relief of the measure considering its adverse impact on Group's Financial position
Emergency supply	Emergency supply (the taking over by a supplier of the customers of a defaulting supplier) is provided for in the French Energy Code. It allows the Minister in charge of Energy to launch a tender with the support of the Energy Regulation Commission (CRE). In November 2021 the French State designated by decree emergency suppliers on a transitional basis (EDF or ELD, as the case may be). The provision was implemented when two suppliers defaulted in November and December 2021;	In November 2021 the French State designated by decree emergency suppliers on a transitional basis (EDF or another, as the case may be). The provision was implemented when two suppliers defaulted in November and December 2021.	Future application to be follow-up

United Kingdom			
Topic	**Key features**	**Insights**	**Next Steps**
OFGEM UK energy price cap	Ofgem confirmed the energy price cap increase of £693 for those on default tariffs paying direct debit and an increase of £708 for prepayment customers which came into play on 1st April. This 54% increase was driven the record rise in global gas prices across the last two quarters as wholesale prices quadrupled in 2021. This is part of a regular review of energy price caps for domestic consumers in Great Britain (GB) which covers a six-month period. Ofgem is considering options of whether to have more frequent reviews of the price cap in response to more volatile gas and electricity prices in GB.	This change will provide existing energy retailers with the opportunity to cover their costs of providing energy to customers given the recent increase in wholesale gas and electricity prices. The previous price cap update in August 2021 did not reflect the record rise in gas prices which has taken place since this adjustment. Hence, this large increase in the cap is necessary because otherwise energy companies would get less from customers than they paid for the energy at wholesale prices. In fact, over the last year 29 energy companies have left the UK market, affecting over 4 million domestic customers. However, this does represent a significant increase for households who are facing higher energy bills which is outstripping growth in earnings.	Ofgem published the cap level on 3rd February 2022 to cover the period 1 April 2022 to 30 September 2022. The next price cap review update is expected in September 2022 to cover a period of six months from 1 October 2022.
OFGEM Two time-limited measures to help stabilize the energy market as well as a consultation to change the parameters of the measures	• Following the consultation on short-term interventions published at the close of 2021, Ofgem is introducing two time-limited measures with the aim of stabilizing the energy market. • The two measures are; 01. All suppliers are obliged to offer incumbent customers the same deals that are available to new customers 02. Supplies required to pay a Market Stabilization Charge (MSC) to any newly acquired customer's old supplier. This charge is only triggered is wholesale prices fall sufficiently below the price cap level.	This is a short term compliance threat to P&U companies but should benefit them in the longer run. These two short-term interventions have been introduced to protect consumers from risks and market volatility. Measure one will ensure all customers can benefit when wholesale prices fall as they will have access to all tariffs available in the market. Measure two, combined with tougher financial regulation, will ensure that energy companies will not take inordinate financial risks. Furthermore, suppliers who have purchased energy in advance for their customers won't be penalized and customers will be able to switch to benefit from cheaper tariffs when prices begin to fall. Suppliers will be incentivized to better manage risks which severe market volatility poses	Reaction of French energy regulatory commission is to be followed
Developing the UK Emissions Trading Scheme (UK ETS)	• The UK Emissions Trading Scheme (ETS) Authority (UK Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs for Northern Ireland, hereinafter 'the Authority') are seeking input on a number of proposals to develop the UK Emissions Trading Scheme (UK ETS). • The consultation seeks views in a number of areas, including proposed changes to align the UK ETS cap and trajectory to the UK Government's net zero target. It also sets out proposals on possible changes to the rules of current sectors, and potentially new sectors, covered by the UK ETS to ensure that more greenhouse gas emissions are covered by the scheme.	The consultation is open to any entity or individuals to response, but it is expected to be of particular interest to: • individual companies and representatives of industrial, power and aviation sectors with obligations under the UK ETS • environmental groups • individual companies and representatives of maritime, waste, greenhouse gas removals and agricultural sectors As the UK ETS scheme develops and evolves, companies will need to consider how this impacts their business activities, and what actions they need to take in response. This may include providing a response and information to government on this consultation and developing strategies to adapt to potential changes in the UK ETS.	The consultation opened on 25 March 2022. Companies and individuals have until 17 June 2022 to provide their responses to this consultation.

