

ALEXA CAPITAL INSIGHTS

1st Quarter 2023

Why electrification of heat
is a hot topic.



ALEXA CAPITAL INSIGHTS

Insight: Electrification of heat -----3

Sector Trading Analysis -----10

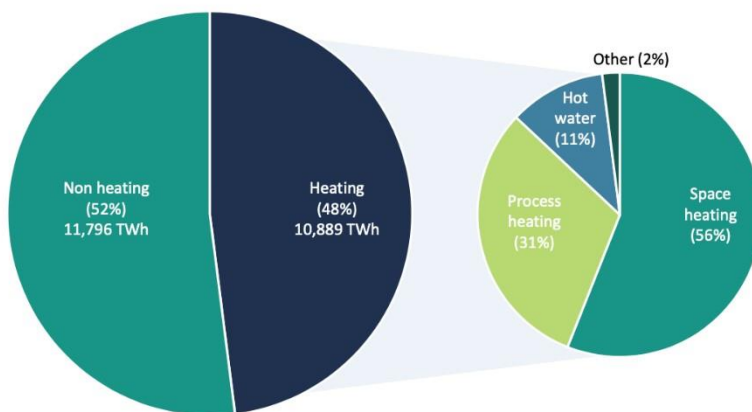
Selected M&A Transactions-----23

Why electrification of heat is a hot topic.

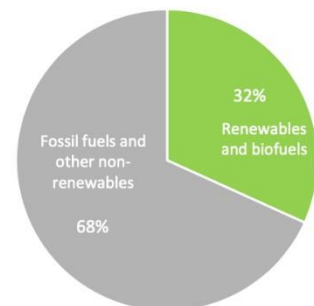
Drive an electric car. Use low-power lightbulbs. Eat less meat. All these things will help reduce emissions. But one of the most important changes we need to make for a successful energy transition is in something we will feel rather than see. It's how we keep warm and how we deliver industrial goods that require heat, such as food and beverages, capital goods and so on. Almost half (48%) of all the energy consumed in Europe is for heating. And of that, 56%, or roughly a quarter of all Europe's energy consumption, goes on space heating, rather than industrial processes or hot water.

Since 68% of the energy for heating comes from fossil fuels, that means our efforts to stay warm are effectively heating the planet. A warmer planet will not stop the need for heating—but will add other needs to our wish list as extreme climate events stress infrastructure, supply chains and migration patterns. Hence, we need to decarbonise heat as quickly as possible.

European energy consumption totals c.23,000TWh, nearly 50% of which is used for heating



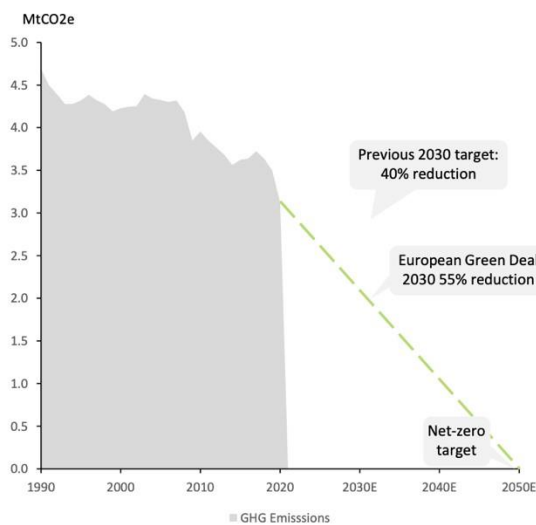
Fossil fuels supply c.70% of European heat



Source: Bloomberg

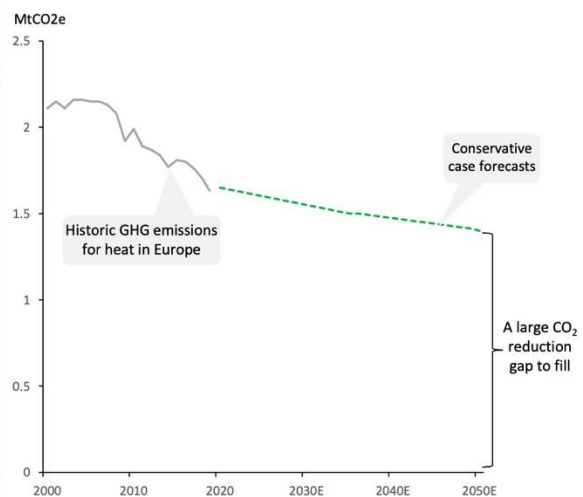
So far, heating has not been an easy sector to decarbonise. While the electrification of the power system proceeds apace, the European Commission admits the process of replacing fossil fuels with low-carbon energy in the heating and cooling sector has so far been slower than in electricity generation. A failure to tackle this problem could stymie Europe's efforts to meet climate targets in 2030 and 2050. The EU is looking for a 55% cut in emissions by 2030, yet on current projections will only achieve 41%.

EU-27 economy-wide GHG emissions and targets



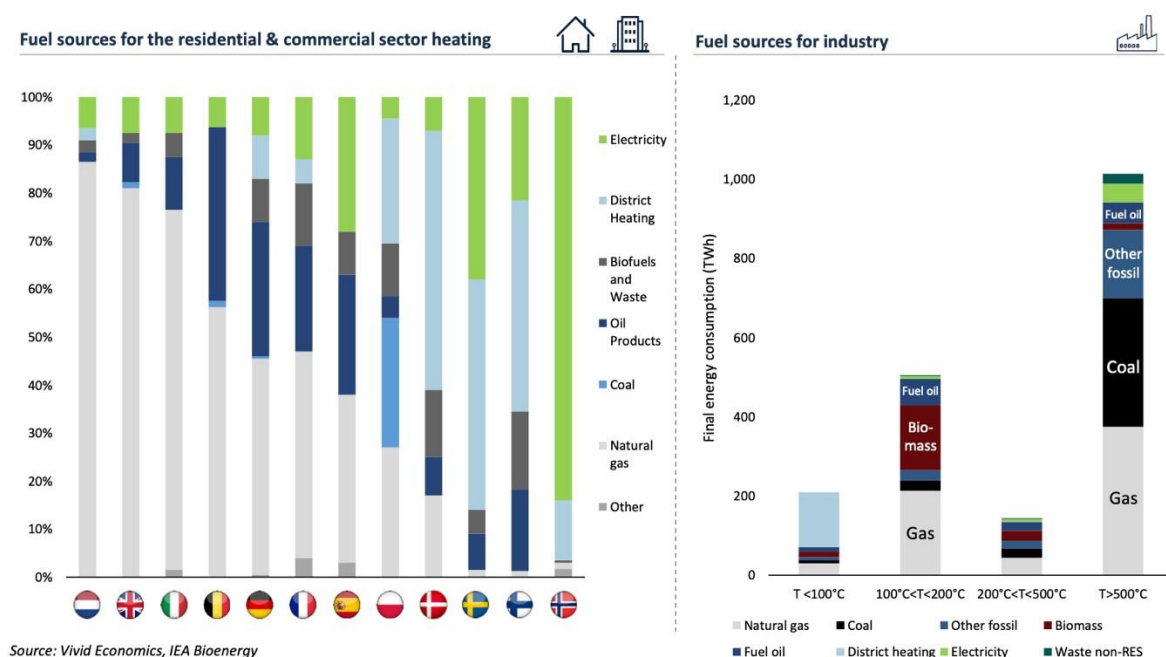
Source: European Environment Agency, BNEF

Emissions from heat in the European Union



Europe's desire to decarbonise heating has been given extra impetus by the continent's need to move away from Russian fossil fuels. That imperative does not exist in North America, although even there, the need to decarbonise heating is moving up the policy agenda. The wide-ranging US Inflation Reduction Act, for example, include tax credits of up to \$2,000 per household for the purchase of electric heat pumps. More recently, household use of gas has come under fire from a potential link between gas-fired stoves [and childhood asthma](#). Regardless of market, moving to low-carbon heating could help move the needle on climate change while delivering additional benefits in areas such as public health.

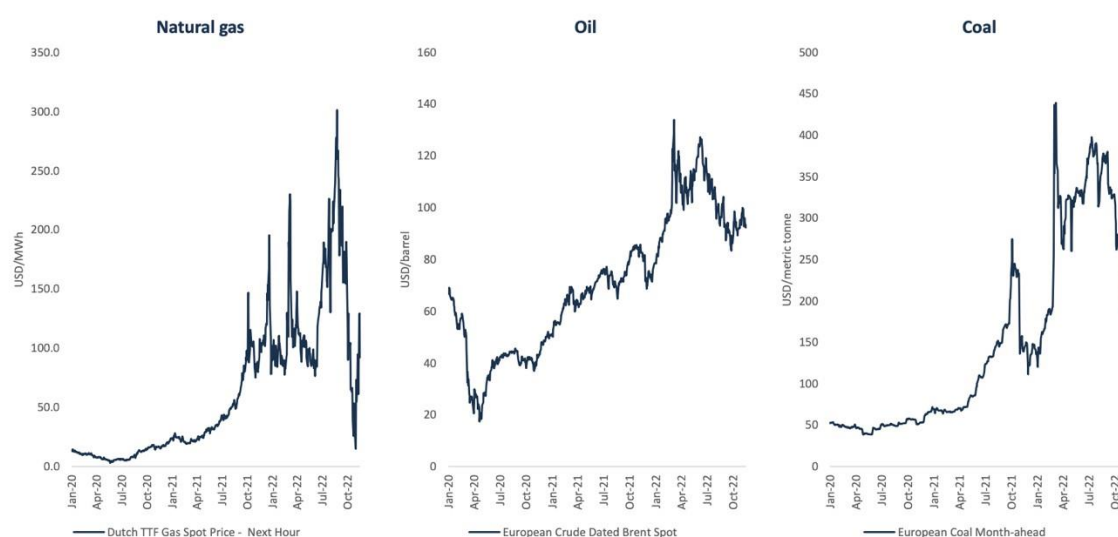
Decarbonising heat requirements below 100°C should not be too difficult. A glance at the energy mix for residential and commercial heating across various European nations shows significant variation in the types of fuel used, ranging from mostly natural gas in the Netherlands to largely renewable-produced electricity in Norway. The implication is that space heating is not dependent on fossil fuels in the same way that industries such as steelmaking are dependent on coal. On the contrary, low-temperature heat can come from a variety of sources.



The reason decarbonisation of the heating sector is slow is not for a lack of low-carbon options but because the choice of energy supply is usually made at the design stage of buildings and cannot always be easily or cost-effectively upgraded. This can lead to important lock-in effects. It is no accident, for example, that the Netherlands and the UK—both of which have historically had access to abundant supplies of gas from the North Sea—are among the countries with the highest reliance on gas-fired heating.

With Russia's invasion of Ukraine in 2022, having heating, ventilation and air conditioning (HVAC) systems locked into fossil fuels is no longer a good idea, and not just because of carbon emissions. Fossil fuel commodity prices, which were already exhibiting volatility before the invasion, hit record levels across Europe as Russian supplies were halted. Making sure citizens could afford to stay warm in winter became a key political priority, adding urgency to decarbonisation efforts.

Key commodity prices January 2020-present



Source: Bloomberg

Among the nations under its purview—and spurred by the need to reduce reliance on Russian coal and gas—the European Union (EU) is aiming to speed up heating decarbonisation with a carrot-and-stick approach. The stick is an extension of the EU Emissions Trading System to cover heating fuels such as natural gas. This means the cost of these fuels will be further increased by the need to pay a carbon levy for emissions.

[The measure](#), passed in December 2022 and due to enter force in 2027, aims to provide a clear pricing signal to move away from fossil fuel-based space and process heating and thus encourage the implementation of alternatives. Mindful that fossil fuels are still important for heating in many poorer EU nations, the price of heating-related emissions will be capped at €45 per tonne of carbon equivalent up to 2030.

And the new rules, which could be delayed until 2028 if high fuel costs persist, will be accompanied by the introduction of a social climate fund to protect the worst-hit EU households. The carrot, meanwhile, is a new target and incentives for heat pump installations. Heat pump technology has existed for more than 150 years and is widely used already in residential and low-heat industrial settings.

Heat pumps take advantage of thermal gradients to deliver seemingly miraculous feats of efficiency, turning one unit of electricity into between [three and six](#) units of thermal energy. In May 2022, the European Commission increased the EU’s heat pump installation targets to an [estimated 20 million](#) by 2026 and almost 60 million by 2030.

These targets, set out in the Commission’s REPowerEU plan to reduce emissions and improve energy security, are supported by a range of measures including pricing tools, innovation finance and skills partnerships to add resources to the heat pump industry. Such actions should warrant adding well-positioned players in the heat space to any broad-based low-carbon investment portfolio. And heat pumps are just one of several low-hanging fruits for investors when it comes to decarbonising heating.

While decarbonising high-temperature applications remains a challenge, there are four pathways to take the carbon out of low-temperature residential, commercial and industrial heating, all with obvious growth potential. The first is to replace fossil-fuelled heating with heat produced by electric-powered systems such as heat pumps, and then ensure most of the electricity used comes from low-carbon sources—as is the case in many European grids already.

A second option is to replace fossil fuels with ‘green gases’ such as hydrogen or ammonia made with renewable energy. There is great interest in using green hydrogen for high-temperature heating applications such as those required in industrial processes. We agree that green hydrogen may be valuable—or even indispensable—in this context, enabling the production of heat up to 1,000 °C for industrial processes as well as helping to power parts of the transport sector that cannot be electrified.

