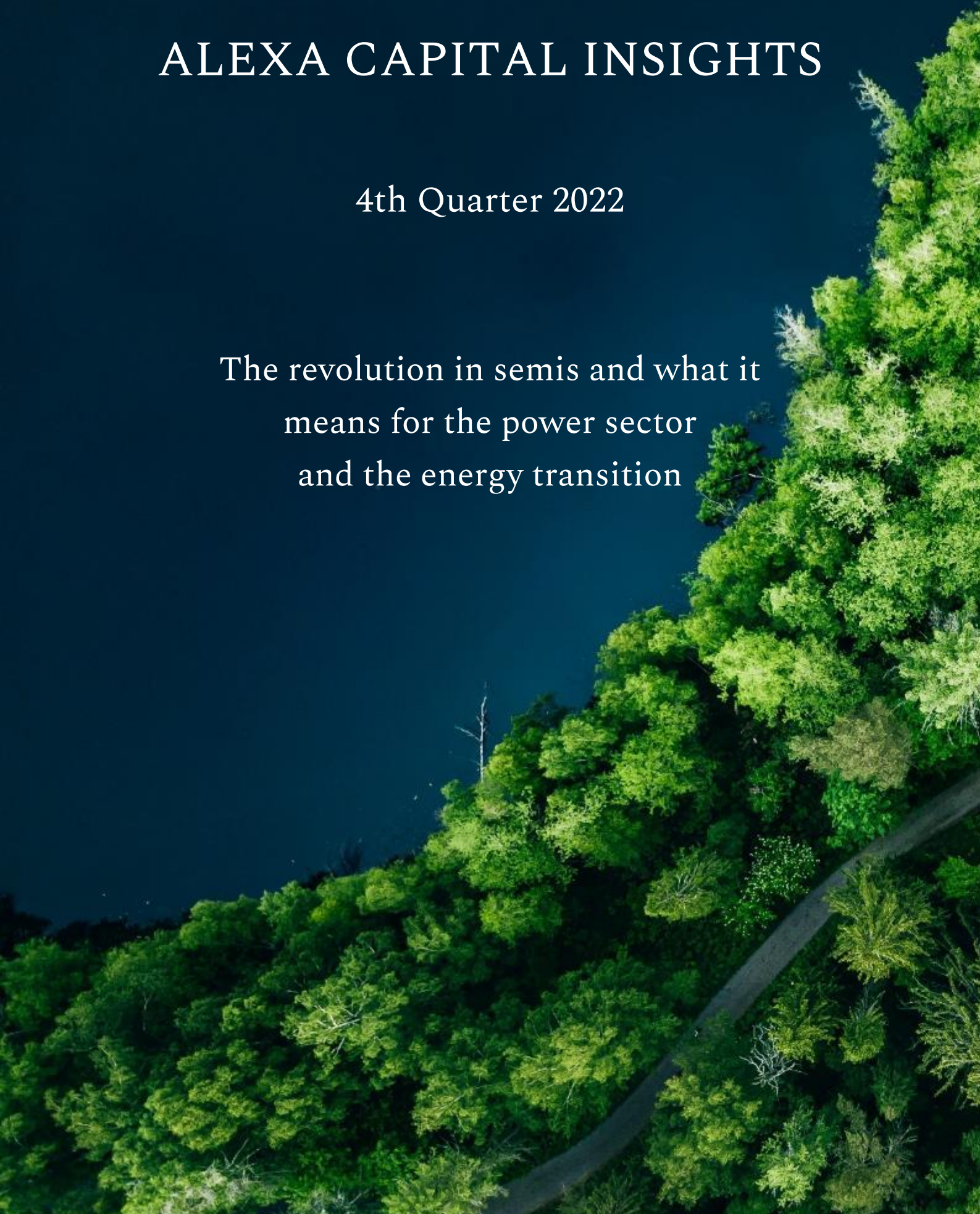


ALEXA CAPITAL INSIGHTS

4th Quarter 2022

The revolution in semis and what it
means for the power sector
and the energy transition



ALEXA CAPITAL INSIGHTS

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The revolution in semis and what it means for the power sector and the energy transition

The Semiconductor Industry Association said global semiconductor industry sales topped \$47.4 billion during the month of August 2022. This was an increase of just 0.1% over the August 2021 total of \$47.3 billion but a decrease of 3.4% compared to July 2022's \$49 billion. Such modest growth is barely noteworthy, particularly compared to news headlines oriented around bottlenecks that have affected supplies of consumer goods from cars to computers. As the industry figures indicate, this is a mature sector. We have semiconductor chips with everything, to the extent that it might be hard to see where further growth will come from. If anything, lower consumer spending in an inflation-prone global economy might be expected to dampen any growth outlook.

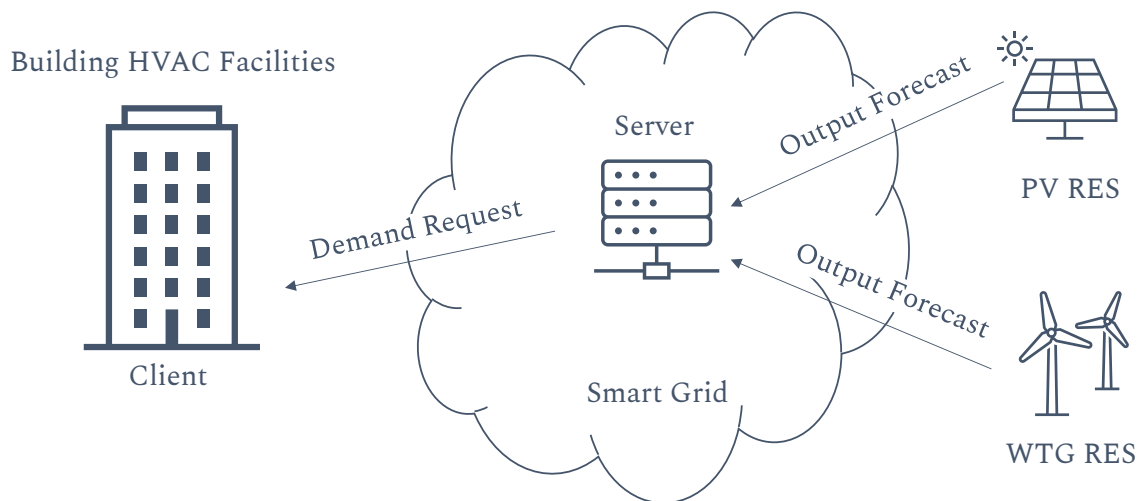
However, at Alexa Capital we believe the sector is set for superlative growth, potentially expanding by up to 8% a year to hit a trillion dollars annually by 2030. So where will this growth come from?

