

THE MONTHLY DOSE OF CLIMATE SOLUTIONS

MAY 2023



NVIDIA Corporation

385.10 USD

+241.95 (169.02%) ↑ year to date

5D

1M

6M

YTD

Max



THE PARADOX OF AI & DECARBONIZATION

Transformational trends of our generation are being treated unequally. Investors are focusing on mega tech names and looking the other way when it comes to decarbonization.

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GREEN IS GETTING TOO CHEAP TO IGNORE

Green growth has not been immune to the macro turmoil but it may not suffer an earnings recession.

The debt ceiling crisis kept markets on the edge:

May was all about another US crisis. On 18th May, President Biden returned early from a G7 meeting in Japan and Kevin McCarthy, the US House Speaker, finally said that achieving a debt ceiling deal further in the week would be doable. However, it was only ten days later, on 28th May that President Biden and the Speaker reached an agreement in principle to raise the US debt ceiling. A key point to the agreement is that spending levels remain unchanged in 2024 and are limited to 1% growth in 2025, effectively pushing the issue beyond the US presidential election in November 2024. Last Friday's US jobs report gave investors hope that a soft landing is possible and likely, and June started with gains on the S&P500, Nasdaq, and Dow Jones. In Asia, a potential Chinese stimulus package for real estate could help support more economic growth in the region. OPEC met on June 4th in Vienna and Saudi Arabia announced it would cut supply from 10mm bpd to 9mm bpd in July. Brent closed the month at ca. \$76/barrel.

Investors are excited about mega tech names delivering the usually incompatible promise of solid short term cash flows combined with large growth prospects. Nvidia passes 100% appreciation YTD and reaches the \$1 trillion market cap level:

Nvidia shares shot up 26% on stronger than expected quarterly results. However, it was CEO Jensen Huang's comments on expected sales for the current quarter at \$11 billion, more than 50% above Wall Street's consensus estimate, that excited investors on the growth prospects for Nvidia's GPU products as the key "pick and shovel" play in Generative AI. At the end of the month, the market cap of Nvidia passed the enviable \$1 trillion valuation, plus Apple, Microsoft and Alphabet added over \$6 trillion. These four companies alone have a current market capitalization that is more than twice the sum of the equity value of the 166 names in the iClima Global Decarbonization Enablers Index, now with a market capitalization of ca. \$2.7 trillion. This is an irrefutable sign of massive concentration due to investors placing confidence in only a handful of mega tech names. Investors seem

to have found a winning combination. On one hand, large tech names benefit from solid current free cash flow generation (with not much growth in all cases but Nvidia's), balance sheets that are robust, and extremely low risk in these names not weathering the macroeconomic turmoil. On the other hand, Generative AI represents long term growth opportunities, and investors find it is easier to bet on growth taking place within *megacap* companies that are also seen as quality/value names. Although predicting the size of the Generative AI market by 2030 seems like a debatable exercise, figures quoted by many analysts are in the \$1 trillion level. A report by Precedence Research estimates that by the end of the decade the global AI market will reach \$1.6 trillion, growing at a CAGR of 38%. It seems a huge disconnect that investors are rewarding growth prospects for technology and ignoring the market for decarbonization, which is **already** way above \$1 trillion.