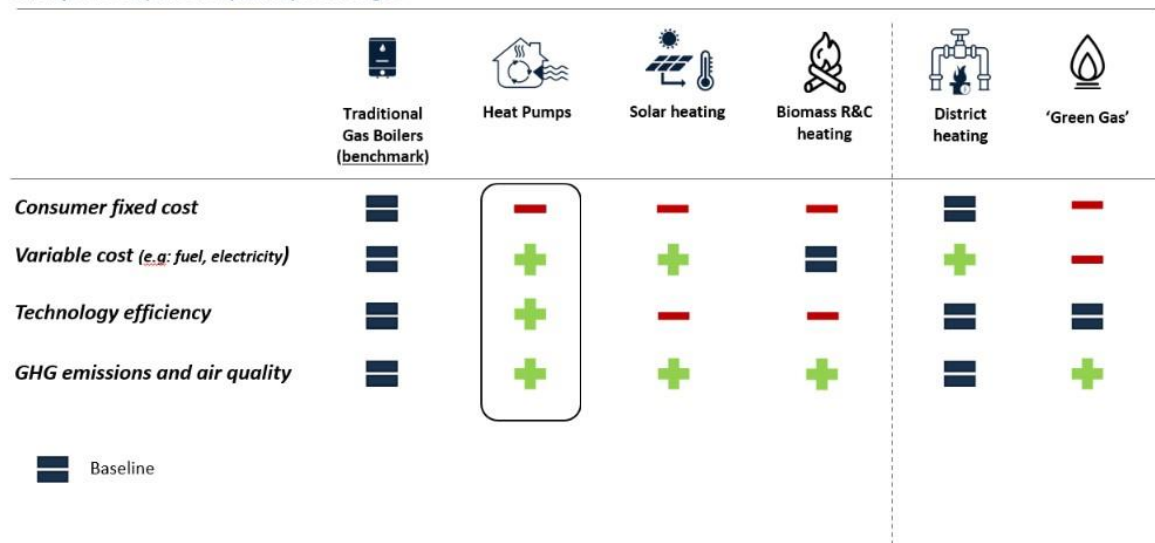
However, the case for using green gases to power low-heat applications is less robust, to say the least, because of the efficiency losses involved in converting electricity to low-carbon molecules. Electrification is more efficient—and safer. Another more efficient route for the decarbonisation of heat is district heating. This is where heating for entire neighbourhoods is delivered from a central source. District heating systems, which like heat pumps are an established technology, can usually achieve higher efficiencies than distributed assets.

But the real sweet spot for district heating is where the heat comes as a by-product of another process, such as industrial operations or nuclear power plant generation. Depending on the heat source, this can reduce emissions to zero with essentially no fuel costs. With Europe looking to move away from fossil fuel-fired heating as soon as possible, we expect major capital flows into European district heating upgrades.

Finally, there is the option of powering low-temperature heating directly from renewable sources using technologies such as solar water heaters and biomass-fired boilers. As stated previously, upgrading to any of these low-carbon options can be complicated because HVAC infrastructure tends to be embedded in building design, but increasingly there are advances in the ability of low-carbon heating systems to plug into existing plumbing.

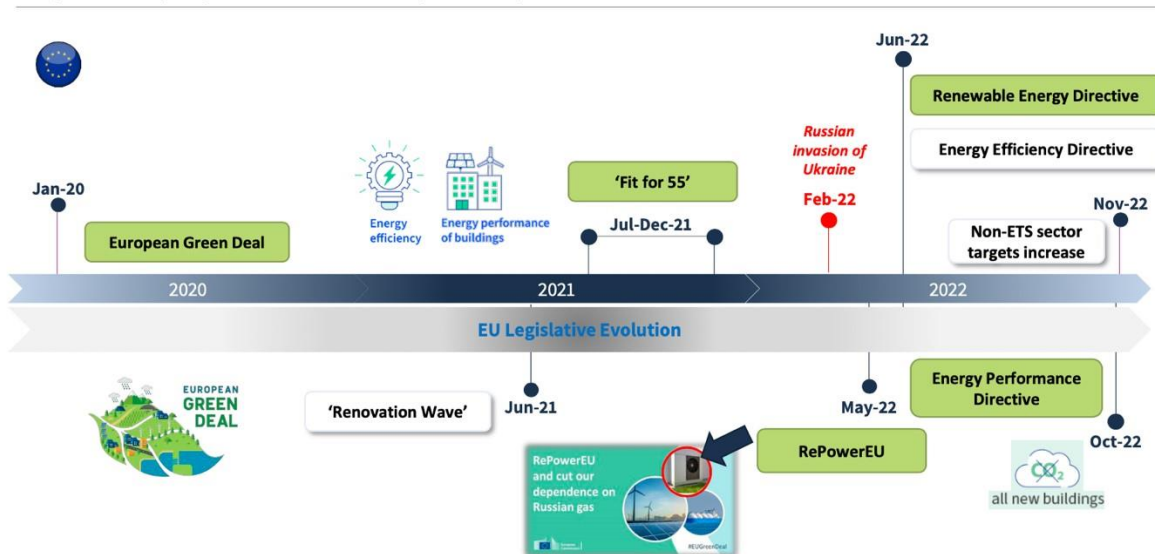
Given this, which are the technology families that investors should watch out for? The success of each one depends on consumer appeal, but heat pumps are particularly attractive in terms of variable cost, technology efficiency, emissions reduction, safety and policy support. There are two other factors in heat pumps’ favour. The first, already alluded to, is the growing policy momentum behind the technology.

Side-by-side comparison of pathway technologies



REPowerEU is just one of several recent EU regulatory packages favouring heat pump installations, with the Inflation Reduction Act providing similar support in the US. And the technology is not as contentious as, say, nuclear energy or natural gas, so continuing policy support would seem likely. Many European markets already offer important heat pump support packages.

European climate policy evolution: the Green Deal, "Fit for 55", and directives



Source: European Commission / European Council

In France, for example, sales tax on heat pump installations and renovations is just 5.5%, compared the standard 20%, and owners can pay for the work with a 0% interest loan of up to €10,000, or €30,000 if combined with improved energy performance measures. Outside the EU, UK homeowners can get up to £5,000 in government funds for air source heat pumps through a £450 million boiler upgrade scheme. The UK has also launched a £60 million innovation fund to make clean heating systems cheaper and easier to install.

The other important factor is that heat pumps are already at parity, from a levelised cost of heat perspective, with traditional gas boilers in several European markets, including Denmark, France and Sweden. Because of this, Europe is expected to become the growth market par excellence for heat pumps worldwide, with sales already jumping 35% just between 2020 and 2021.

The last three years have seen 6.8 million new heat pumps being sold across 21 European markets, outstripping the 6.6 million sold in the previous six years and representing a compound annual growth rate (CAGR) of 40%. REPowerEU is expected to drive a 20% CAGR up to 2031. The experience of the Nordic countries supports this massive growth potential.

A combination of incentives and building regulations have led to between 40% and 60% household penetration of heat pump technology in countries such as Sweden and Norway, compared to less than 20% currently for most other European and rest-of-world markets. For now, the growth markets have been France, Italy and Germany, which accounted for 50% of European heat pump sales in 2021. Moving forward France, UK, Germany and Denmark are forecast to be the ones to watch.

Supporting this growth is a mature supply chain and robust manufacturing base in Europe, with the European Heat Pump Association counting more than 170 members.

Heat pumps can be divided into three types depending on whether they exchange energy with the air, water or the ground. Of these, air source heat pumps have been the favoured technology in recent years, accounting for the lion's share of installations in 2021 across most European markets. Furthermore, we already see heat pumps becoming a pillar of smart home concepts where heating and other loads are connected to digital networks and used intelligently to help [deliver some degree of grid flexibility](#).

This trend reflects wider consolidation in the heating technology value chain, which encompasses a range of multinationals and small-to-medium enterprises in roles including heat creation and asset manufacturing, installation and maintenance, and energy consultancy and management.

We see major capital flow opportunities among energy service companies and heat pump service providers targeting the domestic, commercial and industrial low-temperature heating space, along with green gas developers aiming for high-temperature applications.

As far as investment is concerned, keeping Europe warm is a hot topic—and one that will only get hotter.

An aerial photograph of a lush, green forest. A dark, winding river flows through the landscape, curving from the upper left towards the lower right. The forest is dense with various shades of green, and the river's path creates a natural division in the terrain. The lighting suggests a bright day, with some areas of the forest appearing more vibrant than others.

SECTOR TRADING ANALYSIS

SEMICONDUCTORS

Company	Price Current	Weekly % Change	YTD Price % Change	Market Cap	Enterprise Value	Revenue 2021	EBITDA 2021	EV/Revenue			EV/EBITDA			P/E		
								2021	2022E	2023E	2021	2022E	2023E	2021	2022E	2023E
Equipment & Materials																
ASML	€476.80	1%	-31%	195,354	195,491	16,339	5,060	12.0x	9.1x	9.4x	38.6x	24.4x	28.3x	50.0x	30.6x	35.7x
Applied Materials	\$89.72	6%	-44%	77,187	79,495	17,120	4,779	4.6x	3.4x	3.1x	16.6x	10.3x	9.9x	21.6x	13	12
Lam Research	\$405.59	8%	-44%	55,314	55,941	9,944	2,899	5.6x	3.9x	3.3x	19.3x	11.6x	10.2x	25.9x	14.4x	12.5x
KLA	\$321.50	9%	-26%	45,562	49,032	5,731	2,167	8.6x	7.1x	5.3x	22.6x	16.8x	11.5x	39.5x	22	n.a.
Tokyo Electron	¥39,490.00	1%	-42%	41,868	38,850	10,421	2,457	3.7x	3.1x	2.6x	15.8x	12.1x	8.2x	25.7x	19.4x	13.0x
Teradyne	\$83.35	8%	-50%	13,068	11,752	3,086	1,046	3.8x	3.2x	3.8x	11.2x	8.7x	12.2x	17.2x	13	20
Entegris	\$80.89	5%	-42%	12,050	15,266	1,824	538	8.4x	6.8x	4.5x	28.4x	22.4x	14.7x	41.2x	29.9x	23.3x
Asm International	€230.05	-14%	-41%	11,280	10,718	1,615	505	6.6x	5.5x	4.7x	21.2x	16.0x	15.0x	33.4x	21	29
Soitec	€131.10	3%	-39%	4,630	4,443	671	198	6.6x	6.2x	4.9x	22.4x	20.9x	13.7x	39.4x	56.7x	25.9x
Universal Display	\$99.05	4%	-42%	4,678	4,055	399	168	10.2x	7.3x	6.8x	24.2x	15.3x	14.2x	43.4x	25	24
Be Semiconductor Industries	€51.68	2%	-31%	4,167	3,870	518	198	7.5x	4.5x	5.5x	19.6x	10.3x	12.7x	28.8x	13.2x	17.5x
IPG Photonics	\$87.36	1%	-50%	4,386	3,191	1,178	298	2.7x	2.2x	2.1x	10.7x	6.9x	7.5x	26.8x	16	18
Onto Innovation	\$67.19	6%	-35%	3,338	2,840	552	113	5.1x	3.7x	2.8x	25.1x	12.5x	9.3x	n.a.	23.2x	15.9x
Nova (Israel)	\$76.11	4%	-48%	2,183	1,747	263	73	6.6x	4.2x	3.1x	23.8x	12.7x	9.3x	47.0x	22	17
Aixtron	€25.20	-11%	36%	2,837	2,842	329	55	8.6x	5.9x	5.8x	52.1x	24.4x	23.0x	77.3x	30.7x	28.8x
Median								6.6x	4.5x	4.5x	22.4x	12.7x	12.2x	36.4x	21.9x	18.8x
Average								6.7x	5.1x	4.5x	23.5x	15.0x	13.3x	36.9x	23.3x	20.9x
IDMs																
Intel	\$28.05	-1%	-47%	115,742	126,884	n.a.	n.a.	n.a.	1.7x	2.0x	n.a.	3.9x	6.7x	n.a.	6.2x	13.0x
Texas Instruments	\$164.88	3%	-13%	149,636	148,483	13,992	6,523	10.6x	8.3x	7.4x	22.8x	15.5x	13.2x	29.1x	20	17
NXP Semiconductors	\$155.54	6%	-33%	40,307	47,989	8,571	2,695	5.6x	4.4x	3.6x	17.8x	11.5x	8.9x	n.a.	22.0x	14.4x
Microchip Technology	\$64.73	5%	-26%	35,602	42,631	5,263	2,026	8.1x	7.9x	6.3x	21.0x	18.8x	14.0x	72.1x	88	29
Infineon Technologies	€26.33	7%	-36%	34,454	38,708	10,178	2,493	3.8x	3.0x	2.8x	15.5x	10.4x	8.4x	65.9x	29.0x	16.6x
STMicroelectronics	€32.10	2%	-27%	29,293	27,897	10,159	2,225	2.7x	2.2x	1.7x	12.5x	8.2x	5.0x	27.9x	15	8
Median								5.6x	3.7x	3.2x	17.8x	11.0x	8.6x	47.5x	21.1x	15.5x
Average								6.2x	4.6x	4.0x	17.9x	11.4x	9.4x	48.7x	30.1x	16.3x
Consumer & Wireless																
Qualcomm	\$109.45	-7%	-41%	122,693	132,470	21,185	7,188	6.3x	4.0x	3.0x	18.4x	10.1x	7.2x	30.5x	14.5x	9.3x
Marvell International	\$39.39	-1%	-56%	33,584	37,737	2,692	667	14.0x	12.8x	8.5x	56.5x	41.4x	22.7x	n.a.	n.a.	n.a.
Skyworks Solutions	\$88.85	3%	-44%	14,256	15,858	3,243	1,429	4.9x	3.1x	2.9x	11.1x	6.9x	6.5x	18.4x	9.2x	10.6x
Qorvo	\$87.96	2%	-45%	8,918	10,054	3,207	1,049	3.1x	2.5x	2.2x	9.6x	7.4x	6.1x	24.9x	14	8
Silicon Labs	\$124.19	8%	-39%	4,133	3,286	870	163	3.8x	4.1x	3.2x	20.2x	26.0x	14.9x	n.a.	n.a.	51.9x
ams	CHF 6.72	18%	-61%	1,864	3,393	4,097	1,053	0.8x	0.6x	0.7x	3.2x	3.0x	3.6x	n.a.	n.a.	n.a.
Nordic Semiconductor	148.05 kr	1%	-50%	2,792	2,532	402	77	6.3x	4.2x	3.2x	32.9x	20.7x	11.9x	81.3x	41.0x	22.4x
Synaptics	\$91.08	3%	-68%	3,632	3,757	1,329	254	2.8x	2.8x	2.2x	14.8x	9.9x	5.6x	n.a.	38	15
Broadcom	\$476.20	1%	-28%	192,863	226,118	23,858	14,066	9.5x	8.3x	6.8x	16.1x	13.7x	10.8x	73.4x	28.8x	16.9x
Ambarella	\$55.21	1%	-74%	2,121	1,934	229	24	8.4x	8.8x	5.8x	80.5x	n.a.	26.8x	n.a.	n.a.	n.a.
Median								5.6x	4.0x	3.1x	17.3x	10.1x	9.0x	30.5x	21.7x	14.6x
Average								6.0x	5.1x	3.9x	26.3x	15.5x	11.6x	45.7x	24.4x	19.2x
Power Semiconductors																
Analog Devices	\$148.31	4%	-16%	76,282	81,010	5,520	2,437	14.7x	11.1x	6.8x	33.2x	23.3x	12.8x	64.1x	39.1x	28.2x
Monolithic Power Systems	\$355.26	5%	-28%	16,676	15,957	836	263	19.1x	13.4x	8.9x	60.7x	39.4x	22.1x	n.a.	72	38
Renesas Electronics	¥1,262.00	1%	-16%	16,862	20,304	6,796	2,082	3.0x	2.4x	2.0x	9.8x	7.2x	5.2x	34.3x	15.4x	10.4x
Wolfspeed	\$75.94	-4%	-37%	9,433	9,594	894	36	10.7x	15.4x	13.2x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Power Integrations	68.83 kr	3%	-26%	3,937	3,574	468	121	7.6x	5.1x	5.5x	29.5x	16.2x	15.5x	63.3x	24.4x	23.4x
Diodes	\$72.53	1%	-35%	3,299	3,348	1,215	242	2.8x	1.9x	1.7x	13.8x	8.2x	6.7x	33.7x	15	11
onsemi	\$65.27	6%	-7%	28,220	29,270	5,163	987	5.7x	4.4x	3.5x	29.6x	15.1x	8.7x	n.a.	30.5x	15.2x
Median								7.6x	5.1x	5.5x	29.6x	15.7x	10.8x	48.8x	27.4x	19.3x
Average								9.1x	7.7x	5.9x	29.4x	18.3x	11.8x	48.8x	32.6x	21.1x