Digitalisation and electrification

Fundamentally, growth will be a function of the widespread digitalisation of industry, with the power and automotive sectors at the forefront. It is no secret that the energy system faces what is possibly its biggest upheaval since the invention of the steam engine.

We are transitioning away from fully dispatchable thermal power based on fossil fuels to a massively electrified energy system drawing on renewable generation sources that are only intermittently available. This requires a complete rethink of how the power grid works. Instead of simply burning fuel whenever or wherever we want, in future we will need a system that reacts intelligently to the availability of energy, using and storing power when it is available and returning it to the system or incentivising curtailed demand at other times.

What is perhaps less commonly appreciated is the role that digital technologies will play in this transformation. The only way the energy system can become flexible enough to operate in a low-carbon world is if every asset it encompasses is imbued with intelligence. Take something as simple as an air conditioning (AC) system. Traditional AC systems use single-speed motors that grind on throughout the day regardless of whether they need to go full pelt or not. This is not an issue in an environment where you get more electricity just by burning more fossil fuels. But this level of waste is not acceptable in a world where sources of power are not available all the time and you have to use every electron as efficiently as possible. That is why AC systems in Europe, China, India and elsewhere increasingly feature inverters that vary the speed of the motor according to demand.



Inverters can not only save AC energy consumption by up to 25% according to semiconductor maker Infineon, but also reduce maintenance requirements and extend the lifespan of the machines, all of which save money. And all this is thanks to the chips that give inverters a measure of intelligence. More widely, semiconductors are at the heart of the Internet of Things (IoT), a key energy transition technology trend that involves connecting sensors to inert assets so their status can be monitored and controlled by centralised systems.

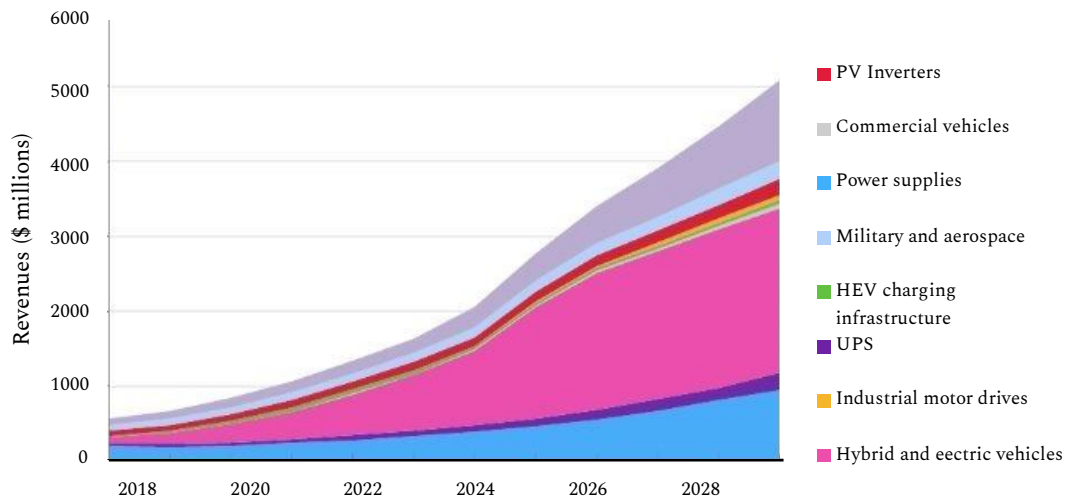
The IoT and electrified transport

The IoT has a wide range of applications, from preventing industrial equipment failures to helping monitor and control traffic flows. In the power system, it will touch almost every part of the energy transition, from enabling peer-to-peer electricity trading in solar-powered communities to tying industrial and residential assets together for virtual power plants or demand response operations.

Finally, there's the automotive sector. Cars are already packed with smart electronics, but the level of automotive intelligence is set to soar as electrification turns vehicles into a mobile extension of the electricity network. Carmakers are already using advanced semiconductor technologies to wring new levels of performance from electric vehicle batteries. This trend was sparked by a seemingly minor design change at Elon Musk's Tesla Motors in 2017.

That year, Tesla started specifying more expensive silicon carbide-based semiconductors for the traction inverters on its Model 3 sedan. This move, which came before the current semiconductor supply crisis, was hardly what you would expect of a manufacturer trying to bring an affordable electric vehicle to market. Silicon carbide (SiC) chips are so-called compound semiconductors, thus named because they rely on a combination of materials for enhanced performance. However, SiC and other compound semiconductors, such as those using gallium nitride (GaN), have traditionally been difficult and expensive to make, so their use has been restricted to high-asset-value sectors such as aerospace, R&D and the military.

Growth outlook for power semiconductors by application (SiC and GaN)



Source: Omdia

Performance Pays

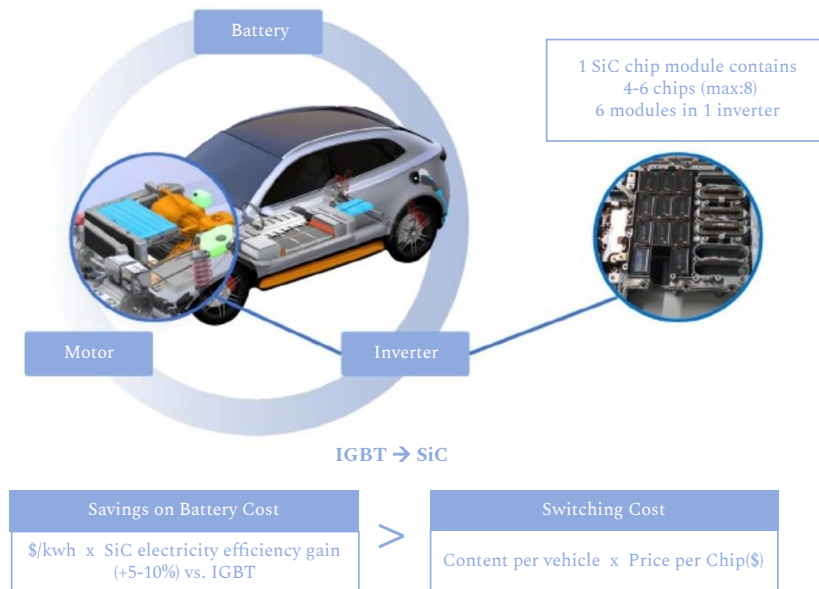
SiC power semiconductors, for example, have only half the energy loss of standard silicon-only semiconductors and are better at dissipating heat, which means the inverters needed for car batteries can be made smaller. What Tesla realised was that it was worth paying a premium for the semiconductors because of the efficiency gains they could bring to other parts of the product. Masayoshi Yamamoto, a professor at Nagoya University in Japan, told Nikkei Asia that the Model 3 has an air resistance factor as low as a sports car's, partly thanks to the use of scaled-down inverters. It did not take long for other carmakers to notice.