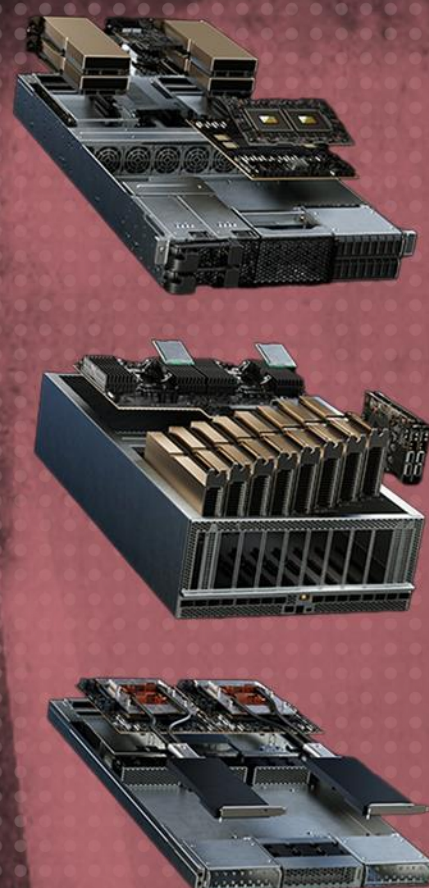
The acceleration of the energy transition is here. BNEF estimated that in 2022 global investments into energy transition added up to **\$1.1 trillion**. The International Energy Agency at the end of May published its World Energy Investments 2023, estimating that global investments into clean energy will reach **\$1.7 trillion this year**. The solutions include renewable energy, EVs, clean energy storage, low-emission fuels, efficiency improvements and heat pumps. Also, important to note is that 2023 will mark the year when investments into solar energy alone for the first time will surpass the investment flow into fossil fuel. US investors are discounting the green growth prospects as they also saw extraordinary cash flow generated by "brown value" names. The energy transition in the US is real, and the IRA is an additional catalyst. Goldman Sachs' "*Carbonomics*" analyst, in a report published in April, claims that the US is poised for "an energy revolution." The IRA, which will provide ca. \$1.2 trillion of incentives by 2032, is a solid foundation for this US growth to be multiplied by other sources of funding. Goldman estimates that the IRA's impact could encourage \$11 trillion of green investments by 2050. By 2032, the research estimates that there will be ca. \$3 trillion of cumulative investment opportunity into different solutions. This equates to, on average, \$290 billion of

investments per year. As a reference, the author points out that "over the coming decade this would represent more than two times the total investment in the U.S. shale revolution."

The chances of a green rally in the second half of the year are considerable:

In January, when it looked like US inflation was showing signs of waning (before Silicon Valley Bank collapsed and US regional bank troubles posed another macro risk), markets interpreted the favourable data as a potential end to US Fed hawkishness. Combined with China re-opening, potentially boosting global economic growth, oversold names had a strong share performance in the first month of the year. Our iClima Global Decarbonization Enablers Index was up ca. 12% in the month. Rather than a broad market rally, we saw fast appreciation in specific names that had been oversold. Tesla for example was up almost 41% in January, Wallbox was up 56%, and Proterra was up 35%.

In the second half of the year, it will become clear if the US economy is or is not entering a recession. While a recession is never good for equity, a slower US economy will likely mean the taming of inflation and the US Fed may pause hikes or even be forced to lower interest rates. The reduction of long-term rates and the end of the inversion of the yield curve would benefit growth shares that have been so out of favour. That macro scenario could promote a broader growth rally, also benefiting green names. Another scenario is that inflation figures in the US do not improve, and the Fed continues to signal monetary austerity. In that case, markets will fear a more profound deterioration of economic activity that a prolonged period of higher interest rates would generate. While that scenario does not alleviate pressure on growth names, we expect the companies in our universe that directly benefit from the Inflation Reduction Act to start to show how IRA induced growth is benefiting both their top line and margins. Investors could then decouple broad growth stories from green growth, and in that case, we could also see an end of year green rally.



Nvidia Co-founder, president and CEO, Jensen Huang and the company's new modular MGX platform for AI computing



Ten solid names leading the energy transition and decarbonization strategies, trading at steep discounts:

There is a long list of listed companies with proven technologies, solid capital structure, capable management, hypergrowth (defined as top line annual growth of over 40%) and a clear path to profitability that are facing dramatic drawdowns as investors fail to discriminate between growth and green growth.

Out of ten names that we see in this category, eight are US based or US centric and two are Chinese. Tesla (TSLA), BYD (1211.HK), CATL (300750.HK), Proterra (PTRA), Wallbox (WBX), Plug Power (PLUG), Bloom Energy (BE), Enphase ENPH), Stem (STEM) and Fluence Energy (FLNC) are ten companies that are solving some of our biggest environmental issues, from the electrification of transportation to smart charging of EVs to solving renewable energy intermittency with distributed long duration energy storage. The technologies employed by these companies are proven, are potentially deflationary as they benefit from scale and learning curves and are supported in the US by the IRA and therefore benefit from increasing adoption by end users. Yet in the past year markets have penalized these companies as if we were not accelerating the energy transition. Investors with a five-year horizon can put in strategic allocation to these key holdings as part of a core strategy in a decarbonization themed portfolio. A deeper look into five names gives a flavour in terms of the size of the respective addressable markets as well as the growth and moat around their operations.