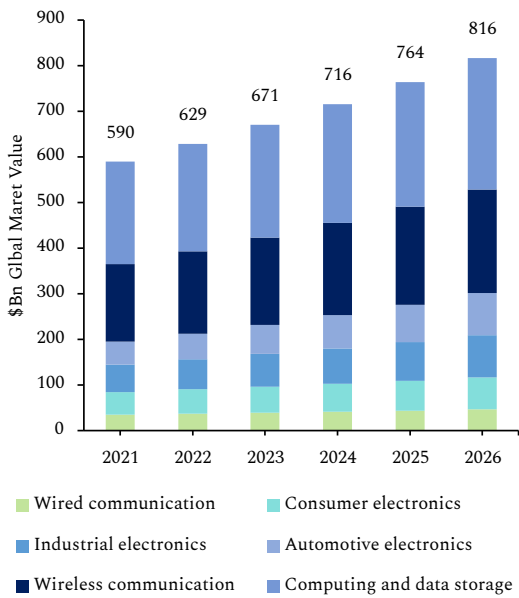
Figures in dollars millions except for share price; actuals are converted using FX rate as of the relevant fiscal year-end, estimates using the latest FX rate as of 19th January 2023.

N/A: Not Applicable

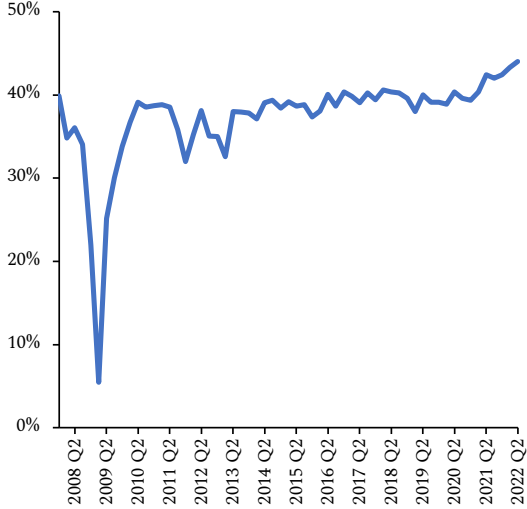
Source: Bloomberg as of 19th January 2023.

SEMICONDUCTORS (cont'd)

Global semiconductor market value by vertical



Semiconductor Companies Gross Margin (%) Average



Source: Bloomberg

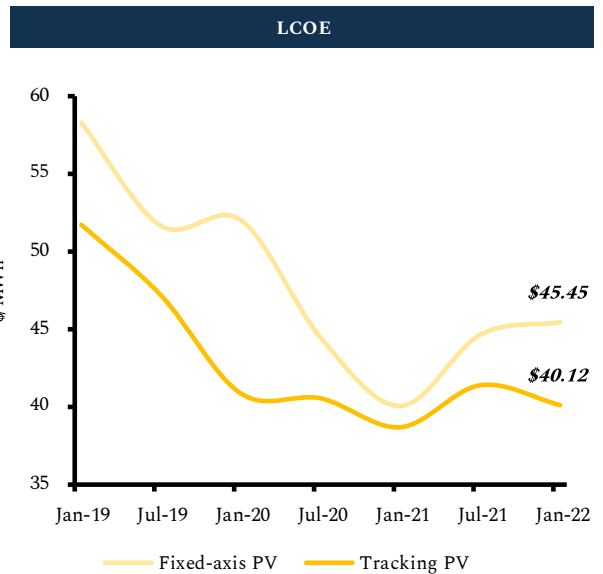
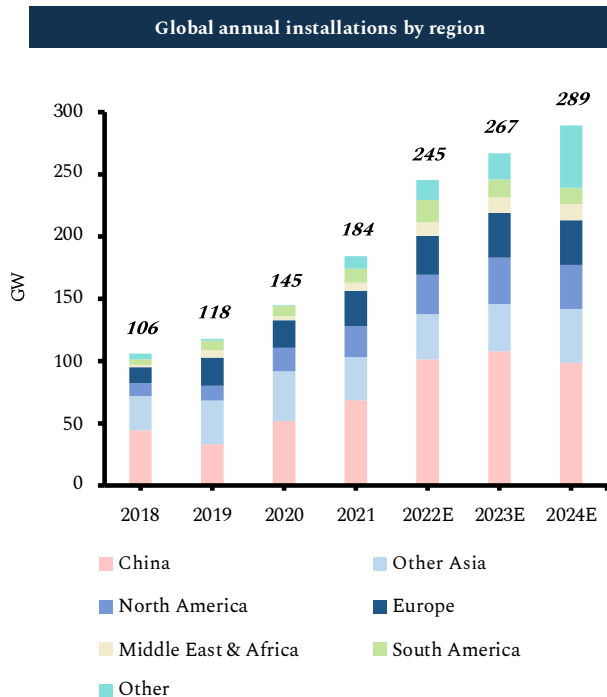
SOLAR

Company	Price Current	Weekly % Change	YTD Price % Change	Market Cap	Enterprise Value	Revenue 2021	EBITDA 2021	EV/Revenue 2021	EV/Revenue 2022E	EV/Revenue 2023E	EV/EBITDA 2021	EV/EBITDA 2022E	EV/EBITDA 2023E	P/E 2021	P/E 2022E	P/E 2023E
Solar Downstream																
Sunrun	\$21.90	13%	-38%	4,645	13,526	1,610	-252	8.4x	6.1x	5.9x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sunnova Energy	\$17.66	13%	-39%	2,029	7,142	242	54	29.5x	14.4x	10.4x	n.a.	56.0x	30.1x	n.a.	n.a.	n.a.
Scatec	72.72 kr	6%	-53%	1,117	2,120	443	338	4.8x	5.4x	3.7x	6.3x	8.8x	6.7x	24.7x	n.a.	22.2x
Sunpower	\$17.89	13%	-17%	3,115	3,195	1,323	-2	2.4x	1.9x	1.6x	n.a.	31.4x	17.8x	n.a.	n.a.	40.1x
Solaria Energia	€15.76	5%	-9%	1,957	2,596	112	110	23.1x	15.1x	10.2x	23.5x	17.3x	11.5x	34.4x	26.2x	18.3x
Advanced SolTech	SEK 18.31	3%	-62%	66	148	14	13	10.8x	7.6x	5.6x	11.5x	10.5x	7.6x	35.2x	36.7x	n.a.
Otovo	21.00 kr	6%	-21%	277	247	33	-18	7.4x	3.9x	1.9x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Soltech Energy	€11.75	-3%	-47%	138	138	106	28	1.3x	0.9x	0.5x	5.0x	43.2x	4.8x	14.5x	n.a.	n.a.
Azure Power	\$5.55	21%	-69%	337	1,608	205	104	7.8x	6.7x	5.7x	15.4x	8.2x	6.9x	n.a.	85.4x	6.9x
Altus Power	\$9.65	5%	-8%	1,545	1,801	72	55	25.1x	17.2x	9.7x	32.7x	30.8x	13.9x	n.a.	16.2x	47.2x
Soltec	€4.22	8%	-35%	383	536	410	-11	1.3x	1.1x	0.9x	n.a.	30.2x	10.0x	n.a.	n.a.	20.0x
Holaluz-Clidom	€8.10	-2%	-35%	176	220	677	-9	0.3x	0.2x	0.2x	n.a.	11.8x	7.3x	n.a.	n.a.	n.a.
Onde	8.10 zł	0%	-50%	94	114	316	18	0.4x	0.5x	0.7x	6.4x	22.7x	5.1x	n.a.	n.a.	n.a.
Solar Philippines	₱1.19	5%	-4%	205	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Median								7.4x	5.4x	3.7x	11.5x	22.7x	7.6x	29.6x	31.5x	21.1x
Average								9.4x	6.2x	4.4x	14.4x	24.6x	11.1x	27.2x	41.1x	25.8x
Solar Upstream																
Longi Green Energy	¥52.11	5%	-21%	49,852	47,692	8,333	1,747	5.7x	3.6x	2.8x	27.3x	21.3x	18.5x	38.7x	31.0x	25.2x
Trina Solar	¥66.43	6%	-8%	19,733	22,547	4,607	555	4.9x	2.7x	1.9x	40.6x	37.8x	26.9x	n.a.	66.1x	39.0x
Jinko Solar Co	¥16.30	-1%	226%	22,338	25,084	5,317	n.a.	4.7x	3.9x	2.6x	n.a.	46.3x	30.7x	n.a.	n.a.	59.0x
GCL-Poly Energy	HK\$1.99	-1%	-32%	6,872	8,245	2,364	863	3.5x	2.8x	1.6x	9.6x	5.0x	3.0x	n.a.	7.8x	3.2x
Hanwha Solutions	₩47,200.00	-1%	33%	6,323	10,177	8,288	1,150	1.2x	1.1x	1.1x	8.8x	8.1x	8.5x	13.9x	8.7x	12.7x
First Solar	\$132.67	7%	50%	14,143	12,529	2,837	588	4.4x	4.3x	4.8x	21.3x	17.2x	60.1x	33.6x	32.2x	n.a.
AU Optronics	NT\$16.90	-1%	-40%	4,032	3,136	9,546	1,269	0.3x	0.2x	0.4x	2.5x	0.9x	9.3x	n.a.	1.8x	n.a.
Wacker Chemie	€119.35	2%	-11%	6,186	5,927	5,642	797	1.1x	0.9x	0.7x	7.4x	3.6x	2.8x	31.4x	7.4x	5.1x
Shanghai Aiko Solar	¥35.32	6%	64%	5,512	6,702	1,557	196	4.3x	2.3x	1.4x	34.1x	34.7x	15.0x	50.3x	91.8x	25.7x
Jinkosolar Holding	\$45.94	12%	-1%	2,303	9,917	5,117	441	1.9x	1.7x	0.9x	22.5x	25.0x	25.4x	19.9x	19.3x	59.0x
Sino-American Silicon	NT\$124.00	2%	-46%	2,252	2,510	2,203	771	1.1x	1.0x	1.0x	3.3x	2.9x	2.6x	10.2x	8.5x	8.1x
Canadian Solar	\$31.93	11%	2%	2,048	5,135	3,433	331	1.5x	1.0x	0.7x	15.5x	13.2x	9.7x	20.8x	22.8x	11.4x
Daqo New Energy	\$46.37	3%	10%	3,455	1,958	682	260	2.9x	1.0x	0.4x	7.5x	1.5x	0.6x	24.2x	3.9x	1.6x
United Renewable Energy	NT\$21.00	-4%	-3%	1,059	1,258	453	n.a.	2.8x	2.5x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Meyer Burger	CHF 0.46	4%	11%	1,230	1,298	111	-47	11.7x	16.2x	7.7x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
FTC Solar	\$2.01	9%	-74%	205	103	n.a.	n.a.	n.a.	0.4x	0.6x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Motech Industries	NT\$23.65	-3%	-33%	284	315	134	n.a.	2.4x	n.a.	n.a.	n.a.	n.a.	n.a.	43.7x	n.a.	n.a.
Tainergy Tech	NT\$23.45	-1%	-40%	163	160	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ocean Sun	8.99 kr	3%	-43%	39	32	0	-2	n.a.	n.a.	35.9x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Verditek	£1.00	5%	-63%	5	4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Yellow Boson	0.43 zł	-12%	-80%	6	6	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Saule Technologies	3.38 zł	4%	-59%	59	60	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Midsummer	SEK 9.99	5%	-36%	62	78	n.a.	n.a.	n.a.	n.a.	2.7x	n.a.	n.a.	16.6x	n.a.	n.a.	n.a.
TubeSolar	€4.24	-2%	-21%	54	52	n.a.	-2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Absolicon	SEK 96.20	-1%	-28%	43	35	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sunworks	\$2.26	8%	-30%	74	66	n.a.	-9	n.a.	0.6x	0.4x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
ML System	47.26 zł	1%	-49%	65	86	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Median								2.8x	1.7x	1.3x	12.5x	13.2x	12.4x	27.8x	14.0x	12.7x
Average								3.4x	2.7x	3.8x	16.7x	16.7x	16.4x	28.7x	25.1x	22.8x

Figures in dollars millions except for share price; actuals are converted using FX rate as of the relevant fiscal year-end, estimates using the latest FX rate as of 19th January 2023.