By 2020, the research company Omdia was predicting the GaN and SiC semiconductor markets would be worth \$1 billion within a year, mainly because of growing adoption in the automotive market. In June 2022, Goldman Sachs estimated the market for SiC alone would be worth \$11.3 billion by 2030, a more than 10-fold increase. Compared to traditional insulated-gate bipolar transistors (IGBTs), SiC chips can enable efficiency gains of up to 10% in electric vehicle battery systems. This means an electric vehicle with a 60 kilowatt-hour (kWh) battery could gain up to 6 kWh of energy by swapping from IGBTs to SiC.

This equates to up to an extra 10% mileage for a given battery size or 10% less battery for a given mileage. SiC chips also allow for 30% faster charging times because of their high voltage resistance compared to traditional, lower-cost IGBTs. And they may enable substitution of expensive nickel-manganese-cobalt lithium-ion batteries for cheaper lithium iron phosphate modules. But the

importance of compound semiconductors goes far beyond simply overcoming electric vehicle supply chain issues. The efficiency benefits these semiconductors offer also apply to other power devices. There is interest in using compound semiconductors in wind and solar inverters as well, for instance.

Improving economic viability key to triggering EV-related SiC industry growth



Source: Goldman Sachs Global Investment Research

Accelerating growth: IoT and automotive

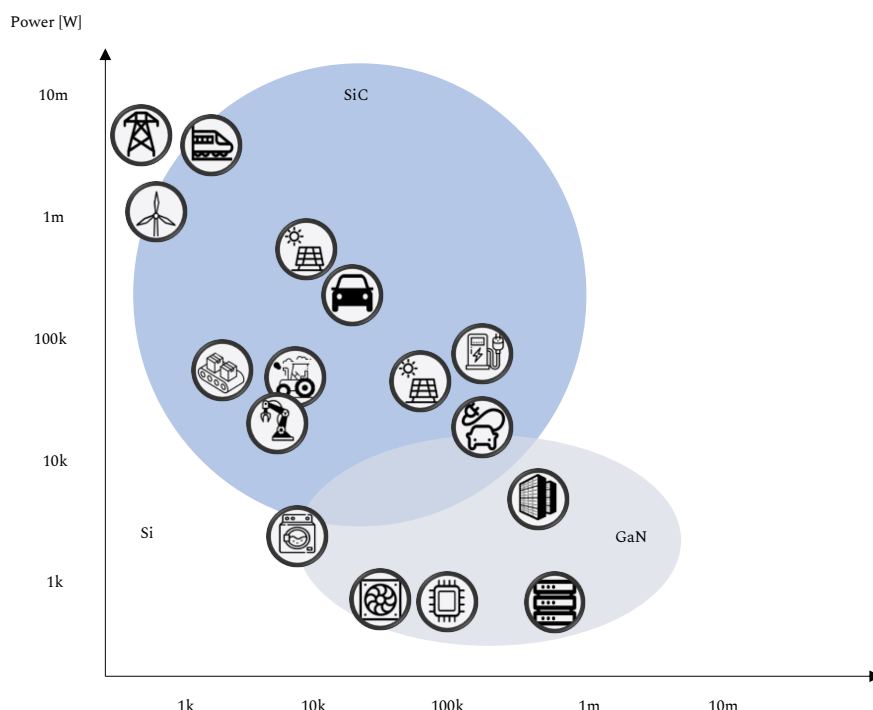
Overall, demand for compound semiconductors is set to explode as they become the standard for power applications. McKinsey & Co forecasts around 70% of predicted growth in the semiconductor market will come from just three industries. Two of these, wireless and computation, would be expected to continue growing anyway but demand is due to mushroom in the face of widespread adoption of the IoT, which could effectively turn almost any manmade thing into a tiny Internet-connected computer.

The third sector, automotive, is set to see the strongest growth of all not only because of massive demand for advanced semiconductors from the electric vehicle industry but also because these chips are more expensive than their predecessors. The average SiC content for a battery electric vehicle in 2025, at \$720, will be well over two times the \$315 cost of using IGBTs, according to Goldman Sachs. And by 2030, McKinsey & Co says the chip value of an electric drivetrain could be \$4,000, compared to \$500 for an internal combustion engine vehicle—an eightfold increase.

SiC is likely to corner the market for high-power applications, with Goldman Sachs estimating its use in battery electric vehicles could see a 31% compound annual growth rate (CAGR) between 2021 and 2030. GaN, on the other hand, seems more suited to high-frequency, low-voltage use cases such as

domestic appliances and portable devices. It is already commonly used in radio frequency (RF) technologies and is expected to dominate the electronic power supply market.

Leading power semiconductors by application (SiC and GaN)



Source: Infineon Technologies, Barclays Research

Viewed through this lens, it is clear the semiconductor industry is on the cusp of a transformation every bit as big as that ushered in with the arrival of the iPhone in 2007, which led to the emergence of the smartphone market and rising demand for gallium arsenide (GaAs) compound semiconductors. These are used in RF power amplifiers for mobile phones as well as in solar cells. The market for GaAs was worth around \$3 billion in 2007, according to data from Barclays Research and Strategy Analytics. Within a decade it had more than doubled, to around \$7.5 billion, with mobile radio and wireless infrastructure accounting for 80% of the total.