Italy			
Topic	**Key features**	**Insights**	**Next Steps**
Measures to support economic operators for Covid-19 and energy prices impacts	• Following the spike in power prices, the Italian government published a Decree to support companies affected by Covid as well as by power price increases. • Main features of the Decree are the following: – Companies have to choose between a discount on the total price or a **tax credit for the expenses borne for energy efficiency interventions** (building renovation, restoration of buildings' frontage, reduction of seismic risk, installation of solar systems and infrastructure for charging e-vehicles). – The Authority for Energy, Networks and Environment (**"ARERA"**), will delete for the first quarter of 2022, the rates relating to general system charges for users with available power equal to or greater than 16.5 kW. – The **energy intensive companies** that in the last 3 months of 2021 borne a power costs' increase higher than 30% respect to year 2019, have the right to obtain a contribution to partially compensate the additional costs incurred: the contribution is equal to 20% of the expenses borne for the power purchased/used in 2022 Q1; – **A two-way compensation mechanism is implemented on Renewables plants** in order to limit the increase of the power market prices.	• The two-way energy price compensation mechanism will be applied to electricity fed into the grid by: – Photovoltaic plants with a capacity higher than 0.02 MW and which benefit from fixed premiums deriving from the Conto Energia incentive mechanism (which is fixed/unrelated to market prices), and – Solar, hydroelectric, geothermal and wind power plants with a capacity higher than 0.02 MW and which do not benefit from incentive mechanisms. • To this end, the GSE (the state-owned company in charge of promoting and supporting renewable energy sources in Italy) will calculate the difference between (i) an average reference price equal to the average of the hourly zonal prices recorded from the date on which that plant entered into operation until 31 December 2020 and (ii) the hourly zonal market price of electricity applicable to that plant or, if a PPA exists, the average price indicated in such PPA. • The two-way compensation mechanism works as follows: – if the Delta is positive, the GSE shall pay the Delta to the producer; – if the Delta is negative, the GSE adjusts or requests from the producer the Delta (by way of set off with the tariff or other incentive payable to the producer). • The above provisions shall not apply to plants for which a PPA which meets the following conditions (i) it was entered into prior to 27 January 2022, (ii) it is not linked to the spot energy markets (i.e. it is fixed price) and (iii) in any event, the PPA price, calculated as an average over the term of the PPA, does not exceed by more than 10% the above mentioned value.	ARERA shall detail, how the compensation mechanism to which certain renewable energy plants are subject, will works.