N/A: Not Applicable

Source: Bloomberg as of 19th January 2023.



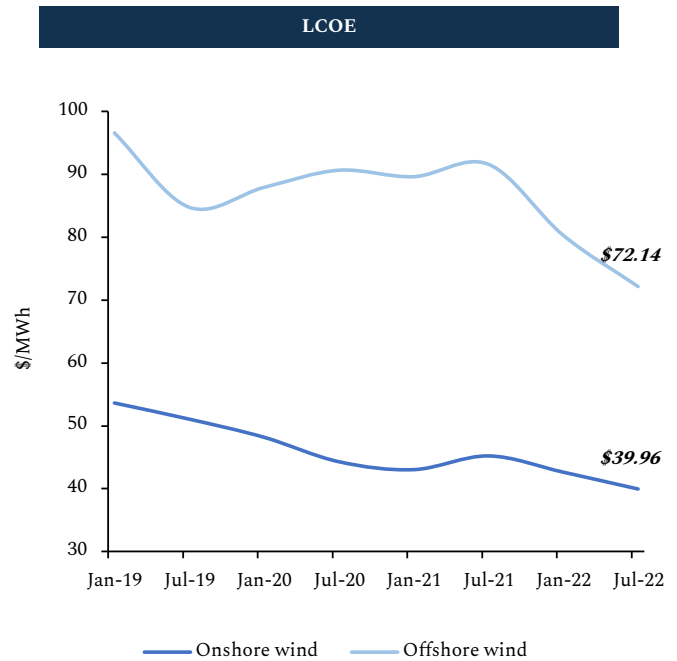
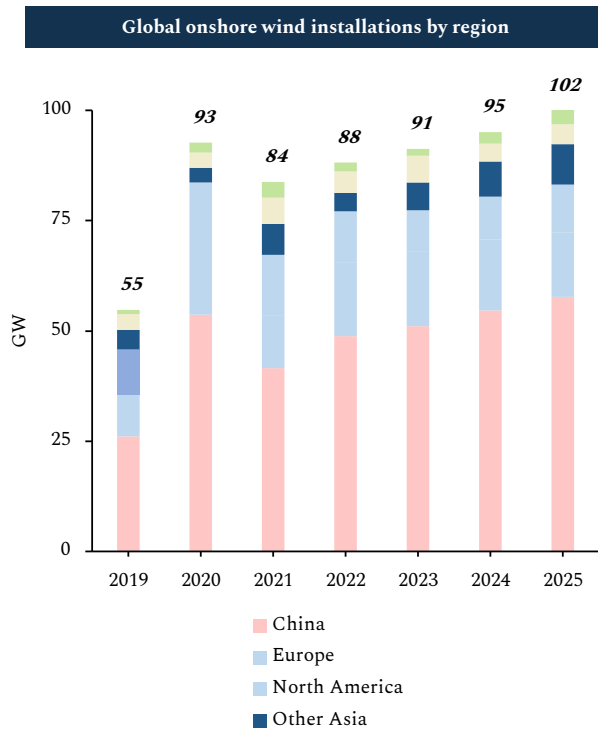
WIND

Company	Price	Weekly	YTD Price	Market	Enterprise	Revenue	EBITDA	EV/Revenue			EV/EBITDA			P/E		
	Current	% Change	% Change	Cap	Value	2021	2021	2021	2022E	2023E	2021	2022E	2023E	2021	2022E	2023E
Wind Downstream																
Energiekontor	€89.60	8%	30%	1,295	1,624	185	97	8.8x	8.6x	6.1x	16.8x	17.0x	14.4x	30.2x	30.9x	24.8x
PNE	€19.82	6%	127%	1,509	1,923	139	39	13.8x	15.5x	9.8x	49.8x	49.1x	31.0x	50.8x	n.a.	n.a.
ABO Wind	€55.40	2%	-1%	508	621	150	29	4.1x	3.0x	2.6x	21.4x	17.3x	13.4x	31.1x	33.8x	26.7x
Edda Wind	26.80 kr	13%	-25%	167	239	28	7	8.4x	8.4x	4.5x	32.6x	27.1x	8.2x	62.8x	n.a.	11.2x
Cloudberry Clean Energy	12.80 kr	6%	-21%	360	268	5	-4	56.4x	9.8x	6.5x	n.a.	13.3x	10.0x	n.a.	34.8x	26.5x
MDI Energia	1.78 zł	-7%	-31%	17	25	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Median								8.8x	8.6x	6.1x	27.0x	17.3x	13.4x	40.9x	33.8x	25.6x
Average								18.3x	9.1x	5.9x	30.1x	24.8x	15.4x	43.7x	33.2x	22.3x
Wind Upstream																
Vestas Wind Systems	161.22 kr.	4%	-25%	20,052	20,501	17,745	1,773	1.2x	1.1x	1.4x	11.6x	13.2x	76.2x	30.7x	65.6x	n.a.
Siemens Energy	€11.88	6%	-49%	8,577	7,104	32,597	647	0.2x	0.2x	0.3x	11.0x	7.5x	6.3x	n.a.	n.a.	n.a.
Siemens Gamesa	€17.94	0%	-14%	12,145	14,591	11,347	371	1.3x	1.2x	1.6x	39.3x	27.3x	n.a.	n.a.	n.a.	n.a.
Xinjiang Goldwind	¥10.45	-14%	-36%	5,614	10,038	8,769	843	1.1x	1.2x	1.5x	11.9x	9.3x	11.3x	10.3x	8.9x	11.7x
Nordex	€9.51	10%	-29%	2,004	1,849	5,283	104	0.3x	0.3x	0.3x	17.8x	31.0x	n.a.	n.a.	n.a.	n.a.
Suzlon Energy	₹ 7.94	-10%	-19%	966	1,747	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TPI Composites	\$9.54	10%	-37%	356	706	1,654	94	0.4x	0.4x	0.4x	7.5x	21.6x	15.3x	n.a.	n.a.	n.a.
Inox Wind	₹ 149.20	-1%	29%	500	702	138	14	5.1x	n.a.	n.a.	49.7x	n.a.	n.a.	n.a.	n.a.	n.a.
Vergnet	€0.00	-39%	-98%	1	4	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Median								1.1x	0.8x	0.9x	11.9x	17.4x	13.3x	20.5x	37.3x	11.7x
Average								1.4x	0.8x	0.9x	21.3x	18.3x	27.2x	20.5x	37.3x	11.7x

Figures in dollars millions except for share price; actuals are converted using FX rate as of the relevant fiscal year-end, estimates using the latest FX rate as of 19th January 2023.

N/A: Not Applicable.

Source: Bloomberg as of the 19th January 2023



Source: Bloomberg.

ENERGY STORAGE

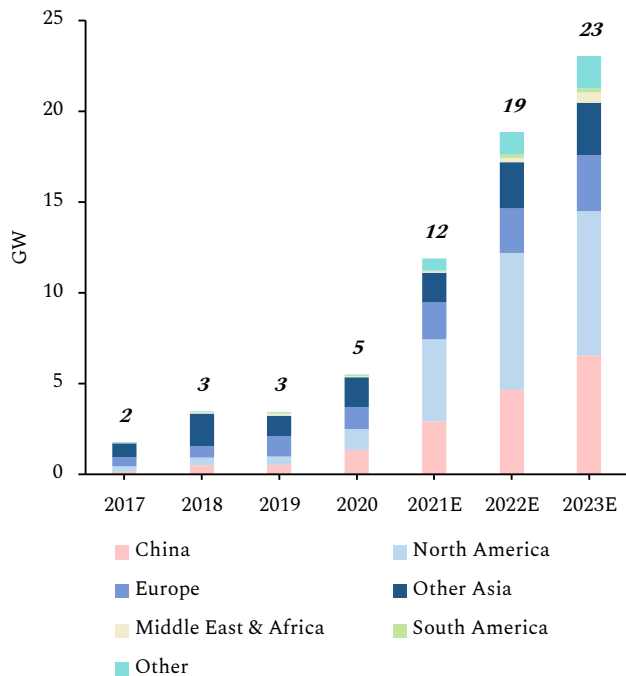
Company	Price Current	Weekly % Change	YTD Price % Change	Market Cap	Enterprise Value	Revenue 2021	EBITDA 2021	EV/Revenue 2021	2022E	2023E	EV/EBITDA 2021	2022E	2023E	P/E 2021	2022E	2023E
Storage																
Tesla	\$198.53	8%	-43%	721,610	707,650	53,823	10,061	13.1x	8.5x	6.1x	70.3x	36.2x	25.6x	n.a.	55.7x	38.6x
CATL	¥372.88	-8%	-34%	124,709	132,432	20,212	3,728	6.6x	3.1x	2.3x	35.5x	23.5x	15.5x	50.5x	34.2x	22.7x
LG Energy Solutions	₩528,000.00	4%	76%	86,523	91,952	15,599	1,935	5.9x	5.3x	3.8x	47.5x	39.1x	25.9x	n.a.	n.a.	74.7x
LG Chem	₩626,000.00	9%	1%	30,947	41,427	37,271	6,872	1.1x	1.1x	1.0x	6.0x	8.1x	6.7x	9.7x	17.3x	13.8x
Panasonic	¥1,064.50	1%	-19%	17,618	24,804	63,190	5,631	0.4x	0.4x	0.5x	4.4x	4.8x	5.2x	11.3x	9.5x	10.6x
Gotion High-Tech	¥30.05	-6%	-38%	7,326	9,045	1,606	181	5.6x	2.7x	1.7x	50.1x	32.1x	17.6x	n.a.	n.a.	34.9x
Sunwoda Electronic	¥23.30	-4%	-43%	5,488	6,512	5,793	377	1.1x	1.0x	0.8x	17.3x	16.8x	9.7x	38.7x	32.6x	16.9x
Quantumscape	\$8.19	1%	-65%	3,570	2,523	0	-201	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Fluence	\$14.60	15%	-58%	2,524	2,487	681	-154	3.7x	2.2x	1.6x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Varta	€27.29	-2%	-77%	1,096	1,593	1,068	334	1.5x	2.0x	1.8x	4.8x	12.7x	9.1x	7.4x	65.3x	27.2x
Farasis Energy	¥24.81	-4%	-25%	3,640	4,109	543	-114	7.6x	2.2x	1.3x	n.a.	56.5x	15.2x	n.a.	n.a.	21.1x
Enersys	\$65.33	7%	-19%	2,656	3,770	2,978	338	1.3x	1.1x	1.0x	11.1x	10.6x	10.0x	18.5x	16.5x	15.0x
Pylon Technologies	¥308.50	-17%	67%	6,546	6,511	320	60	20.4x	8.4x	4.3x	n.a.	43.1x	20.2x	n.a.	50.9x	23.4x
Camel Group	¥8.53	-4%	-44%	1,371	1,525	1,923	213	0.8x	0.9x	0.8x	7.1x	9.6x	7.1x	10.6x	18.3x	11.2x
Stem	\$13.38	15%	-30%	2,064	2,271	127	-59	17.8x	5.8x	3.6x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Exide Industries	₹ 166.00	4%	-3%	1,705	1,660	2,061	213	0.8x	n.a.	0.9x	7.8x	n.a.	8.3x	15.6x	n.a.	15.6x
Energy Vault	\$3.13	-14%	-68%	429	141	0	-1	n.a.	1.7x	0.3x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ess Tech	\$4.07	15%	-65%	649	414	0	-60	n.a.	n.a.	4.2x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Li-Cycle	\$5.92	11%	-41%	1,039	572	7	-29	77.6x	32.4x	5.0x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Dynavolt Renewable Energy	n.a.	n.a.	-82%	n.a.	n.a.	147	-75	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Freyr	\$13.02	7%	10%	1,519	1,035	0	-76	n.a.	n.a.	46.4x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Chongqing Wanli	¥18.41	-2%	-2%	387	381	89	3	4.3x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Amita Technologies	NT\$26.50	-1%	-15%	228	402	11	-8	38.1x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Kung Long Batteries	NT\$135.50	1%	-2%	345	288	208	34	1.4x	n.a.	n.a.	8.5x	n.a.	n.a.	15.5x	n.a.	n.a.
Leclanche	CHF 0.56	-5%	-12%	188	265	21	-62	12.8x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Romeo Power	\$0.35	n.a.	-91%	65	53	17	-113	3.2x	n.a.	n.a.	n.a.	n.a.	n.a.	6.5x	n.a.	n.a.
EOS Energy	\$1.42	2%	-81%	85	93	5	-132	20.3x	1.8x	0.5x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ferroamp Elektronik	SEK 63.60	0%	-21%	85	73	13	-4	5.7x	3.5x	1.9x	n.a.	n.a.	65.7x	n.a.	n.a.	n.a.
Seri Industrial	€5.61	4%	-43%	275	402	187	23	2.2x	1.8x	1.3x	17.2x	15.7x	8.3x	n.a.	n.a.	18.4x
Invinity Energy Systems	£26.75	-3%	-72%	36	21	4	n.a.	5.5x	2.0x	1.0x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Azelio	SEK 1.55	11%	-91%	45	35	0	-29	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Median								5.5x	2.1x	1.6x	11.1x	16.8x	10.0x	13.4x	32.6x	19.8x
Average								10.3x	4.4x	4.0x	22.1x	23.8x	16.7x	18.4x	33.4x	24.6x

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N/A: Not Applicable.