TESLA

Tesla (TSLA, currently at ca \$193, 52-week range between \$101.8 and \$314.7) at a market cap of \$610 billion trades at a TTM P/E of 54.4x and a TTM P/S of 6.2, while Nvidia trades at TTM P/E of 218s and TTM P/S of 35.3. Tesla is not only electrifying transportation and expanding in the clean energy storage space, but it is also the company most likely to bring autonomous driving to markets. Based on AI, this will disrupt and redesign transportation as robo-taxis become a sustainable and more cost-effective way for individual and family transportation.

BYD

BYD (1211.HK, current price at HKD \$232.4, 52-week range between \$161.7 and \$333) The Chinese EV leader has been in the headlines for its aggressive pricing strategy, having recently cut by 10% the price of its best-selling Sedan model that competes directly with Tesla’s Model 3 in the Chinese market (and is now 18% below its price). The company’s multiple models strategy also includes a sub US\$11,000 EV, the Seagull electric hatchback, at half the price of the next most affordable Chinese new energy vehicle. BYD is poised to keep its market dominance in the Chinese market but is also already in a global expansion to markets such as the UK, Norway, Brazil, Singapore, Australia, Germany and Japan. Some analysts expect the company to be selling 3 million EV units by 2025, even though the company is still defining its strategy for the US market.

stem

Stem Inc (STEM, currently \$4.93 with 52-week range between \$3.7 and \$18.0) The AI based clean energy storage as a service company reported revenues a bit stronger than consensus, but net loss worse than expected. In 1Q23 top line revenue grew to \$67.4 million, a 63% growth over the \$41.1 million reported in 1Q22. Contracted backlog more than doubled over 1Q22, with \$364 million in bookings. At a current market capitalization of around \$647 million, Stem is trading at a TTM P/S of 1.9x. Morgan Stanley’s analyst has a price target 100% above current price. The addition of utility scale and behind the meter renewable energy sources to the US grid increases the need for management, optimization and monetization of multiple sources of clean energy storage. Stem is extremely well positioned to capture the growth opportunities in US energy storage.

ENPHASE

Enphase Energy Inc (ENPH, currently \$165.2, 52-week range between \$152 and 340) The world’s leading supplier of microinverters for solar and battery systems brought the solar segment down in April when it announced its 1Q23 results. Although in the last quarter revenue of \$726 million was a

64.5% increase over the \$441.3 million reported in 1Q22, sales in the US disappointed. While revenue in Europe grew 25% in 1Q23 over 4Q22, US sales in the same period were down by 9%. Beyond CA, management pointed out that sell-through dropped by 25% in 1Q23 over 4Q22, with the biggest drops seen in the states with the lowest utility rates (Texas, Florida and Arizona). The US represents 65% of top line revenue, with rest of the world at 35%. Management confirmed that starting in 2Q23, they will be adding manufacturing capacity in the USA in line with IRA incentives, bringing Enphase’s global quarterly capacity to more than 10 million microinverters by year end.

CATL

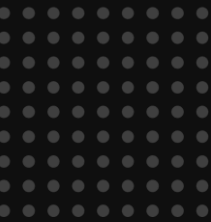
Contemporary Amperex Technology, CATL (300750.SHE, currently CNY220.8, 52-week range between CNY198.1 and 319.4) The company is not part of the CLMA universe as

the index does not include mainland China only listed companies) The Chinese battery player is the largest manufacturer of lithium-ion batteries for EVs and energy storage systems in the world with a market share of ca. 34%. CATL recently reported 1Q23 results, with revenues up 83% year-over-year. Known for leadership in LFP chemistry, the company this year will start producing its sodium-ion batteries with Chinese Cherry Automobile being the first EV maker to use it. In the year CATL’s shares are behind the performance of its competitors LG Energy Solution, BYD and CALB.