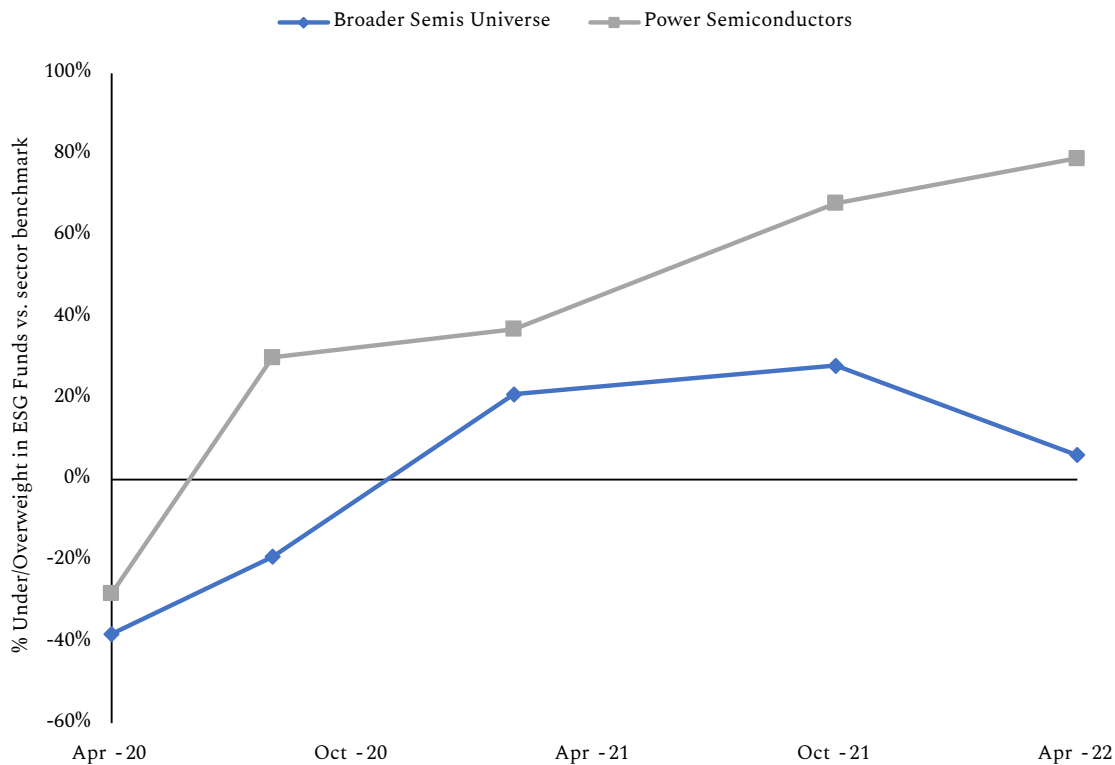
It is no exaggeration to say the opportunity for compound semiconductors in the power and electric vehicle sectors could be as large as, if not larger than, the growth created by smartphones in telecommunications.

Growth driven by sustainability

And it is not just the size of this opportunity that makes it attractive to investors. A major allure is that growth in the compound semiconductor market is as good as assured given the urgent need for global decarbonisation of the energy system. Also of note, the compound semiconductor market—unlike that for traditional chips—is dominated by players in Europe and North America.

Power semiconductors are powering growth. Since 2020, the power semis segment has been more favoured than traditional semiconductor makers in environmental, social and corporate governance-focused funds.

Profile of % under/overweight of Power Semis and the Broader Semis universe over time



Source: Morningstar, Thomson Reuters, Goldman Sachs Global Investment Research

Semiconductor companies are rushing to install manufacturing capacity in preparation for mounting orders. German semiconductor manufacturer Infineon Technologies, for example, in October opened a new factory in Cegléd, Hungary, dedicated to the assembly and testing of high-power semiconductor modules to drive the electrification of vehicles.

In addition, Infineon has invested in further production capacities for high-power modules that enable green energy, from wind turbines and solar panels to energy-efficient drives. Also in October, Geneva-headquartered STMicroelectronics unveiled plans to build an integrated SiC substrate manufacturing facility in Italy, with production expected to start in 2023. This will support increasing demand from customers across automotive and industrial applications.

Meanwhile, Nasdaq-listed OnSemi announced the opening of a new design centre for state-of-the-art semiconductor chips in Bucharest, Romania. And in September, Durham, US-based Wolfspeed

announced it will build a new multi-billion-dollar materials manufacturing facility in Chatham County, North Carolina, giving it a 10-fold increase in SiC production capacity.

There is also a rapidly growing ecosystem of design, test, assembly and fabrication capacity providers that supports the integration of electronics into our electrifying power system. Value chains are moving to diversify from the major manufacturing facilities in Taiwan and China and into advanced fabrication centres in North America and Europe, following the trends being seen in Li-ion batteries, photovoltaic solar and electric vehicles.

Supporting strategic and institutional capital flows

At Alexa Capital we see the scaling up of power semiconductors as leading to a step change in clean technology adoption, creating vast opportunities for the deployment of capital not just in the semiconductor companies themselves but also throughout the semis ecosystem.

To maximise the value we can offer to clients in this area, in September we added a new semiconductor-focused team to our practice. The team, all previously executives at Apple chipmaker Dialog Semiconductor, comprises Mark Tyndall and Alex McCann, who are focusing on cross-border mergers, acquisitions and capital advisory services, and Dr. Jalal Bagherli, who joined as advisor to the Alexa Capital Insights Council. The team is already busy—and the rush has barely started.

An aerial photograph of a lush, green forest. A dark, winding river flows through the landscape, creating a meandering path. The forest is dense and vibrant green, with some areas appearing slightly more saturated than others. The river's path is irregular, with several sharp turns and bends. The overall scene is a natural, undisturbed landscape.

SECTOR TRADING ANALYSIS

SEMICONDUCTORS

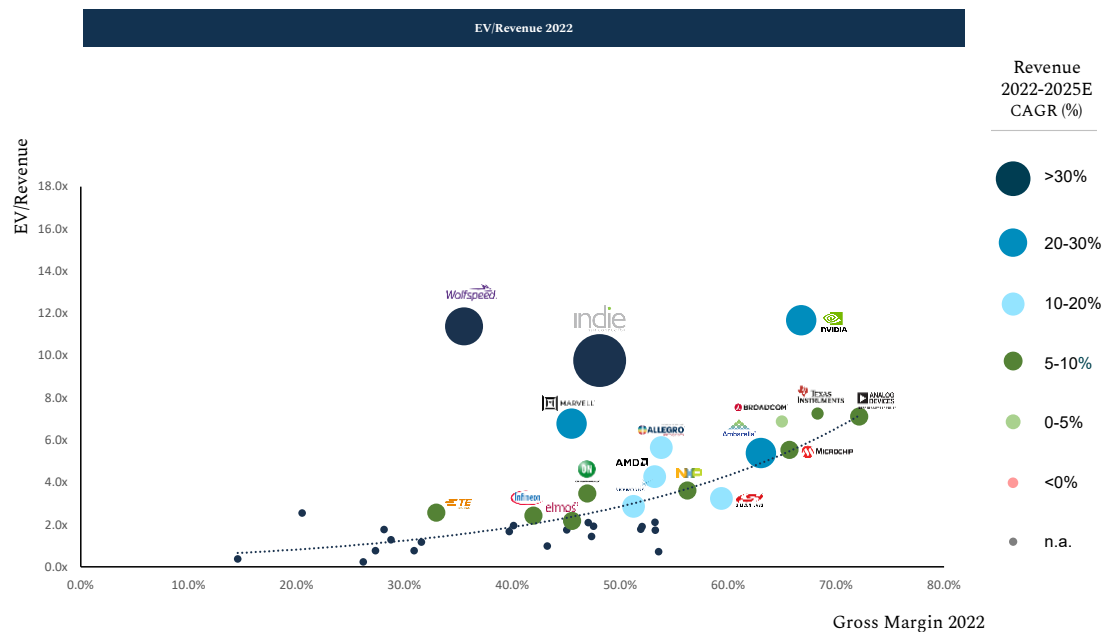
Company	Price Current	Weekly % Change	YTD Price % Change	Market Cap	Enterprise Value	Revenue 2021	EBITDA 2021	EV/Revenue			EV/EBITDA			P/E		
								2021	2022E	2023E	2021	2022E	2023E	2021	2022E	2023E
Equipment & Materials																
ASML	€476.80	1%	-31%	195,354	195,491	16,339	5,060	12.0x	9.1x	9.4x	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 7th November 2022.