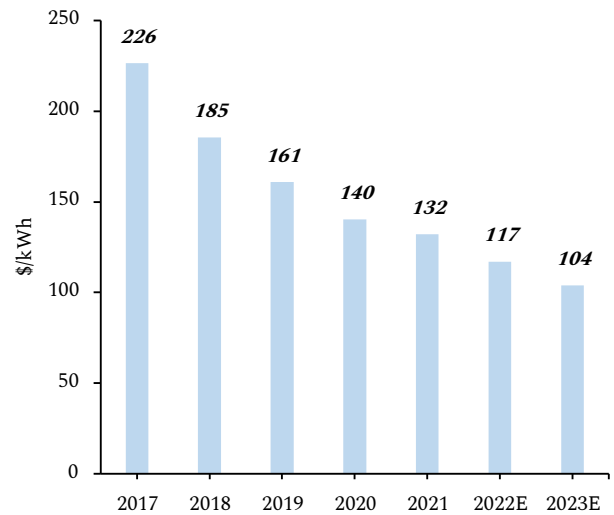
Source: Bloomberg as of the 19th January 2023..

Global annual energy storage installations



Source: Bloomberg.

Battery pack prices



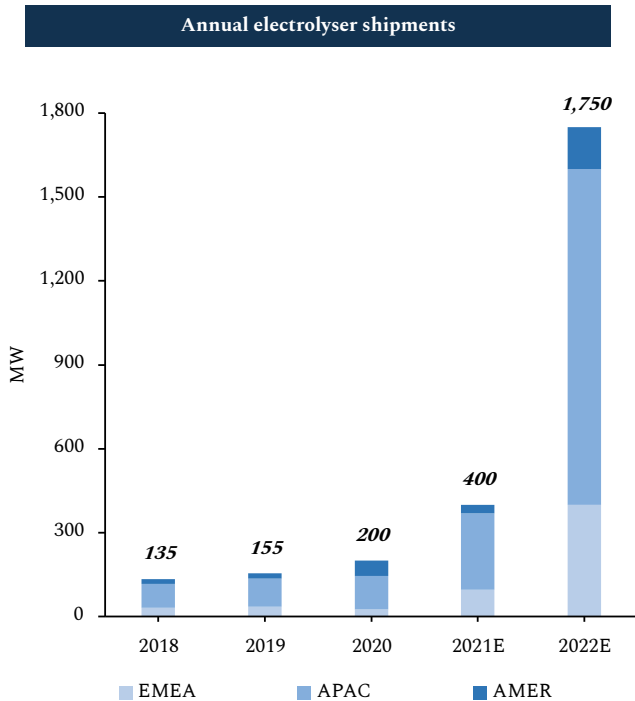
HYDROGEN & FUEL CELLS

Company	Price Current	Weekly % Change	YTD Price % Change	Market Cap	Enterprise Value	Revenue 2021	EBITDA 2021	EV/Revenue 2021	EV/Revenue 2022E	EV/Revenue 2023E	EV/EBITDA 2021	EV/EBITDA 2022E	EV/EBITDA 2023E	P/E 2021	P/E 2022E	P/E 2023E
Power Generation - Fuel Cells																
Plug Power	\$14.72	2%	-44%	9,311	6,895	502	-375	13.7x	8.1x	4.9x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Bloom Energy	\$18.52	12%	-16%	3,590	4,218	972	-45	4.3x	3.7x	2.8x	n.a.	n.a.	31.4x	n.a.	n.a.	n.a.
Thyssenkrupp	€5.41	0%	-45%	3,349	1,905	40,660	1,640	0.0x	0.0x	0.1x	1.2x	0.6x	1.0x	n.a.	4.0x	6.6x
ITM Power	£77.86	-16%	-80%	555	104	6	-32	18.3x	15.5x	3.3x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Beijing Sinohytec	¥82.26	-4%	-56%	1,126	1,106	98	-32	11.3x	6.3x	3.6x	n.a.	86.6x	33.0x	n.a.	n.a.	71.1x
Ballard Power Systems	CS\$7.60	2%	-52%	1,662	675	105	-78	6.5x	6.8x	4.9x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Nel	12.31 kr	1%	-25%	1,860	1,551	88	-56	17.7x	17.7x	10.3x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Ceres Power	€327.90	2%	-66%	727	460	42	-24	10.9x	20.0x	8.2x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Fuelcell Energy	\$3.06	4%	-47%	1,241	959	70	-44	13.8x	7.0x	6.6x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Powercell	SEK 121.00	3%	-36%	574	556	19	-7	29.8x	29.5x	21.8x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Enapter	€17.65	8%	-25%	477	451	10	-9	45.2x	28.9x	3.9x	n.a.	n.a.	61.7x	n.a.	n.a.	n.a.
Hexagon Purus	20.94 kr	6%	-12%	523	459	59	-32	7.8x	5.3x	3.0x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Proton Motor Power Systems	€11.50	2%	-48%	206	316	4	-12	82.9x	n.a.	n.a.	n.a.	n.a.	n.a.	0.2x	n.a.	n.a.
McPhy Energy	€11.72	-9%	-45%	326	184	16	-26	11.8x	11.7x	5.6x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Forsee Power	€2.62	-4%	-56%	139	146	86	-27	1.7x	1.4x	0.9x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
SFC Energy	€18.48	11%	-34%	319	321	76	-1	4.2x	3.9x	2.8x	n.a.	42.2x	24.1x	n.a.	n.a.	54.2x
AFC Energy	£19.69	6%	-58%	167	107	1	-13	n.a.	22.8x	8.9x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Advent Technologies	\$2.23	12%	-68%	115	68	7	-42	9.6x	3.0x	1.5x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Everfuel	46.50 kr	-2%	3%	350	312	0	-1	n.a.	64.8x	17.8x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
S-FuelCell	₩20,050.00	3%	-28%	97	91	41	3	2.2x	n.a.	n.a.	30.5x	n.a.	n.a.	22.6x	n.a.	n.a.
Gencell	¥231.20	-11%	-78%	71	64	6	-19	11.6x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Median Average								11.3x	7.6x	4.4x	15.8x	42.2x	31.4x	11.4x	4.0x	54.2x
								16.0x	14.2x	6.2x	15.8x	43.1x	30.2x	11.4x	4.0x	44.0x
Hydrogen																
Hafner Energy	€5.65	2%	-26%	262	201	5	-3	40.7x	n.a.	7.0x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Green Hydrogen Systems	14.00 kr.	6%	-64%	155	173	1	-24	n.a.	85.6x	27.9x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Clean Power Hydrogen	\$42.00	6%	-7%	130	130	0	-5	n.a.	n.a.	22.0x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Xebec Adsorption	n.a.	n.a.	-78%	59	94	100	-2	0.9x	0.6x	0.4x	n.a.	n.a.	15.4x	n.a.	n.a.	n.a.
PowerHouse Energy	£1.55	-9%	-64%	71	62	1	-3	64.0x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Fusion Fuel	\$3.78	6%	-60%	42	2		-8	n.a.	0.2x	0.0x	n.a.	n.a.	n.a.	1.5x	n.a.	n.a.
Hazer Group	¥50.56	1%	-51%	62	55		-9	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
PowerHouse Energy	£1.60	83%	-63%	71	62	1	-3	63.9x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Median Average								52.3x	0.6x	7.0x	n.a.	n.a.	15.4x	1.5x	n.a.	n.a.
								42.4x	28.8x	11.5x	n.a.	n.a.	15.4x	1.5x	n.a.	n.a.

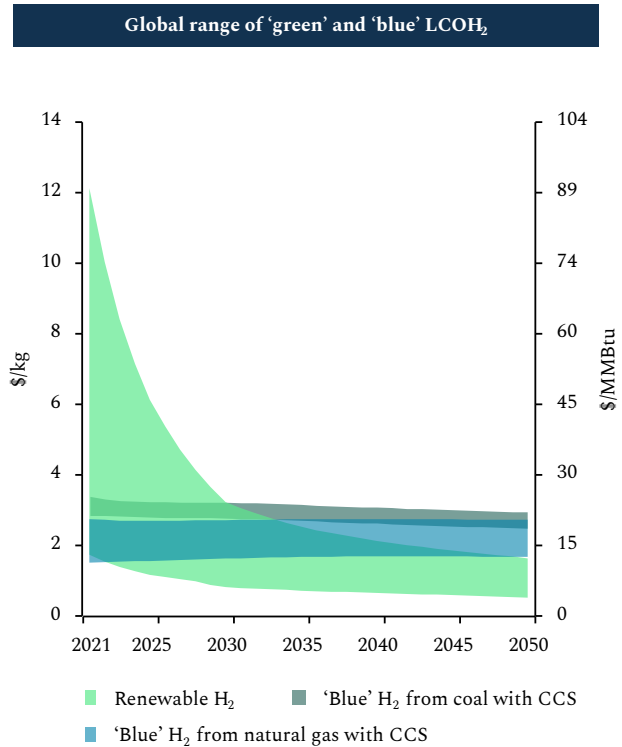
Figures in dollars millions except for share price; actuals are converted using FX rate as of the relevant fiscal year-end, estimates using the latest FX rate as of 19th January 2023.

N/A: Not Applicable.

Source: Bloomberg as of the 19th January 2023..



Source: Bloomberg.