Germany			
Topic	**Key features**	**Insights**	**Next Steps**
Immediate Energy Measures Package **"Easter Package"**	In 2021, Germany will cover 42 % of its electricity needs with renewables. By 2035 it should be 100% - for reasons of climate protection. With the "Immediate Energy Measures Package" the Minister for Climate Protection is presenting the largest energy policy amendment in decades. The principle is anchored that the **use of renewable energies is in the overriding public interest and serves public safety.** By 2030, at least 80% of German electricity consumption should come from renewables. To achieve this target five laws are being amended: the Renewable Energy Sources Act (EEG), the Offshore Wind Energy Act (WindSeeG), the Energy Industry Act (EnWG), the Federal Requirements Plan Act (BBPlG), the Grid Expansion Acceleration Act (NABEG) and other laws and regulations in energy law.	**Photovoltaics:** In order to achieve the ambitious goal, new areas are to be made available for the expansion of photovoltaics. The remuneration for solar power will be increased significantly. That should take effect as early as 2022. **Wind:** Low-wind locations are also to be developed more intensively. The expansion targets for offshore wind energy are being increased to at least 30 gigawatts by 2030, at least 40 gigawatts by 2035 and at least 70 gigawatts by 2045. In addition, the requirements plan for the expansion of the transmission grids will be updated. 19 new grid expansion projects will be included and 17 grid expansion projects will be changed. The changes are expected to come into effect as early as July 1st. **Energy efficiency:** more energy efficiency in buildings and progress in the CO2 targets for the transport sector. The plan that States should allocate two percent of their area to wind energy is still controversial.	The expansion of renewable energies and grids should be fostered by removing obstacles and streamlining planning and approval processes. In addition, the federal requirements plan for the expansion of the transmission grids is to be updated and new projects are to be included so that the grids can keep pace with the expansion of renewable energies. With the abolition of the EEG surcharge, the regulations for self-consumption and the privileging of the industry are to be simplified enormously.
CO2 price increase	CO2 pricing is one of the Federal Government's four central instruments for achieving the 2030 climate targets. The other instruments are the promotion of climate protection measures, relieving the burden on citizens and research and development for climate protection.	The national CO2 price for fossil fuels increased from 25 to 30 euros per tonne on January 1, 2022.	Companies subject to trading must have entered their fuel emissions in the nEHS (national emission trading system) register by 31st of July 2022.

Spain			
Topic	**Key features**	**Insights**	**Next Steps**
Approval of the National response Plan for the consequences of the war in Ukraine	The Government approved, on March 29, 2022, a Decree which adopts urgent measures in response to the economic and social consequences of the war in Ukraine. One of the main objectives of this set of urgent measures is to **reach lower fuel and electricity prices.** The Plan estimates to mobilize **€16bn to the Government.**	The Plan aims at **following the coordinated response in Europe** after the European Council which took place during March. Some of the instruments established in Royal Decree-Law 6/2022 are the following: • **Extension of electricity tax** reductions until June 30, 2022, including VAT reduction (set at 10%), the suspension of the 7% tax on electricity generation and a reduction in the special electricity tax (set at 0.5%). • **Promotion of renewables.** Renewable projects (until 150MW of capacity in wind projects and 75MW of capacity in photovoltaic projects) will be accelerated with reduction in requirements for approvals and self-consumption will be facilitated. • **Electro-intensive industry.** the Plan aims a 80% reduction in tolls paid by the electricity-intensive industry for the use of grids, for an amount equivalent over 225 million Euros. • **Strengthening of the Social Electricity Tariff.** This tool will be more flexible and will be automatically renewed for the next two years according to several requirements.	The Decree shouldbe validated by the Spanish Parliament.
Approval of the Biogas Roadmap	On March 22, 2022, **the Spanish Government approved the Biogas Roadmap,** after the publication of the Draft version in 2021. This roadmap aims at promoting the production of gas from renewable sources and reducing fossil fuels.	The Biogas Roadmap is part of the Strategic Project for the Recovery and Economic Transformation of Renewable Energy, Renewable Hydrogen and Storage ("PERTE ERHA"). The roadmap plans to **almost quadruple the production of gas of renewable origin in Spain** by the end of the decade. It also aims at promoting its use to **produce electricity and useful heat for industry and heavy transport,** and to be **injected into gas pipelines once transformed into biomethane.**	After approval, the Spanish Government shall announce that the **terms and conditions of the calls for proposals to grant 150 million Euros** from the Recovery, Transformation and Resilience Plan to **unique biogas projects will soon be published** in order to support biogas projects.
Spanish Government approves the Electrical Plan 2021-2026 for electric transmission grid	The Spanish Government approved, on March 22, 2022, the Plan for development of the electric transmission grid for 2021-2026. This Plan has a budget of €7bn.	The main characteristics of this Plan are: • **New energy infrastructure to connect renewable facilities in the areas with best resources and low environmental impact.** This action shall increase renewable energy production over 67% by reducing gas power generation and energy consumption. • Approximately, €1.9bn will be for renewable facilities integration and **€1.3bn for international connections grid.**	This development could modify due to efficiency circumstances or new critical developments. So, during 2023 will start the new process for Plan 2024-2029 in order to include new facilities associated to storage or offshore projects.