While it is of course impossible to predict how the macro environment will evolve until the end of the year, when there is a material discrepancy between fundamentals and valuation levels, investors at some point will realize the mispricing and see that green growth is too cheap to ignore.

Performance of the iClima indices in May 2023

	CLMA	DGEN	ADPT	BIDGEN	ERLY	LDES	LESS	S&P 500	NASDAQ Composite	Dow Jones Industrial Average
Jan	12.07%	15.55%	9.08%	12.64%	25.21%	16.02%	15.80%	6.18%	10.68%	2.83%
Feb	-3.81%	-4.80%	-0.22%	-3.08%	-11.25%	-5.58%	-5.50%	-5.50%	-5.50%	-5.50%
March	0.52%	-1.13%	-0.43%	2.21%	-11.91%	-0.87%	-3.60%	-3.60%	-3.60%	-3.60%
April	-3.72%	-7.46%	0.23%	-4.93%	-15.70%	-5.96%	-2.77%	1.46%	0.04%	2.48%
May	-1.70%	1.58%	-1.78%	0.55%	7.36%	-1.81%	-3.59%	0.25%	5.80%	-3.48%
YTD	2.57%	2.24%	6.69%	6.67%	-11.41%	0.28%	-1.11%	8.86%	23.59%	-0.71%



DECARBONIZATION DEVELOPMENTS IN MAY

Ford's CEO announces the company is going to scale back future investments in China. It is evidence of the struggle of ICE makers to compete in more advanced EV markets:

Evidence that laggard ICE makers are unlikely to compete with the Chinese EV names that have been leading the space in the largest EV market on the planet. In its 1Q23 results call, CEO Jim Farley announced that Ford would reduce its investments in the country, as it has struggled to gain market share competing with local pure player EVs. Ford now reports results across three businesses: Ford Blue (ICE) sold 706k units in the quarter, sales of \$25.1 billion and a ca. 10% EBIT margin, while Ford Model e (EVs) sold 12k units, booked sales of \$0.7 billion and a negative EBITDA equal to its revenue (a loss of ca. \$0.7 billion), while Ford Pro (commercial products & services) sold 337k units (that also include EVs), booked revenue of \$13.2 billion and an EBIT margin of also ca. 10%. Ford's target EV production is 600k units by end of 2023 and more than 2 million by 2026. In contrast, Analysts' consensus is that Tesla would sell 1.8 million units in 2023.

Ford also announced a collaboration with Tesla to solve the issue of charging network:

Jim Farley, Ford's CEO, also announced in May that the company reached an agreement with Tesla that will provide Ford EV owners with access to the over 12,000 Tesla Superchargers across North America, doubling the number of fast-chargers available to Ford EV customers starting Spring 2024. The RBC analyst commented that "we believe the move will ultimately increase BEV penetration in North America, and in a rising-tide-lifts-all-boats rationale, increase Tesla sales." Shares of both Tesla and Ford went up ca. 7% after the announcement.

The World Meteorological Organization just gave a 66% that global temperatures will rise by more than 1.5° C above

pre-industrial levels for at least one of the next five years:

The incoming El Niño exacerbates the effects of global warming and demonstrate how we are running out of time. A challenging macroeconomic environment and high fossil fuel prices are posing headwinds to green names. Funding for project finance is more expensive, households are struggling to afford higher financing costs for EV purchases and solar panels. On the other hand, oil & gas majors seeing potential for higher profits are reversing strategies. British Petroleum went from "Beyond Petroleum" to "Back to Petroleum." We have no time to waste, but unfortunately, we will need to wait for the macroeconomic storm in the form of inflation and interest rate hikes to pass until we have more benign conditions. At that point, climate change mitigation will not be the only pressing need, as climate change adaption too will be a must.

Biden launches a plan to fix the US transmission system:

On 10th May, the Biden Administration proposed to Congress the approval of a bipartisan permitting reform legislation. The main goals are to accelerate the deployment of key electric transmission, expedite the permitting of over 25 GW of renewable energy to be built in Federal lands, modernize America's old mining laws that govern the

development of national critical green minerals, expand legislation that covers oil & gas pipelines to include hydrogen and CO2 storage, and incentivize the repurposing (also called "brightfield") of contaminated sites into clean energy facilities. All of the above can be achieved with improved permitting processes.