N/A: Not Applicable

Source: Bloomberg as of 7th November 2022

SEMICONDUCTORS (cont'd)



Source: Bloomberg

SOLAR

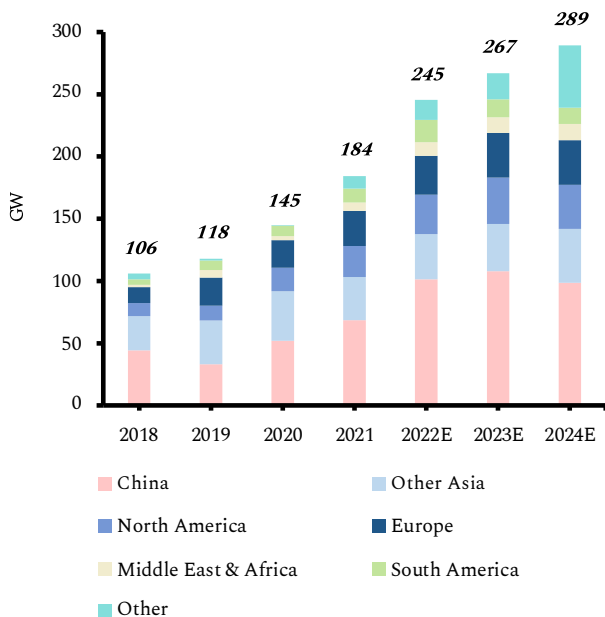
Company	Price Current	Weekly % Change	YTD Price % Change	Market Cap	Enterprise Value	Revenue 2021	EBITDA 2021	EV/Revenue 2021	EV/Revenue 2022E	EV/Revenue 2023E	EV/EBITDA 2021	EV/EBITDA 2022E	EV/EBITDA 2023E	P/E 2021	P/E 2022E	P/E 2023E
Solar Downstream																
Sunrun	\$21.90	13%	-38%	4,645	13,526	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	P1.19	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.	59.5x
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 7th November 2022.

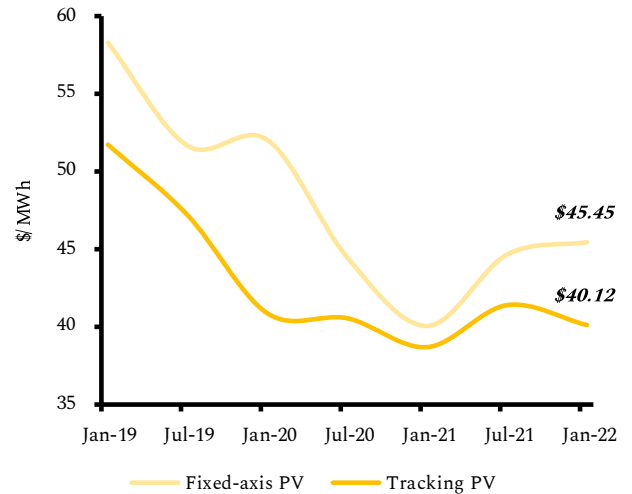
N/A: Not Applicable

Source: Bloomberg as of 7th November 2020

Global annual installations by region



LCOE



WIND

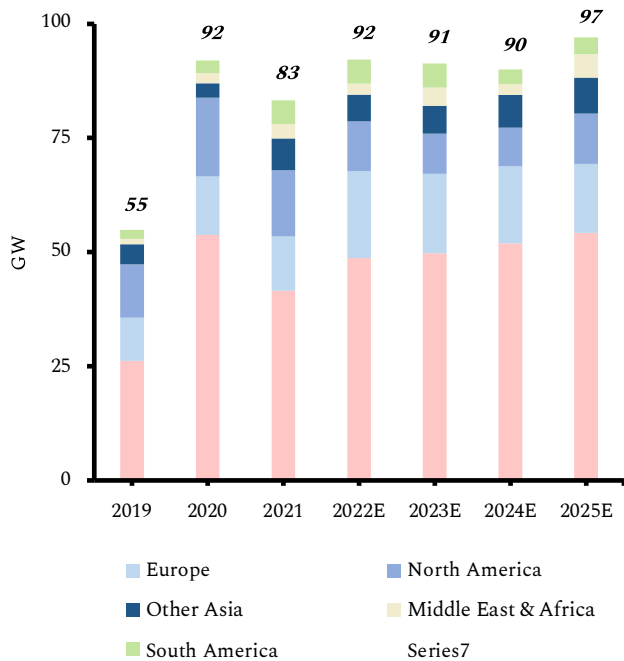
Company	Price	Weekly	YTD Price	Market	Enterprise	Revenue	EBITDA	EV/Revenue			EV/EBITDA			P/E		
	Current	% Change	% Change	Cap	Value	2021	2021	2021	2022E	2023E	2021	2022E	2023E	2021	2022E	2023E
Wind Downstream																
Energiekontor	€89.60	8%	30%	1,295	1,624	185	97	8.8x	8.6x	6.1x	16.8x	17.0x	14.4x	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 7th November 2022.

N/A: Not Applicable.

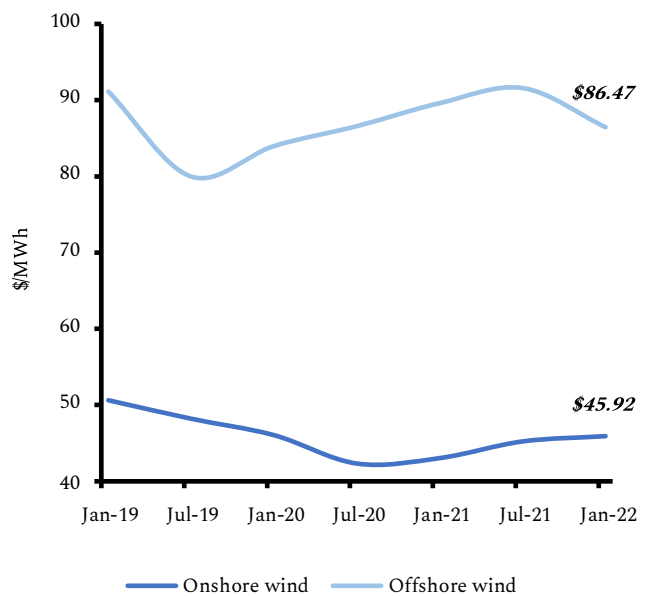
Source: Bloomberg as of the 7th November 2022

Global onshore wind installations by region



Source: Bloomberg.