Snapshot on surveys and publications

Deloitte

2022 power and utilities industry outlook – February 2022
This paper explores five trends that will likely impact the industry in 2022, from enhancing decarbonization and resiliency strategies, to deploying 5G and cloud technologies, to harnessing flexible load and supporting building electrification
Link to the survey

2022 renewable energy industry outlook – February 2022
A US supportive administration coupled with rapid technology improvements and decreasing costs promote an optimistic future for the renewable energy industry. Explore how the five trends outlined in the 2022 renewable energy industry outlook have the possibility to shape the future of the renewable energy growth story.
Link to the survey

Enablers to become the hydrogen economy superpower:
Closing the hydrogen capabilities gap in the GCC – February 2022
At COP26, over 190 countries agreed to finalize the outstanding elements of the Paris Agreement rulebook. Amid this global energy transition, GCC countries have set ambitious agendas to increase the share of renewables in their energy mix, not only to meet the Paris Agreement targets on the one hand but also to prepare for the gradual decline in demand for fossil fuels from global markets.
Link to the survey

Energy Transition Trends 2022: Getting to net-zero – February 2022
This survey of more than 2,800 executives from a broad range of industries shines a light on the biggest challenges and opportunities facing industry leaders over the next 12 months as they plan and execute their decarbonisation strategies.
Link to the survey

Carbon-proofing the grid: Increasing renewables and resilience – February 2022
With the threat of climate change, it behooves utilities to consider doubling down on carbon mitigation and adaption–especially as the cost of carbon-proofing is lower than the cost of inaction for utilities and their customers.
Link to the survey

Agencies or research institutes

International Energy Agency

Climate Infrastructure Investing: Risks and Opportunities for Unlisted Renewables – March 2022

Climate change and decarbonization objectives are driving governments and investors to consider clean energy investing. But do investments in clean energy make financial sense? This is the question that a series of joint publications by the International Energy Agency and Imperial College London have sought to answer. The objective is to establish greater financial transparency and provide more data to help financial institutions and policymakers participate in the energy transition.
Link to the survey

How Governments Support Clean Energy Start-ups – March 2022

This report highlights recent initiatives to inspire policy action at a time when innovation leadership by the public and private sectors is critical to meeting the net zero challenge. Countries around the world strive to become home to the next major company emerging from a start-up with a disruptive clean energy invention, and with good reason.
Link to the survey

Global Energy Review: CO2 Emissions in 2021 – March 2022

The global CO2 emissions and energy demand numbers are based on the IEA's detailed region-by-region and fuel-by-fuel analysis, drawing on the latest official national data and publicly available energy, economic and weather data. Combined with the methane emissions estimates published by the IEA and estimates of nitrous oxide and flaring related CO2 emissions, this new analysis shows that overall greenhouse gas emissions from energy rose to their highest ever level in 2021.
Link to the survey

A 10-Point Plan to Reduce the European Union's Reliance on Russian Natural Gas – March 2022

Measures implemented this year could bring down gas imports from Russia by over one-third, with additional temporary options to deepen these cuts to well over half while still lowering emissions.
Link to the survey

Russian supplies to global energy markets – February 2022

As a major producer and exporter of both oil and natural gas, Russia has a significant role in global energy markets. Russia's invasion of Ukraine on 24 February 2022 has potentially serious implications for international energy security. For this reason, the IEA is providing factual and up-to-date information on Russia's oil and natural gas supplies.
Link to the survey

Global Methane Tracker 2022 – February 2022

The 2022 update of the IEA Global Methane Tracker provides, for the first time, a complete set of country-level estimates for methane emissions from the energy sector, making the Tracker an indispensable resource in the fight to bring down these emissions and implement the new Global Methane Pledge.
Link to the survey