California may elevate Vehicles to Grid ("V2G") as a clean energy storage solution:

Despite a few months ago changing the net energy metering rules to the detriment of solar only installations, California is again at the forefront of decarbonizing efforts. A bill (SB 233) being discussed by California legislators proposes that all new EVs sold in California be bidirectional starting in 2027, therefore ready for V2G, V2H and V2X applications. The bill sponsor said "EVs are energy storage on wheels. Why waste that battery, given how few miles most people use the vehicle in any given day?" A 60 kWh EV battery has enough electricity to be effectively a backup power source to an average household for two to three days. California's EVs will have 60,000 MW of stored energy in batteries by 2030,

which the bill sponsors want to make sure can be used to the benefit of the grid. The bill has passed the state's Senate Energy Committee.

Spain for nine hours achieves a 100% renewable electricity:

On May 16th, the generation of electricity from green renewable sources provided the mainland Spanish grid with more than 100% of its demand for nine hours. From 10 AM to 7 PM the Spanish grid reached the record level, as reported by Red Elctrica de Espana. Solar rooftops are showing a two-fold impact by adding supply when inserting their surpluses into the grid and by reducing demand when there are favourable weather conditions. That day coincided with inactivity of three out of the seven Spanish nuclear power plants.

Tesla's Model Y becomes the world's top selling car model:

In 2022, Tesla Model Y was the third most popular car sold globally, with 747,500 units delivered (which was up 91% over 2021). In 1Q23, Tesla Model Y became the top selling model on the planet, with 267,200 units being sold (a figure 69% above 1Q22). That was above the previously most popular, the Toyota Corolla (256,400 units sold) that saw sales drop by 29% in China and 10% in the US.



The Tesla Model Y

MORE 1Q23 RESULTS

May was a month of mixed performance across the 166 names in CLMA. A few names that are significantly oversold were the target of investor interest. Stem (STEM) was up 26% in the month, Fluence Energy (FLNC) was up 35.6%, Li Auto (LI) was up 24%, Tesla (TSLA) was up 22% and Wallbox (WBX) was also up

22%. The most noticeable declines were EVGo (EVGO) down 33.4%, and plant-based food names Oatly (OTLY) down 29.2% and Beyond Meat (BYND) down 23.9%. Some additional insights on further 1Q23 results are highlighted below.



Plug Power (PLUG, down 7.86% in May, down 32.74% YTD)

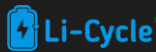
The NY based hydrogen player has never posted a profit in its over quarter of a century of operations. First incorporated back in 1997, the company has an accumulated deficit of \$3.3 billion and paid in capital of ca. \$7.4 billion. Current CEO Andrew Marsh joined the company in 2008 as CFO and became CEO the following year. A devoted believer in the relevance of hydrogen as a solution, he sees the IRA as a watershed moment for US hydrogen. Plug is vertically integrating all the solutions along the H2 chain, from manufacturing electrolyzers and fuel cells, to producing green H2 and distributing the gas for stationary and mobile operations. In 1Q23 it posted revenues of \$210 million, representing 49% YoY growth and an equal operating loss of \$210 million. Mr Marsh emphasizes that Plug is in a privileged position to capitalise on what he sees as a \$10 trillion addressable market by 2050. On the electrolyser pipeline, the company is focusing on their containerized 1 to 5 MW solution with 2 GW of backlog currently as well as on larger projects representing another 1 GW of orders. In 2023 the company needs to deliver on the H2 plants in Georgia, Louisiana, NY, and Texas, while working on the path to profitability and an ambitious Capex program that will require additional sources of capital. Despite the risks in executing on all the above, the aggressive growth is an investment opportunity given Plug's current market cap of ca. \$5 billion, equating to \$8/share, which is a fraction of its peak valuation in January 2021 when it got close to \$64/share.