LCOE



ENERGY STORAGE

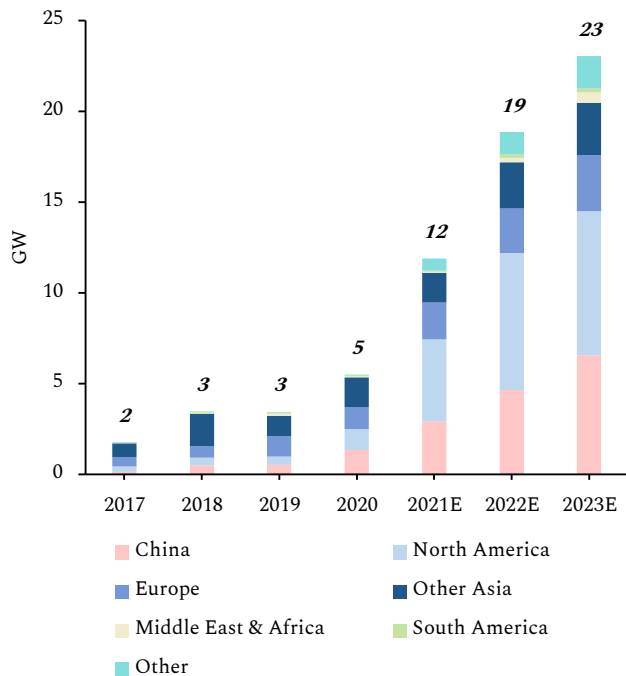
Company	Price Current	Weekly % Change	YTD Price % Change	Market Cap	Enterprise Value	Revenue 2021	EBITDA 2021	EV/Revenue 2021	2022E	2023E	EV/EBITDA 2021	2022E	2023E	P/E 2021	2022E	2023E
Storage																
Tesla	\$198.53	8%	-43%	721,610	707,650	53,823	10,061	13.1x	8.5x	6.1x	70.3x	36.2x	25.6x	n.a.	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

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 7th November 2022.

N/A: Not Applicable.

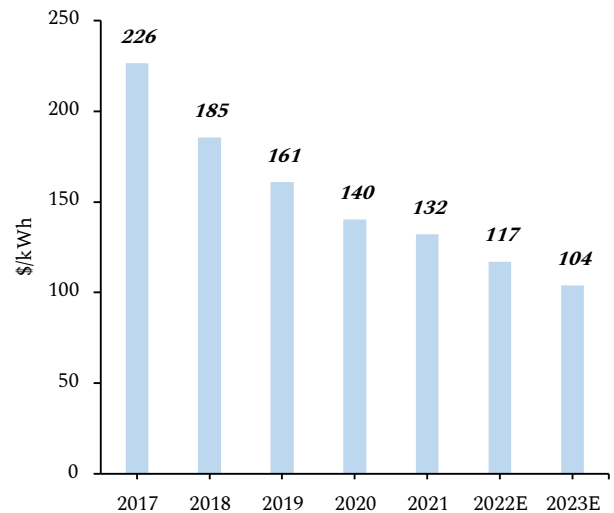
Source: Bloomberg as of the 7th November 2022.

Global annual energy storage installations



Source: Bloomberg.

Battery pack prices



HYDROGEN & FUEL CELLS

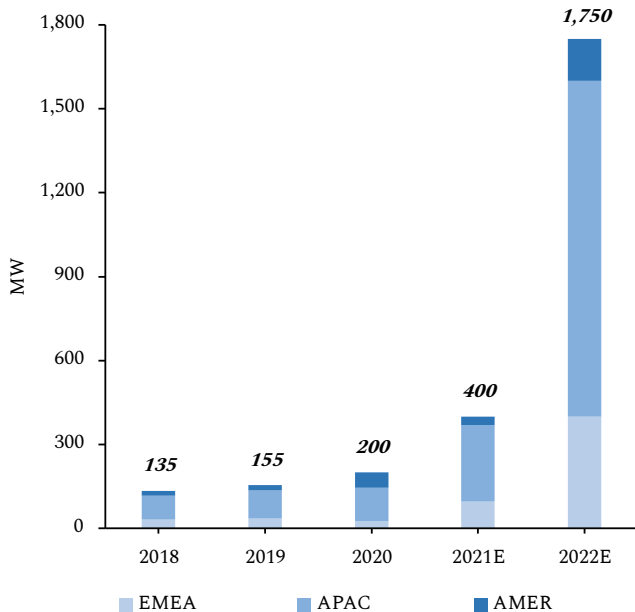
Company	Price Current	Weekly % Change	YTD Price % Change	Market Cap	Enterprise Value	Revenue 2021	EBITDA 2021	EV/Revenue 2021	2022E	2023E	EV/EBITDA 2021	2022E	2023E	P/E 2021	2022E	2023E
Power Generation - Fuel Cells																
Plug Power	\$14.72	2%	-44%	9,311	6,895	502	-375	13.7x	8.1x	4.9x	n.a.	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								11.3x	7.6x	4.4x	15.8x	42.2x	31.4x	11.4x	4.0x	54.2x
Average								16.0x	14.2x	6.2x	15.8x	43.1x	30.2x	11.4x	4.0x	44.0x
Hydrogen																
Haffner 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								52.3x	0.6x	7.0x	n.a.	n.a.	15.4x	1.5x	n.a.	n.a.
Average								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 7th November 2022.