Gas Market Report, Q1 2022 – January 2022

Global natural gas consumption rebounded by 4.6% in 2021, more than double the decline seen in 2020. The strong demand growth in 2021 was driven by the economic recovery that followed the previous year's lockdowns and by a succession of extreme weather events. Supply did not keep pace which, combined with unexpected outages, led to tight markets and steep price increases, putting the brakes on demand growth in the second half of 2021.
Link to the survey

Energy Prices: Overview – January 2022

This overview presents a selection of data from the IEA Energy prices database. This database includes annual energy prices data for more than 100 non-OECD countries, for gasoline, automotive diesel, natural gas, electricity and other products, and data on end-use prices and taxes updated quarterly for OECD countries.
Link to the survey

Electricity Market Report - January 2022

The year 2021 placed exceptional demands on electricity markets around the world. Strong economic growth, combined with colder winters and warmer summers, boosted global electricity demand by more than 6% – the largest increase since the recovery from the financial crisis in 2010.
Link to the survey

In order to gain access to studies and analysis from IEA you have to create an account to be able to download the above publications.

European Commission

Europe's energy crisis conundrum – March 2022

This Brief explores the causes of the crisis, analyses its impacts and proposes strategic responses in the short, medium and long term to bolster the EU's systemic resilience to energy market volatility in a context of radical decarbonisation. The overriding premise of the Brief is that the EU's ability to transition to a carbon neutral economy while navigating the accompanying challenges and instability will foreshadow and inform processes across the globe, and predetermine the global net-zero trajectory.
Link to the survey

Resilience of the nuclear sector in Europe in the face of pandemic risks – March 2022

The COVID-19 pandemic has had a substantial impact on the functioning of our societies and economies. Like any other sector, the nuclear industry had to adapt to these sudden new constraints and implement long-term strategies to ensure the continuous supply of electricity and radionuclides.
Link to the survey

Study on the Central and South Eastern Europe energy connectivity (CESEC) cooperation on electricity grid development and renewables – March 2022

This report provides a detailed analysis of the potential for cost-effective renewable energy projects and associated infrastructure requirements in the CESEC region, in the short and long terms of 2030 and 2050, respectively. The analysis has an explicit focus on cross-border cooperation among CESEC members, as opposed to separate assessments of individual countries.
Link to the survey

Modelling the 2020 Greek electricity system using Plexos – March 2022

The Joint Research Centre (JRC) of the European Commission has recently undertaken several research activities related to natural gas and electricity sector coupling. These activities are framed within the Regulation (EU) No 2017/1938 concerning measures to safeguard the security of gas supply and encompass various operational and policy challenges such as the identification of critical gas-fired power plants in interconnected natural gas and electricity systems as well as the elaboration of risk assessments in joint energy networks.
Link to the survey

Impact of storage obligations on the EU gas market – February 2022

Due to the sustained and persistent increase in gas prices observed in the last months of 2021, the Directorate-General for Energy (DG ENER) has requested the Joint Research Centre (JRC) to simulate the current short-term gas market using the gas module of the METIS software. The goal of these quantitative model-based analyses is to derive economic insights at European Union (EU) level and explore some policy options.
Link to the survey

Roundtable on supporting European expertise in nuclear decommissioning – February 2022

The aim of the roundtable was to assess the potential of joint EU actions to address two main areas in decommissioning: technological challenges, including standardisation and human competences, including education and training. In this perspective of stimulating joint European initiatives, the roundtable brought together industry, research organisations as well as European and international actors, including the International Atomic Energy Agency, to share their experiences in these fields.
Link to the survey

Horizon scanning for nuclear safety and security yearly report 2021 – February 2022