MOBILITY

Company	Price Current	Weekly % Change	YTD Price % Change	Market Cap	Enterprise Value	Revenue 2021	EBITDA 2021	EV/Revenue			EV/EBITDA			P/E		
								2021	2022E	2023E	2021	2022E	2023E	2021	2022E	2023E
EV Manufacturers																
Tesla	\$198.58	8%	-43%	721,610	707,650	53,823	10,061	13.1x	8.5x	6.1x	70.3x	36.2x	25.6x	n.a.	55.7x	38.6x
BYD	Y246.67	-3%	-9%	85,869	84,655	32,763	3,206	2.6x	1.6x	1.2x	26.4x	18.1x	12.5x	n.a.	66.7x	41.4x
Rivian	\$34.48	10%	-66%	31,590	18,322	55	-4,023	n.a.	10.1x	3.0x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Lucid Motors	\$14.23	11%	-65%	23,876	21,815	27	-1,436	n.a.	28.8x	8.1x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
NIO	\$9.69	3%	-71%	16,187	13,402	5,603	-332	2.4x	1.7x	0.9x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
XPeng	\$6.89	-4%	-86%	5,938	4,959	3,254	-890	1.5x	1.0x	0.6x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Li Auto	\$14.26	-3%	-56%	14,863	8,976	4,188	-66	2.1x	1.4x	0.7x	n.a.	n.a.	20.5x	n.a.	n.a.	47.6x
Arrival	\$0.76	12%	-90%	485	48	0	-1,416	n.a.	2.2x	0.1x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Fisker	\$7.78	4%	-53%	2,324	2,156	0	-325	n.a.	67.1x	1.1x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Nikola	\$3.20	8%	-69%	1,458	1,301	0	-685	n.a.	12.2x	2.1x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Embark Technology	\$6.51	0%	-96%	150	-62	0	-103	n.a.	n.a.	n.a.	0.6x	0.5x	0.4x	n.a.	n.a.	n.a.
REE Automotive	\$0.59	-1%	-89%	191	-85	0	-515	n.a.	n.a.	n.a.	0.2x	0.7x	1.0x	n.a.	n.a.	n.a.
Lion Electric	\$2.82	14%	-72%	536	369	58	-117	6.4x	2.6x	1.0x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Faraday Future	\$0.51	11%	-92%	233	-84	0	-346	n.a.	n.a.	n.a.	0.2x	0.2x	0.2x	n.a.	n.a.	n.a.
Proterra	\$5.90	12%	-37%	1,328	803	243	-112	3.3x	2.6x	1.5x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Polestar	\$4.15	0%	-65%	8,752	8,071	1,337	-756	6.0x	3.4x	1.7x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Canoo	\$1.38	1%	-83%	390	383	0	-440	n.a.	63.9x	0.9x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Workhorse	\$2.61	10%	-42%	427	297	-1	-183	n.a.	16.3x	2.3x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sono Motors	\$1.38	-11%	-87%	117	-31	0	-69	n.a.	n.a.	n.a.	0.4x	0.2x	0.3x	n.a.	n.a.	n.a.
Hylion	\$2.81	15%	-55%	489	108	0	-94	n.a.	55.7x	12.4x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
VivoPower International	\$0.51	5%	-84%	12	40	24	-3	1.7x	1.8x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
XOS Trucks	\$1.08	15%	-63%	179	122	5	-52	24.2x	3.1x	0.5x	n.a.	n.a.	n.a.	n.a.	7.7x	n.a.
Lightning E-Motors	\$1.40	10%	-78%	106	59	21	-40	2.8x	1.6x	0.3x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Amulair Thermal Technology	NT\$29.60	0%	-43%	82	117	41	0	2.9x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Greenpower Motor	\$2.40	20%	-74%	56	58	12	-6	4.9x	3.0x	1.6x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
XL Fleet	\$0.79	10%	-76%	113	-204	16	-56	n.a.	n.a.	n.a.	3.6x	n.a.	n.a.	n.a.	3.9x	n.a.
Median								2.9x	3.0x	1.2x	0.6x	0.6x	1.0x	5.8x	61.2x	41.4x
Average								5.7x	14.4x	2.4x	14.5x	9.3x	8.7x	5.8x	61.2x	42.5x
EV Charging Infrastructure																
Chargepoint Holdings	\$11.80	9%	-32%	4,701	4,550	n.a.	n.a.	n.a.	n.a.	19.1x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
EVGO	\$7.51	7%	-29%	1,989	1,504	n.a.	n.a.	n.a.	71.2x	30.8x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Wallbox	\$6.75	-1%	-59%	933	846	n.a.	n.a.	n.a.	10.9x	4.6x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Alfen Beheer	€107.40	3%	26%	2,321	2,303	236	29	9.8x	8.3x	5.7x	80.2x	57.6x	30.8x	n.a.	n.a.	48.3x
Volta	\$1.08	12%	-86%	182	31	n.a.	n.a.	n.a.	0.9x	0.5x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Blink Charging	\$14.47	9%	-46%	736	655	6	-12	n.a.	34.1x	12.0x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Allego	\$3.36	1%	-66%	898	1,051	n.a.	n.a.	n.a.	11.7x	7.3x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Pod Point	£49.52	-1%	-80%	88	88	n.a.	n.a.	n.a.	1.1x	1.0x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Beam Global	\$11.55	10%	-43%	117	105	6	-4	18.7x	12.3x	6.6x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Tritium	\$1.87	-9%	-81%	286	286	n.a.	n.a.	n.a.	n.a.	3.3x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Median								14.3x	11.3x	6.2x	80.2x	57.6x	30.8x	n.a.	n.a.	48.3x
Average								14.3x	18.8x	9.1x	80.2x	57.6x	30.8x	n.a.	n.a.	48.3x
Mobility services																
Uber	\$28.11	-1%	-37%	54,448	62,150	11,187	-2,602	3.6x	3.6x	2.0x	n.a.	n.a.	39.9x	n.a.	n.a.	n.a.
Didi	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Grab	\$2.54	10%	-65%	9,782	4,039	n.a.	n.a.	5.5x	5.5x	3.2x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Lyft	\$14.52	4%	-67%	5,122	4,375	2,356	-794	1.4x	1.4x	1.1x	47.4x	47.4x	15.7x	n.a.	n.a.	n.a.
Bird	\$0.40	14%	-93%	115	183	n.a.	n.a.	0.9x	0.9x	0.7x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Wejo	\$1.10	3%	-83%	118	85	n.a.	n.a.	20.7x	20.7x	9.0x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Swvl	\$0.56	3%	-94%	76	75	n.a.	n.a.	n.a.	n.a.	0.8x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Median								3.6x	3.6x	1.5x	47.4x	47.4x	27.8x	n.a.	n.a.	n.a.
Average								6.4x	6.4x	2.8x	47.4x	47.4x	27.8x	n.a.	n.a.	n.a.
Automotive Manufacturers																
Tesla	\$198.53	8%	-43%	721,610	707,650	31,296	5,917	13.4x	13.4x	8.5x	61.3x	61.3x	36.2x	n.a.	n.a.	55.7x
Toyota	¥2,059.50	3%	-8%	226,603	378,583	276,290	31,546	1.5x	1.5x	1.6x	13.7x	13.7x	12.4x	11.3x	12.2x	10.6x
Volkswagen	€169.45	0%	-36%	76,175	71,529	n.a.	n.a.	0.3x	0.3x	0.3x	1.4x	1.4x	1.6x	n.a.	5.0x	4.5x
BYD	HK\$175.70	-5%	-34%	85,869	84,655	22,586	3,124	2.4x	2.4x	1.6x	26.3x	26.3x	18.1x	n.a.	n.a.	66.7x
Hyundai	₩164,500.00	2%	-22%	24,614	95,759	94,012	6,360	1.0x	1.0x	1.0x	10.0x	10.0x	9.4x	14.9x	5.0x	4.3x
General Motors	\$38.85	9%	-36%	55,194	55,489	119,640	12,812	0.4x	0.4x	0.4x	3.6x	3.6x	3.2x	10.4x	5.5x	5.6x
Honda	¥3,373.00	4%	1%	41,205	77,658	138,228	10,915	0.7x	0.7x	0.7x	9.3x	9.3x	8.6x	8.1x	8.9x	7.7x
Ford	\$13.26	6%	-39%	53,312	41,584	117,862	3,578	n.a.	n.a.	0.3x	n.a.	n.a.	2.9x	n.a.	5.3x	17.6x
BMW	€79.52	2%	-13%	51,967	94,631	116,536	12,712	0.8x	0.8x	0.7x	4.5x	4.5x	4.5x	11.8x	4.3x	3.5x
Mercedes Benz Group	€58.63	0%	-15%	62,323	36,068	185,565	18,262	0.2x	0.2x	0.2x	1.1x	1.1x	1.4x	17.5x	4.2x	4.7x
Stellantis	\$13.57	1%	-31%	42,510	23,440	162,951	16,364	0.1x	0.1x	0.1x	1.0x	1.0x	0.8x	23.1x	3.3x	2.8x
Ferrari	€196.10	1%	-14%	36,314	38,019	4,182	1,374	7.9x	7.9x	7.8x	22.1x	22.1x	22.0x	56.5x	39.7x	40.9x
SAIC	¥13.75	-1%	-34%	22,016	29,473	116,376	4,561	0.2x	0.2x	0.3x	5.4x	5.4x	5.9x	6.5x	5.7x	7.1x
NIO	\$9.69	3%	-71%	16,187	13,402	2,523	-596	2.4x	2.4x	1.7x	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Tata Motors	\$25.26	3%	-25%	18,224	31,077	35,323	3,141	0.9x	0.9x	0.9x	8.1x	8.1x	8.8x	n.a.	n.a.	n.a.
Volvo	SEK 45.67	1%	-45%	12,385	10,564	n.a.	n.a.	0.4x	0.4x	0.4x	2.7x	2.7x	2.8x	n.a.	8.7x	7.7x
Geely	HK\$8.44	-4%	-60%	10,813	8,565	14,114	1,687	0.5x	0.5x	0.5x	4.7x	4.7x	5.7x	9.8x	10.9x	15.3x
Kia	₩66,300.00	2%	-20%	18,821	11,749	53,361	3,761	0.2x	0.2x	0.2x	1.8x	1.8x	1.7x	14.5x	4.9x	4.8x
Nissan	¥474.40	4%	-20%	13,504	6,743	93,833	3,770	0.1x	0.1x	0.1x	8.6x	8.6x	1.7x	n.a.	n.a.	8.0x
Guangzhou Automobile	HK\$4.78	-9%	-39%	13,323	12,379	8,875	76	1.1x	1.1x	0.9x	68.0x	68.0x	56.0x	13.0x	11.8x	9.4x
Suzuki	¥5,020.00	8%	11%	16,628	16,660	32,665	3,461	0.6x	0.6x	0.6x	5.2x	5.2x	6.1x	12.6x	12.8x	13.0x
Renault	€31.24	-2%	-1%	9,178	4,372	52,993	4,386	0.1x	0.1x	0.1x	0.7x	0.7x	0.7x	n.a.	11.9x	31.7x
Dongfeng	HK\$3.55	-4%	-46%	3,897	3,374	15,904	928	0.2x	0.2x	0.2x	1.9x	1.9x	4.5x	2.7x	2.1x	2.5x
Subaru	¥2,315.50	0%	8%	12,011	6,133	30,054	2,950	0.2x	0.2x	0.3x	2.7x	2.7x	2.8x	8.2x	14.6x	19.1x
Mazda	¥1,003.00	5%	7%	4,274	4,942	31,709	1,210	0.2x	0.2x	0.2x	5.7x	5.7x	3.7x	14.1x	n.a.	10.6x
Mitsubishi	¥500.00	1%	48%	5,025	4,658	21,423	847	0.4x	0.4x	0.3x	n.a.	n.a.	4.4x	n.a.	n.a.	11.4x
Median								0.4x	0.4x	0.4x	5.2x	5.2x	4.5x	12.2x	5.7x	8.7x
Average								1.4x	1.4x	1.1x	11.7x	11.7x	9.0x	14.7x	9.3x	15.2x

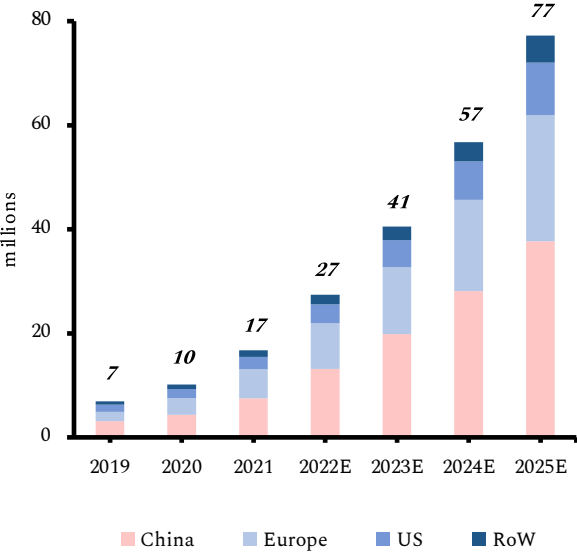
Figures in dollars millions except for share price; actuals are converted using FX rate as of the relevant fiscal year-end, estimates using the latest FX rate as of 19th January 2023.

N/A: Not Applicable.

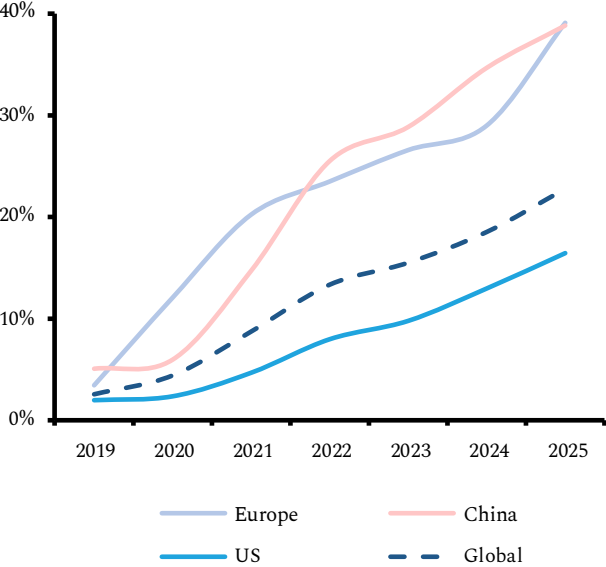
Source: Bloomberg as of the 19th January 2023.

MOBILITY (cont'd)