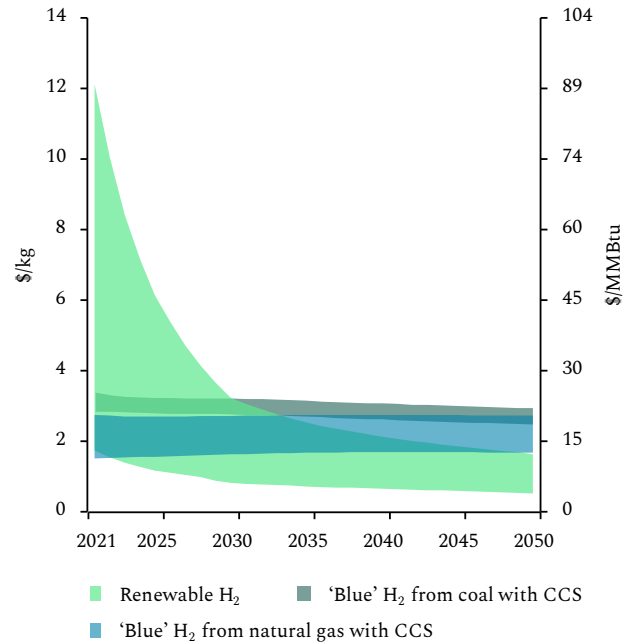
N/A: Not Applicable.

Source: Bloomberg as of the 7th November 2022.

Annual electrolyser shipments



Source: Bloomberg.

Global range of 'green' and 'blue' LCOH₂

MOBILITY

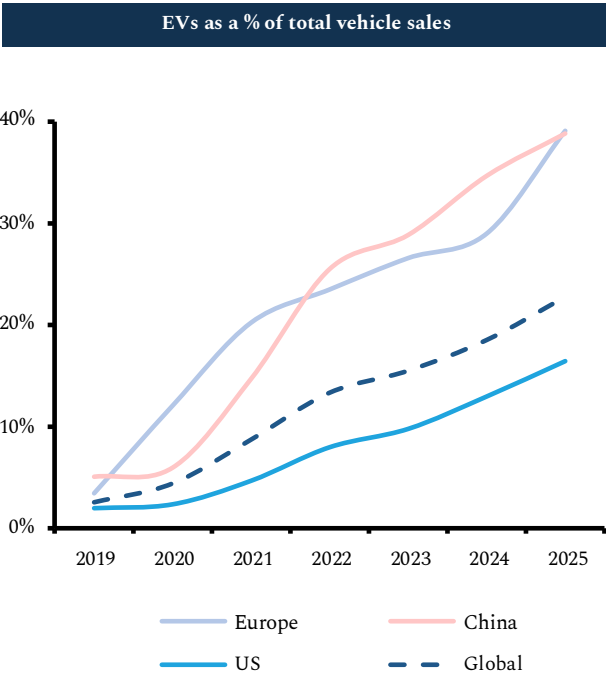
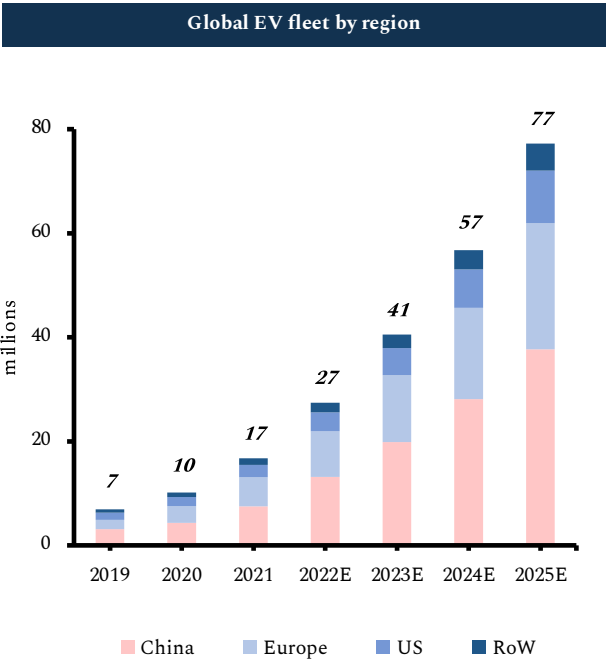
Company	Price Current	Weekly % Change	YTD Price % Change	Market Cap	Enterprise Value	Revenue 2021	EBITDA 2021	EV/Revenue			EV/EBITDA			P/E		
								2021	2022E	2023E	2021	2022E	2023E	2021	2022E	2023E
EV Manufacturers																
Tesla	\$198.58	8%	-43%	721,610	707,650	53,823	10,061	13.1x	8.5x	6.1x	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 7th November 2022.

N/A: Not Applicable.

Source: Bloomberg as of the 7th November 2022

MOBILITY (cont'd)



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
PGE	5.65 zł	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

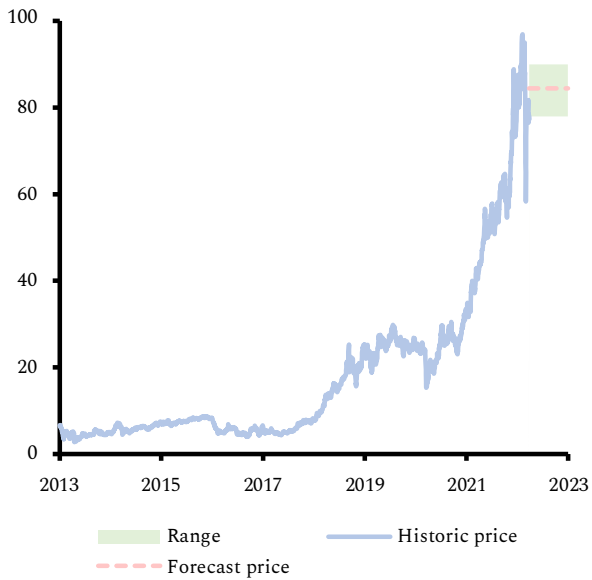
Figures in dollars millions except for share price; actuals are converted using FX rate as of the relevant fiscal year-end, estimates using the latest FX rate as of 7th of November 2022.

N/A: Not Applicable.

Source: Bloomberg as of the 7th of November 2022

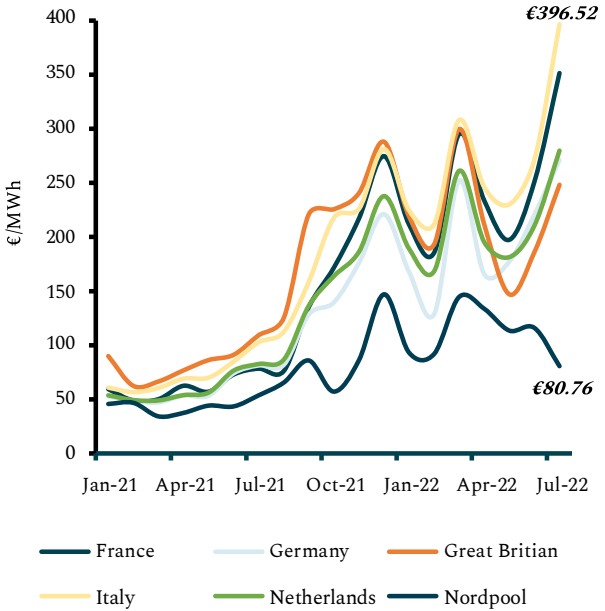
EUROPEAN UTILITIES (cont'd)