Horizon Scanning (HS) is a systematic outlook to detect early signs of potentially important developments. JRC.I.2 unit introduced the methodology in 2016 and, in collaboration with partner JRC Knowledge Management Units, tested it for a horizon scanning process at JRC level. JRC.G.9 benefited from this support and followed the methodology in subsequent years.
Link to the survey

Study on the applicability of the regulatory framework for nuclear facilities to fusion facilities – February 2022

The objective of this study is to consider the specific risks of fusion facilities and to develop a skeletal structure of a regulatory framework specific for fusion facilities. It will be analysed to identify which parts of the existing framework for fission facilities is considered important for fusion facilities.
Link to the survey

The road to energy efficiency – February 2022

This study provides an analysis of the gaps in EU policies aimed at increasing industrial energy efficiency, an assessment of the ability of the electricity grid to absorb large increases in renewables, and an evaluation of the energy efficiency potential of the Renovation Wave. Links to the proposed Fit for 55 package are also made for all three topics.
Link to the survey

Simulating the electricity price hike in 2021 – February 2022

This study carries out an analysis on the operation of the European power system in 2021, and with alternative counterfactual settings in order to gain insight into causes and effects of the electricity price spike. The electricity market conditions are analysed using the METIS power system model with particular respect to the impact of weather, renewable capacity additions, and fuel prices.
Link to the survey

Broader approach (Cutting-edge fusion energy research activities) – January 2022

Transitioning to a decarbonised, climate-friendly society is one of the key challenges of modern times. A major component is the creation of a diverse, secure and climate-friendly energy mix. Fusion research aims to help reach this goal by developing the promising technology of fusion energy as a clean, safe power source for the future.
Link to the survey

External hazards related events . Volume I, Main report – January 2022

Topical studies are a major product of the European Clearinghouse providing in-depth assessment of safety significant events and generic safety issues. External hazards are a major challenge to nuclear safety as the Fukushima-Daiichi accident has shown. This is the second topical study from the European Clearinghouse on this topic taking into account recent nuclear power plant events in Europe and worldwide.
Link to the survey

The impact of PCI projects on the current and future European power & gas systems – January 2022
Ahead of the two-day European Council meeting (24 and 25 March), Eurelectric President Jean-Bernard Lévy wrote to EU leaders, expressing the commitment of the electricity industry to be fully carbon-neutral well before 2050 and calling for more investments in solutions to help the EU to reduce its dependency on fossil fuel imports.
Link to the survey

Eurelectric

Letter to European Council: Why electricity is key to EU energy security – March 2022
The report underlines the advantage of electricity to deliver a sustainable and cost-efficiency energy transition across EU Member States, benefitting all business and individual consumers, creating jobs and supporting communities in their energy transition. To achieve these objectives, the Presidency team has defined four pillars of its shared vision of the EU Green Deal.
Link to the survey

Zero-emission mobility: cross-industry coalition calls for robust policy framework – March 2022
As EU environment ministers meet to discuss the EU Emissions Trading System (EU ETS), Eurelectric highlights that there is scope for higher ambition in the proposals to align the system with the 2030 climate target. Eurelectric is supporting the overall direction of the Commission's proposals to reform the ETS as part of the 'Fit for 55' package.
Link to the survey

Room to improve... Where ambition can be increased in EU ETS plans – March 2022
As EU environment ministers meet to discuss the EU Emissions Trading System (EU ETS), Eurelectric highlights that there is scope for higher ambition in the proposals to align the system with the 2030 climate target. Eurelectric is supporting the overall direction of the Commission's proposals to reform the ETS as part of the 'Fit for 55' package.
Link to the survey

European electricity utilities mobilise support for Ukraine – March 2022
Utilities continue to monitor the situation in Ukraine and remain committed to enable the necessary support to ensure safe, reliable and continuous operations of the electricity industry.
Link to the survey

How to meet our renewables targets – shorten and simplify the permitting process – March 2022
Now, more than ever, it is clear that each wind turbine and solar panel is a step towards energy independence and climate neutrality. In the words of European Commission President von der Leyen, this is a "strategic investment" – and we must deliver now.
Link to the survey