Global EV fleet by region



EVs as a % of total vehicle sales



Source: Bloomberg

EUROPEAN UTILITIES

Company	Price Current	Weekly % Change	YTD Price % Change	Market Cap	Enterprise Value	Revenue 2021	EBITDA 2021	EV/Revenue			EV/EBITDA			P/E		
								2021	2022E	2023E	2021	2022E	2023E	2021	2022E	2023E
European Utilities																
Enel	€4.50	5%	-37%	45,488	125,080	99,476	19,363	1.3x	1.3x	1.4x	6.5x	6.6x	6.2x	12.1	8.6	7.8
Iberdrola	€10.15	5%	-3%	64,194	136,248	46,263	13,764	2.9x	2.8x	2.8x	9.9x	10.8x	10.0x	14.0x	15.6x	14.3x
EDF	€11.93	0%	18%	46,051	90,294	99,898	18,585	0.9x	1.0x	1.0x	4.9x	n.a.	5.0x	7.6	n.a.	11.2
Eni	€13.16	7%	6%	46,707	58,438	90,570	22,950	0.6x	0.5x	0.5x	2.5x	2.1x	2.4x	6.8x	3.7x	5.3x
Engie	€13.16	4%	0%	31,853	63,612	68,442	12,173	0.9x	0.9x	0.9x	5.2x	5.0x	5.3x	7.4	6.8	7.8
Orsted	623.90 kr.	4%	-27%	35,008	43,650	12,353	3,846	3.5x	3.4x	3.8x	11.3x	11.0x	12.7x	20.1x	14.7x	27.3x
Naturgy Energy	€25.63	5%	-10%	24,692	40,414	26,186	4,214	1.5x	1.5x	1.7x	9.6x	9.5x	9.4x	17.2	17.9	18.3
EDP	€4.37	1%	-10%	17,223	40,508	17,721	4,204	2.3x	2.3x	2.2x	9.6x	9.7x	8.7x	22.2x	20.5x	15.6x
Verbund	€77.50	-2%	-20%	26,752	30,934	5,650	1,992	5.5x	3.6x	3.4x	15.5x	9.7x	7.9x	25.9	14.6	10.5
Fortum	€13.87	-1%	-48%	12,242	21,420	132,943	820	0.2x	0.4x	0.4x	26.1x	n.a.	7.8x	14.0x	n.a.	8.5x
RWE	€38.89	1%	8%	26,130	34,614	29,009	3,708	1.2x	1.2x	1.2x	9.3x	6.3x	7.0x	30.6	9.4	11.7
EnBW	€82.00	2%	8%	22,536	30,229	38,024	3,307	0.8x	n.a.	n.a.	9.1x	n.a.	n.a.	52.5x	n.a.	n.a.
Endesa	€16.77	10%	-17%	17,642	27,063	24,719	4,912	1.1x	1.2x	1.2x	5.5x	6.5x	6.2x	10.4	10.2	9.5
CEZ	808.00 Kč	4%	0%	17,630	21,315	10,370	2,391	2.1x	1.7x	1.5x	8.9x	4.7x	4.1x	39.0x	7.6x	20.1x
A2A	€1.12	7%	-35%	3,485	8,871	13,427	1,568	0.7x	0.5x	0.6x	5.7x	6.4x	5.8x	5.8	8.1	9.3
Hera	€2.38	10%	-36%	3,516	7,653	12,484	1,279	0.6x	0.6x	0.7x	6.0x	6.3x	6.2x	8.9x	10.7x	10.9x
Iren	€1.51	7%	-44%	1,952	6,177	5,709	1,102	1.1x	1.0x	1.0x	5.6x	5.8x	5.5x	5.4	7.5	6.6
BKW	CHF 115.40	0%	-3%	6,099	8,192	3,698	641	2.2x	2.1x	1.9x	12.8x	11.1x	10.5x	18.3x	25.2x	16.3x
Public Power	€6.07	-1%	-35%	2,304	5,386	6,749	926	0.8x	1.1x	1.2x	5.8x	5.7x	4.7x	n.a.	n.a.	n.a.
Centrica	£76.10	11%	3%	5,199	4,924	20,284	883	0.2x	0.2x	0.2x	5.6x	1.9x	1.6x	3.1x	4.6x	4.3x
EVN	€16.62	4%	-37%	2,970	4,290	2,863	716	1.5x	1.8x	1.9x	6.0x	6.5x	6.4x	7.6	13.9	11.1
Drax Group	£510.00	4%	-17%	2,365	3,897	7,000	545	0.6x	0.5x	0.5x	7.2x	5.0x	3.6x	21.6x	6.8x	4.1x
PG&E	5.65 \$	19%	-31%	2,673	2,761	13,667	2,471	0.2x	0.2x	0.1x	1.1x	1.5x	1.5x	2.6	3.7	3.5
Redes Energeticas Nacionais	€2.60	3%	1%	1,724	3,296	669	515	4.9x	4.0x	3.9x	6.4x	7.0x	6.9x	15.0x	16.7x	15.7x
Tauron Polska	1.93 zł	8%	-28%	713	3,870	6,636	773	0.6x	0.5x	0.3x	5.0x	5.3x	3.9x	8.1	n.a.	n.a.
Inter RAO UES	3.07 P	5%	-30%	5,164	2,274	n.a.	n.a.	n.a.	0.1x	0.1x	n.a.	0.9x	0.9x	n.a.	3.0x	2.8x
Alerion Cleanpower	€36.05	4%	23%	1,942	2,410	176	139	13.7x	n.a.	n.a.	17.3x	12.2x	8.7x	33.7	n.a.	n.a.
AB Ignitis Grupe	€18.32	0%	-14%	1,318	2,530	2,210	376	1.1x	0.8x	0.8x	6.7x	6.7x	6.2x	7.2x	6.7x	7.5x
Romande Energie	CHF 1,115.00	-3%	-19%	1,272	1,338	672	145	2.0x	1.9x	1.8x	9.2x	9.2x	9.0x	35.4	n.a.	n.a.
Good Energy	£215.00	0%	-17%	42	22	201	5	0.1x	0.1x	0.1x	4.3x	4.8x	3.0x	n.a.	17.5x	11.3x
SkandiaEnergi	2.02 kr	-44%	-75%	3	-7	39	0	n.a.	n.a.	n.a.	32.3x	n.a.	n.a.	n.a.	n.a.	n.a.
Median								1.1x	1.1x	1.1x	6.6x	6.4x	6.2x	14.0x	9.4x	10.5x
Average								1.9x	1.3x	1.3x	9.0x	6.6x	6.1x	16.8x	11.0x	10.9x
Grid Companies																
National Grid	£955.80	2%	-12%	39,931	95,297	19,538	6,629	4.9x	4.6x	4.9x	14.4x	13.6x	13.4x	15.5	15.9	13.6
E.ON	€8.38	3%	-32%	21,987	58,973	75,964	8,195	0.8x	0.9x	0.7x	7.2x	6.9x	7.7x	16.4x	9.3x	9.9x
SSE	£1,543.00	2%	-7%	19,395	31,360	9,245	2,470	3.4x	3.2x	3.3x	12.7x	10.1x	11.4x	22.1	8.2	13.7
Snam	€4.50	4%	-16%	15,037	28,535	3,217	2,589	8.9x	8.8x	8.9x	11.0x	11.7x	13.1x	11.4x	11.6x	13.1x
Terna-Rete Elettrica Nazionale	€6.70	5%	-7%	13,377	24,707	2,911	2,124	8.5x	8.8x	9.1x	11.6x	12.2x	13.0x	14.6	15.6	16.6
Red Electrica Corporacion	€16.20	5%	-16%	8,723	14,536	2,409	1,885	6.0x	6.5x	7.3x	7.7x	8.4x	9.6x	10.7x	11.2x	13.0x
Elia Group	€126.30	5%	8%	9,220	14,085	2,809	1,130	5.0x	4.7x	4.9x	12.5x	12.4x	12.9x	29.9	30.9	29.9
Enagas	€12.32	7%	-20%	4,247	8,491	1,340	1,158	6.3x	7.5x	8.9x	7.3x	8.3x	10.7x	8.0x	9.4x	10.5x
Acea	€12.76	6%	-32%	2,700	7,523	3,952	1,344	1.9x	1.8x	1.7x	5.6x	5.5x	5.9x	8.0	7.9	8.5
Albioma	n.a.	n.a.	35%	1,478	2,663	637	246	4.2x	4.3x	4.4x	10.8x	11.1x	12.0x	24.6x	23.6x	23.7x
MVV Energie	€29.90	0%	-17%	1,958	3,247	4,423	492	0.7x	0.7x	0.8x	6.6x	5.6x	6.3x	16.9	10.8	12.1
Ascopiave	€2.37	10%	-32%	552	1,129	185	74	6.1x	7.1x	7.0x	15.2x	12.8x	14.9x	11.0x	11.3x	12.8x
Transelectrica	17.45 lei	1%	-23%	259	230	724	n.a.	0.3x	n.a.	0.3x	n.a.	n.a.	3.2x	n.a.	n.a.	n.a.
Median								4.9x	4.7x	4.9x	10.9x	10.6x	11.4x	15.0x	11.2x	13.1x
Average								4.4x	4.9x	4.8x	10.2x	9.9x	10.3x	15.8x	13.8x	14.8x

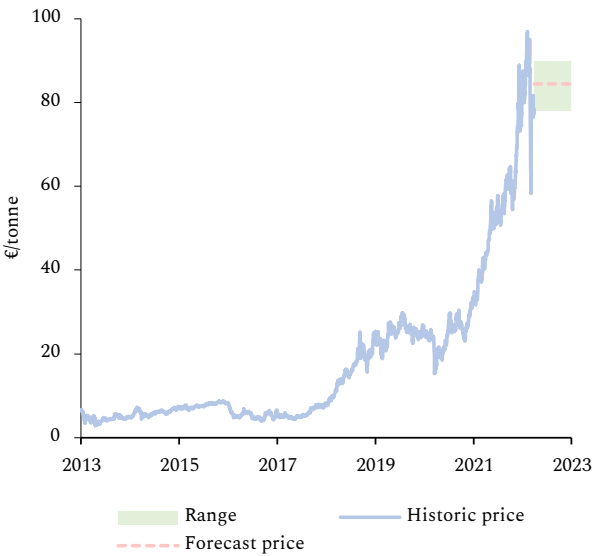
Figures in dollars millions except for share price; actuals are converted using FX rate as of the relevant fiscal year-end, estimates using the latest FX rate as of 19th January 2023.

N/A: Not Applicable.

Source: Bloomberg as of the 19th January 2023.

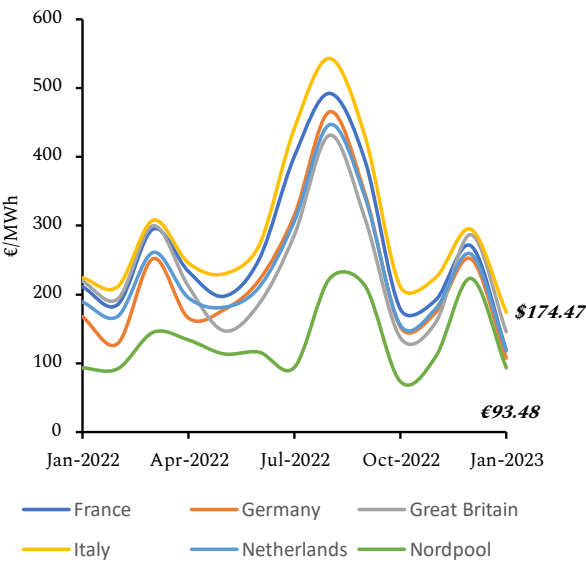
EUROPEAN UTILITIES (cont'd)

EU ETS carbon price outlook



Source: Bloomberg

Monthly electricity prices in Europe



NORTH AMERICAN UTILITIES

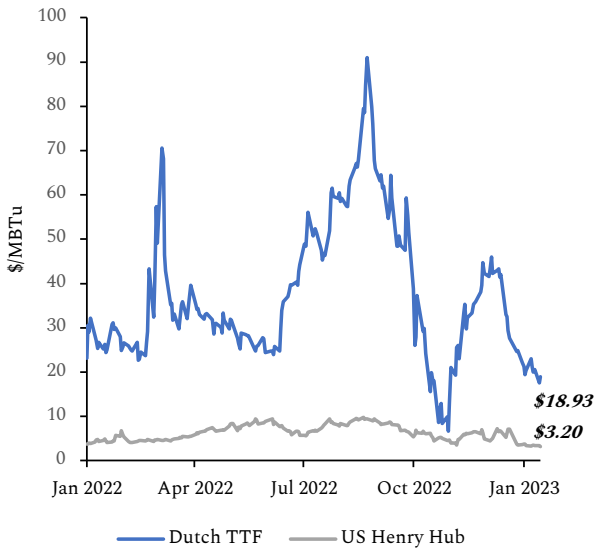
Company	Price Current	Weekly % Change	YTD Price % Change	Market Cap	Enterprise Value	Revenue 2021	EBITDA 2021	EV/Revenue 2021	EV/Revenue 2022E	EV/Revenue 2023E	EV/EBITDA 2021	EV/EBITDA 2022E	EV/EBITDA 2023E	P/E 2021	P/E 2022E	P/E 2023E
North American Utilities																
Nextera Energy	\$79.03	8%	-14%	155,276	225,710	17,069	7,219	13.2x	10.6x	9.4x	31.3x	20.1x	16.6x	43.5x	27.2x	25.0x
Exelon	\$38.76	5%	-5%	38,441	75,351	36,347	10,493	2.1x	4.0x	3.8x	7.2x	10.4x	9.8x	22.5x	17.4x	15.5x
Xcel Energy	\$65.37	6%	-4%	35,774	60,983	13,431	4,747	4.5x	4.4x	4.3x	12.8x	12.6x	11.7x	22.4x	20.7x	19.4x
Edison International	\$60.23	8%	-11%	22,974	57,784	14,905	4,117	3.9x	3.7x	3.5x	14.0x	10.4x	9.3x	24.8x	16.5x	12.3x
Public Service Enterprise	\$57.43	4%	-13%	28,650	47,606	9,722	597	4.9x	5.4x	5.1x	79.7x	13.8x	12.5x	n.a.	16.5x	16.0x
Entergy	\$107.73	5%	-3%	21,914	48,512	11,743	4,158	4.1x	3.9x	4.0x	11.7x	12.0x	10.9x	19.6x	17.3x	15.5x
Transalta Renewables	CS\$14.64	5%	-22%	2,865	3,344	375	175	8.9x	8.2x	8.5x	19.1x	8.9x	8.6x	25.6x	24.6x	17.7x
Fortis	CS\$2.97	3%	-12%	18,656	41,961	7,538	3,132	5.6x	5.5x	5.3x	13.4x	12.8x	12.0x	18.1x	19.3x	17.5x
Algonquin Power & Utilities	CS\$14.94	4%	-18%	7,401	16,717	2,285	827	7.3x	6.1x	5.2x	20.2x	13.0x	10.7x	27.9x	23.5x	13.7x
Emera	CS\$15.51	0%	-18%	10,093	24,145	4,600	1,472	5.2x	5.0x	4.7x	16.4x	12.8x	11.5x	22.6x	19.0x	15.6x
Canadian Utilities	CS\$36.03	3%	-2%	7,148	14,790	2,805	1,269	5.3x	5.1x	6.4x	11.7x	10.1x	10.1x	22.8x	15.0x	15.7x
FirstEnergy	\$38.08	3%	-8%	21,772	43,217	11,132	3,380	3.9x	3.7x	3.6x	12.8x	11.3x	10.6x	17.0x	16.0x	14.7x
Wec Energy	\$91.60	6%	-5%	28,894	44,390	8,316	2,793	5.3x	5.0x	4.9x	15.9x	14.5x	13.5x	22.2x	20.8x	19.8x
DTE Energy	\$113.64	6%	-5%	22,017	41,723	14,964	3,031	2.8x	2.6x	2.7x	13.8x	12.8x	11.8x	24.3x	18.4x	17.1x
Nisource	\$25.89	5%	-6%	10,510	22,385	4,900	1,771	4.6x	4.2x	4.1x	12.6x	11.0x	10.1x	18.0x	16.5x	15.1x
Median								4.9x	5.0x	4.7x	13.8x	12.6x	10.9x	22.6x	18.4x	15.7x
Average								5.4x	5.2x	5.0x	19.5x	12.4x	11.3x	23.7x	19.2x	16.7x
Integrated Utilities																
Duke Energy	\$91.00	6%	-9%	72,380	147,010	24,992	10,350	5.9x	5.8x	5.5x	14.2x	13.0x	12.4x	23.9x	18.4x	17.5x
The Southern Company	\$66.34	3%	-3%	70,488	129,608	21,300	8,957	6.1x	5.9x	5.1x	14.5x	14.5x	13.7x	21.2x	21.3x	18.2x
Dominion Energy	\$69.41	5%	-11%	57,784	101,179	15,359	6,457	6.6x	6.8x	6.4x	15.7x	14.5x	13.9x	33.3x	18.4x	18.2x
American Electric Power	\$89.40	4%	1%	45,939	83,778	15,827	5,908	5.3x	5.1x	4.7x	14.2x	13.3x	12.1x	21.4x	19.3x	17.9x
PG&E Corporation	\$15.25	4%	25%	30,312	82,160	18,504	6,977	4.4x	n.a.	3.7x	11.8x	n.a.	10.7x	n.a.	n.a.	14.7x
Edison International	\$60.23	8%	-11%	22,974	57,784	13,442	4,480	4.3x	4.0x	3.7x	12.9x	12.1x	10.4x	20.8x	21.5x	16.5x
Hydro One	\$34.04	4%	4%	14,945	26,261	5,495	1,879	4.8x	4.6x	4.6x	14.0x	13.4x	13.2x	20.7x	19.8x	20.2x
Eversource Energy	\$76.77	5%	-14%	26,596	47,671	8,811	3,161	5.4x	5.1x	4.5x	15.1x	14.0x	12.9x	21.6x	20.8x	18.7x
DTE Energy	\$113.64	6%	-5%	22,017	41,723	13,034	3,539	3.2x	3.2x	2.6x	11.8x	13.4x	12.8x	16.2x	20.1x	18.4x
Ameren Corporation	\$82.33	6%	-7%	21,272	36,005	6,011	2,445	6.0x	5.8x	5.3x	14.7x	13.7x	13.2x	24.6x	21.5x	20.0x
Centerpoint Energy	\$28.81	6%	4%	18,134	33,459	8,061	2,623	4.2x	4.2x	3.9x	12.8x	12.1x	11.5x	n.a.	20.2x	19.7x
CMS Energy	\$57.92	6%	-10%	16,811	31,186	6,879	2,459	4.5x	4.5x	4.1x	12.7x	12.5x	12.4x	22.0x	21.7x	20.1x
PPL Corporation	\$26.51	4%	-12%	19,516	32,825	7,940	4,367	4.1x	5.3x	4.7x	7.5x	10.5x	11.0x	11.0x	15.6x	20.5x
Pinnacle West Capital	\$68.30	6%	-2%	7,721	16,423	3,583	1,453	4.6x	4.4x	4.3x	11.3x	10.8x	11.6x	13.5x	13.0x	16.9x
Black Hills	\$65.87	7%	-6%	4,287	8,834	1,868	673	4.7x	4.8x	4.3x	13.1x	11.6x	12.1x	18.8x	17.6x	15.7x
Median								4.7x	4.9x	4.5x	13.1x	13.1x	12.4x	21.2x	20.0x	18.2x
Average								4.9x	5.0x	4.5x	13.1x	12.8x	12.3x	20.7x	19.2x	18.2x