Proterra (PTRA, down 8.55% in May, down 71.62% YTD)

The maker of electric buses and batteries posted 1Q23 results in line with full year guidance. Revenue reached \$80 million, representing 36% YoY growth, with both business segments growing. The Proterra Powered & Energy segment represented ca 44% of total revenue (top line growing 49% over 1Q22) while Proterra Transit revenue represented 56% (top line 27% above that of 1Q22). Management reiterated the full-year 2023 target of revenue between \$450 million to \$500 million, a potential growth rate of between 45% to 61% over 2022. The company expects positive gross margins to be reported in the second half of 2023. Proterra benefits from the US EPA Clean School Bus program, as well as the IRA. The first quarter of this year was the first period recognizing the IRA battery production credit of \$35/kWh of battery produced within the US. Proterra produced 89 MWh of batteries in 1Q23 equating to a \$3.1 million benefit.

Proterra S series batteries already power medium and heavy-duty transit vehicles



Li-Cycle (LICY, down 0.63% in May, down 0.84% YTD)

The relevance of battery recycling was evidenced by the media in March that covered the visit of Canadian PM and the European Commissioner to Li-Cycle's facility in Ontario. Revenues from product sales and recycling services before fair market value adjustments reached \$7.7 million in 1Q23, up from \$3.6 million in 1Q22. Li-Cycle currently operates via four Spokes (in Ontario, NY, Arizona and Alabama) that can together recycle more than 50,000 tonnes of lithium-ion battery material/year. Management expects to have total operational processing capacity of more than 80,000 tonnes/year of lithium-ion battery material across North America and Europe by the end of 2023.



Xpeng (XPEV, down 17.05% in May, down 20.72% YTD)

Increasing competition and EV price cuts in the Chinese market, the largest EV market on the planet, has put pressure on Xpeng's sales and margins. In 1Q23 the company reported a decrease in units and revenue. In 1Q23 Xpeng delivered 18,230 EVs, down from 1Q22 sale of 34,561 units and also down from 4Q22 deliveries of 22,204 vehicles. Total deliveries in April added to 7,079 units, bringing the YTD figure to 25,309 units. Revenues in 1Q23 were RMB 4.03 billion, a 21.5% decrease over 4Q22. Chairman and CEO, Mr. He Xiaopeng, explained the 1Q23 results as follows: "I took actions to make changes to our strategy, organizational structure and senior management team decisively. I am fully confident in taking our Company into a virtuous cycle driving product sales growth, team morale, customer satisfaction and brand reputation over the next few quarters." In June Xpeng will launch its G6 product, a NEV SUV that he expects will significantly improve cash flows from operations.



Rivian (RIVN, up 14.90% in May, down 20.08% YTD)

On 9th May, the company reported its 1Q23 results. Although Rivian produced 9,395 vehicles in 1Q23 and delivered only 7,946 units, management reiterated that the company is on track to deliver 50,000 by year end. Revenue in 1Q23 was \$661 million, a material growth over the \$95 million booked in 1Q22, while loss from operations improved from \$1.6 billion in losses in 1Q22 to \$1.4 billion in 1Q23. Management also reiterated that positive gross margins are expected by the end of 2024. Is the company to face a cash crunch? The EV maker reported a \$11.8 billion cash position as of 31st March. In April the US Treasury confirmed that Volkswagen, BMW, Nissan, Rivian, Hyundai and Volvo EVs would not access the \$7,500 tax credit for not being in line with the battery sourcing rules. Rivian's passenger EVs R1S and R1T will be impacted.



Maxeon Solar (MAXN, down 1.14% in May, up 73.04% YTD)

The company again overdelivered on results, this time for the quarter ending in April. Revenue in 1Q23 reached \$318.3 million, from \$223 million booked in 1Q22, while shipments grew from 488 MW to 774 MW in the same period. Maxeon excited investors in 4Q22 when it reported gross profit of \$20 million, reversing a gross loss of \$12.9 million in 1Q22. In 1Q23 gross profit reached \$53.6 million. With the strength of 1Q23 results, management raised their EBITDA guidance for the year from the previous \$80/\$100 million to \$95/\$120 million. Long term prospects are solid, the utility scale pipeline in the US is fully booked until 2025 and the distributed business continues to grow strong in Europe.