Commission aims to REPowerEU – March 2022
The Commission today unveiled their new plan REPowerEU, intended to make Europe independent from Russian fossil fuels and respond to rising energy prices.
Link to the survey

Why €72bn is not enough to meet the ambition of the Social Climate Fund – February 2022
The budget for the Social Climate Fund – which aims to support European citizens through the energy transition – should be doubled. Releasing the 'Fit for 55' package in July last year, the European Commission announced that it would launch the Fund in 2025 to help citizens finance investments in energy efficiency, new heating and cooling systems, and cleaner mobility.
Link to the survey

The electricity grid can support +100 million EVs, new study reveals – February 2022
The EV revolution is on a tear, as direct electrification becomes the main driver of a decarbonised economy. The electricity grid will remain stable despite exponential growth of the EV market and high electrification ambitions, reveals new EY-Eurelectric study. But timely planning of charging infrastructure and coordination between public authorities, electricity utilities, grid and charge point operators will be paramount to success.
Link to the survey

E.DSO, EPRI and Eurelectric host the second global platform of leading electricity distribution operators – January 2022

Electricity Distribution System Operators (DSOs) from Europe, Asia, Africa and the Americas gathered on 27-28 January 2022 in the second worldwide Conference focused on "Setting the grid to net zero". This global event is co-organised by the Association of European Distribution System Operators (E.DSO), the Electric Power Research Institute (EPRI) and Eurelectric

Link to the survey

Oxford institute for Energy

Central Banks' 'Green Shift' and the Energy Transition – March 2022

Central banks worldwide are stepping up actions in relation to climate change and taking on an increasingly important role in supporting the energy transition. Given the prominent role that central banks play in the financial markets and in influencing financing conditions, they can act as a powerful catalyst in addressing climate change.

Link to the survey

Potential development of renewable hydrogen imports to European markets until 2030 – March 2022

The paper provides considerable detail regarding the background to the potential use of low carbon hydrogen in the energy transition, the development of European hydrogen strategies, as well as details of the energy systems in the potential exporting countries of Morocco, Ukraine, Norway, and Western Russia.

Link to the survey

Financing the Energy Transition: The Role, Opportunities and Challenges of Green Bonds – February 2022

This paper discusses the current developments and adoption of financial instruments designed to support the efforts of governments and corporations in decarbonizing their activities. Particular focus is given to the role of Green Bonds, a debt-like financial instrument whose proceeds are used to finance 'Green' projects/assets.

Link to the survey

Cost-competitive green hydrogen: how to lower the cost of electrolysers ? – January 2022

The higher cost of green hydrogen in comparison to its competitors is the most important barrier to its increased use. Although the cost of renewable electricity is considered to be the key obstacle, challenges associated with electrolysers are another major issue that have important implications for the cost reduction of green hydrogen.

Link to the survey

Key Themes for the Global Energy Economy in 2022 – January 2022

This paper contains 20 short articles which outline the views of OIES research fellows on some of the key themes for the global energy economy in 2022. Starting with views on the short-term outlook for oil, electricity and gas markets, the articles move on to cover LNG supply and Russian export strategy as well as the future of the Nord Stream 2 pipeline.

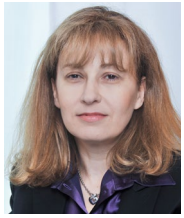
Link to the survey

Measurement, Reporting, and Verification of Methane Emissions from Natural Gas and LNG Trade: creating transparent and credible frameworks – January 2022

The Global Methane Pledge to reduce emissions by at least 30 per cent by 2030, was signed by more than 100 countries at the COP26 Conference in November 2021. Reducing methane emissions from fossil fuel sources by up to 75 per cent by 2030 has been identified as an essential contribution to reducing the rate of global temperature increase.

Link to the survey

Newsletter contacts



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