Figures in dollars millions except for share price; actuals are converted using FX rate as of the relevant fiscal year-end, estimates using the latest FX rate as of 19th January 2023.

N/A: Not Applicable.

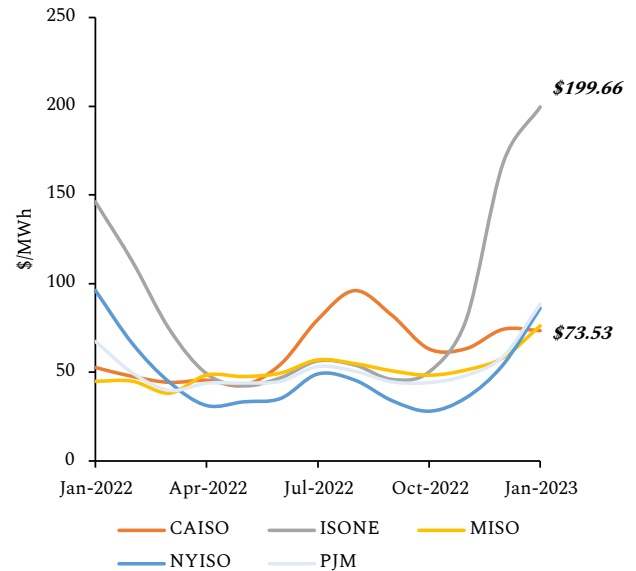
Source: Bloomberg as of the 19th January 2023.

Monthly gas prices in the US and Europe



Source: Bloomberg

Monthly electricity prices in the US



OIL & NATURAL GAS

Company	Price	Weekly	YTD Price	Market	Enterprise	Revenue	EBITDA	EV/Revenue			EV/EBITDA			P/E		
	Current	% Change	% Change	Cap	Value	2021	2021	2021	2022E	2023E	2021	2022E	2023E	2021	2022E	2023E
Oil & Gas Majors																
Saudi Aramco	34.95 ر.س.	-5%	7%	2,026,085	2,090,251	359,085	228,589	5.8x	3.6x	4.0x	9.1x	6.2x	6.8x	19.2x	12.3x	13.2x
Exxon Mobil	\$110.70	4%	74%	455,863	477,827	276,692	45,382	1.7x	1.2x	1.2x	10.5x	4.6x	5.4x	19.8x	8.2x	10.5x
Chevron	\$179.98	4%	51%	352,299	361,382	155,606	36,304	2.3x	1.5x	1.6x	10.0x	5.3x	5.7x	22.5x	9.7x	11.1x
Royal Dutch Shell	€27.90	4%	42%	197,273	246,999	261,504	49,204	0.9x	0.6x	0.6x	5.0x	2.9x	3.2x	9.8x	4.7x	6.1x
TotalEnergies	€54.90	3%	22%	142,870	159,914	184,634	38,635	0.9x	0.5x	0.6x	4.1x	2.4x	2.7x	8.9x	4.8x	4.8x
Gazprom	169.92 P	2%	-52%	64,923	104,100	138,979	44,897	0.7x	0.4x	1.1x	2.3x	0.9x	3.4x	2.3x	0.8x	3.5x
BP	£475.40	1%	35%	101,063	143,443	157,739	28,307	0.9x	0.6x	0.6x	5.1x	2.7x	3.0x	13.4x	14.0x	5.7x
Petrobras	R\$ 35.78	-4%	14%	84,732	119,848	84,016	49,268	1.4x	1.0x	1.1x	2.4x	1.8x	2.2x	4.3x	2.8x	3.8x
ConocoPhillips	\$127.17	2%	72%	161,892	170,682	45,828	19,369	3.7x	2.2x	2.5x	8.8x	4.6x	5.1x	20.0x	8.0x	9.9x
Equinor	380.40 kr	6%	62%	116,720	101,843	88,744	44,972	1.1x	0.7x	0.7x	2.3x	1.2x	1.3x	13.6x	5.1x	6.0x
Novatek	1,108.00 P	10%	-37%	54,297	55,599	15,697	4,555	3.5x	2.2x	2.3x	12.2x	6.4x	12.9x	9.2x	6.8x	11.3x
Eni	€13.16	7%	6%	46,707	58,438	90,570	22,950	0.6x	0.5x	0.5x	2.5x	2.1x	2.4x	6.8x	3.7x	5.3x
Marathon Petroleum	\$113.57	2%	73%	56,629	78,717	119,983	8,245	0.7x	0.5x	0.5x	9.5x	3.5x	5.7x	5.8x	4.6x	10.0x
Canadian Natural Resources	C\$81.37	1%	49%	66,496	77,038	23,968	12,524	3.2x	2.5x	2.8x	6.2x	4.4x	4.9x	10.9x	7.1x	8.2x
Lukoil	4,695.50 P	5%	-29%	52,474	53,524	125,129	19,058	0.4x	n.a.	n.a.	2.8x	n.a.	n.a.	5.0x	n.a.	n.a.
Phillips 66	\$104.20	4%	38%	50,126	60,583	111,476	1,015	0.5x	0.4x	0.4x	59.7x	4.5x	6.3x	38.1x	6.2x	9.2x
Valero Energy	\$125.98	-3%	63%	48,568	57,978	113,977	4,909	0.5x	0.3x	0.4x	11.8x	3.5x	5.2x	52.2x	4.5x	8.5x
Omv	€46.41	14%	-8%	15,092	27,393	42,053	8,122	0.7x	0.6x	0.7x	3.4x	2.1x	2.5x	6.1x	3.3x	4.1x
Repsol	€13.74	3%	29%	19,828	26,731	58,837	6,814	0.5x	0.4x	0.4x	3.9x	2.2x	2.6x	6.7x	3.8x	4.6x
Galp Energia	€10.21	3%	17%	8,412	11,721	19,063	3,112	0.6x	0.5x	0.5x	3.8x	2.9x	3.1x	n.a.	8.0x	8.6x
Petronas Gas	RM17.10	1%	-1%	7,158	7,158	1,363	858	5.3x	5.9x	5.9x	8.3x	9.4x	9.4x	14.9x	18.9x	17.6x
Petronet LNG	₹ 205.45	1%	-6%	3,723	3,491	3,500	633	1.0x	0.6x	n.a.	5.5x	5.4x	n.a.	9.4x	8.5x	n.a.
China Oil & Gas	HK\$0.25	-2%	-46%	176	1,352	1,845	358	0.7x	n.a.	n.a.	3.8x	n.a.	n.a.	1.5x	n.a.	n.a.
Median								0.9x	0.6x	0.7x	5.1x	3.5x	4.1x	9.6x	6.2x	8.4x
Average								1.6x	1.3x	1.4x	8.4x	3.8x	4.7x	13.7x	6.9x	8.1x

Figures in dollars millions except for share price; actuals are converted using FX rate as of the relevant fiscal year-end, estimates using the latest FX rate as of 19th January 2023.

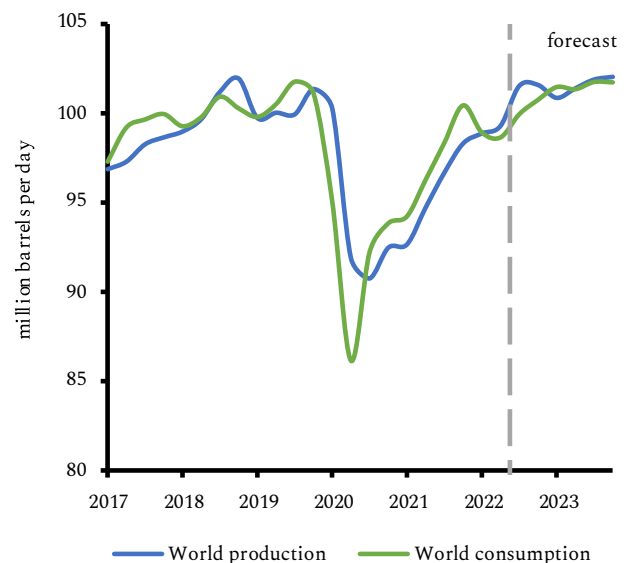
N/A: Not Applicable.

Source: Bloomberg as of the 19th January 2023.

West Texas Intermediate Crude Oil Price



Daily global crude oil demand



Source: Bloomberg

An aerial photograph of a coastline. The left side of the image shows a dense, lush green forest or mangrove area. The right side shows a deep blue body of water. The text "SELECTED M&A" is centered over the water area.

SELECTED M&A

SELECTED M&A TRANSACTIONS

Date	Target	Country	Valuation (\$m)	Solution	Acquirers
Semiconductors					
28 Oct	MaxPower Semiconductor	US	50	Semiconductors	Vishay Intertechnology
01 Nov	CoorsTek (Crucibles Business)	US	180	Wafers	Momentive Technologies
04 Jan	Grinding and Dicing Services	US	20	Supply Chain	Akoustis Technologies
Renewables					
01 Oct	SenseHawk	US	32	Solar Software	Reliance Industries
06 Oct	Kronos Solar Projects	Germany	247	Solar Developer	EDP Renováveis
07 Oct	Infrastructure and Energy Alternative	US	1100	Renewable EPC	MasTec
27 Oct	Clearway Energy Group	US	1600	IPP	TotalEnergies
19 Dec	Sistema Rinnovabili	Italy	356	IPP	CVA Group
Mobility					
01 Dec	Drivetek	Switzerland	38	EV Components	BorgWarner
20 Dec	Bird Canada	Canada	38	Micro-Mobility	Bird
Energy Storage & Fuel Cells					
01 Dec	Nestbuilder.com	US	n.a.	Energy Storage	Renewable Innovations
16 Dec	easyLi	France	n.a.	Energy Storage	Manitou Group
20 Dec	Sheaf Energy	UK	9	Energy Storage	Pacific Green Technologies

Source: Bloomberg