EU ETS carbon price outlook



Source: Bloomberg

Monthly electricity prices in Europe



NORTH AMERICAN UTILITIES

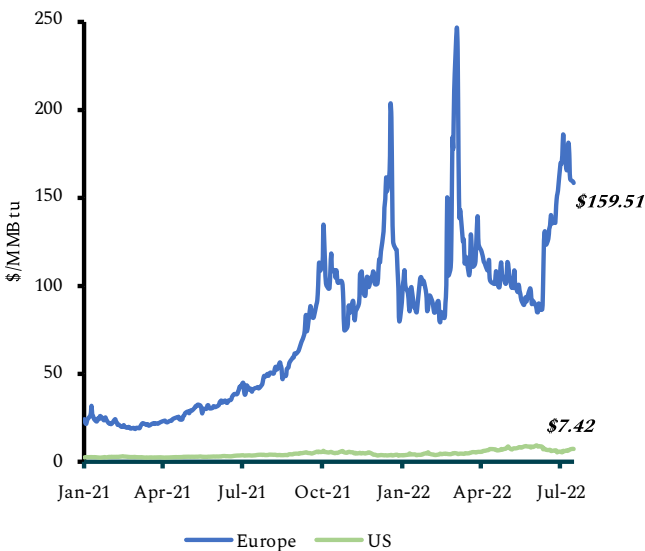
Company	Price Current	Weekly % Change	YTD Price % Change	Market Cap	Enterprise Value	Revenue 2021	EBITDA 2021	EV/Revenue 2021	EV/Revenue 2022E	EV/Revenue 2023E	EV/EBITDA 2021	EV/EBITDA 2022E	EV/EBITDA 2023E	P/E 2021	P/E 2022E	P/E 2023E
North American Utilities																
Nextera Energy	\$79.03	8%	-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	C\$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	C\$52.97	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	C\$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	C\$51.51	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	C\$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 7th of November 2022.

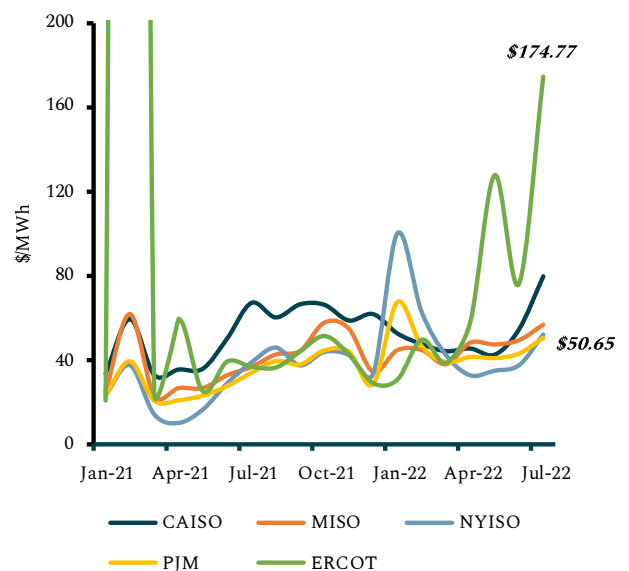
N/A: Not Applicable.

Source: Bloomberg as of the 7th of November 2022.

Monthly gas prices in the US and Europe



Monthly electricity prices in the US



Source: Bloomberg

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 7th of November 2022.

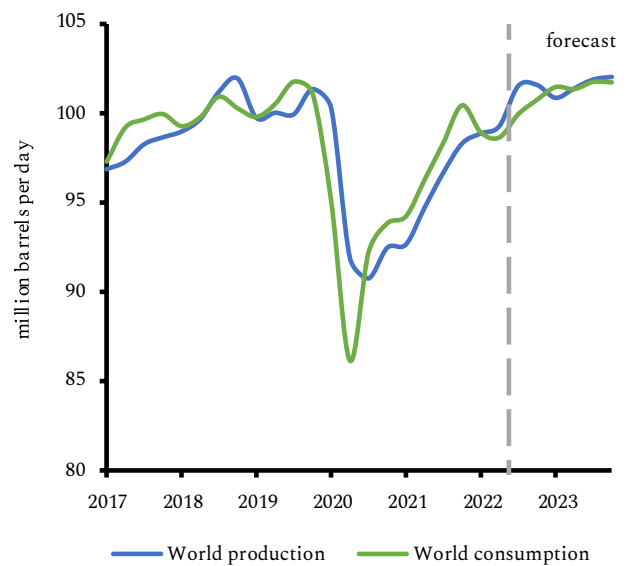
N/A: Not Applicable.

Source: Bloomberg as of the 7th of November 2022

West Texas Intermediate Crude Oil Price



Daily global crude oil demand



Source: Bloomberg

An aerial photograph of a lush green forest on the left, transitioning into a body of water on the right. The forest is dense with various shades of green, and the water is a deep blue. The text "SELECTED M&A" is centered over the image.

SELECTED M&A

SELECTED M&A TRANSACTIONS

Date	Target	Country	Valuation (\$m)	Solution	Acquirers
Semiconductors					
28 Jul	Universal Instruments	US	89	Semiconductors	Delta International Holding
15 Aug	GeneSiC Semiconductor	US	246	SiC	Navitas Semiconductor
18 Aug	Flusso	UK	34	Production	
10 Oct	PTSL	UK	30	Testing	Tikehau Capital
Renewables					
18 Aug	RavenVolt	US	450	Microgrid	ABM Industries
25 Aug	Exagen	UK	42	Solar Developer	Octopus Energy
29 Sep	Tri Global Energy	US	270	Wind Developer	Enbridge
29 Sep	Standard Solar	US	540	Solar	Brookfield Renewable Partners
11 Oct	Atlas Renewable Energy	Chile	2000	IPP	Global Infrastructure Partners
Mobility					
03 Aug	Rhombus Energy Solutions	US	185	EV Charging	BorgWarner
20 Sep	Electric Last Mile Solutions	US	240	Last Mile	Mullen Automotive
Energy Storage & Fuel Cells					
16 Aug	Akaysha Energy	Australia	692	Energy Storage	BlackRock
25 Aug	Moixa	UK	n.a.	Energy Storage	Lunar Energy
15 Sep	Amprius	US	800	Energy Storage	Kensington Capital Acquisition IV
11 Oct	Dragonfly Energy	US	500	Energy Storage	Chardan NexTech Acquisition 2
14 Oct	Romeo Power	US	144	Energy Storage	Nikola

Source: Bloomberg