SOLID OXIDE FUEL CELLS TO PUSH HYDROGEN ADOPTION. BLOOM ENERGY IS AT THE FOREFRONT.

Our Investment Thesis

Fuel cell technology is gaining traction as a reliable energy source, particularly for stationary applications, amid escalating demands for corporate sustainability and global net-zero targets. While solar and wind energies have secured significant investment, their intermittency necessitates complementary technologies such as hydrogen fuel cells to ensure a consistent power supply. Proponents of hydrogen fuel cells argue that they offer flexibility and reliability. Unlike batteries, which require charging and have a limited lifespan, fuel cells generate electricity continuously as long as there's a steady supply of hydrogen. This makes them ideal for applications where downtime is unacceptable, such as data centers or critical infrastructure. The key to unlocking this market's full potential lies in reducing costs and enabling fuel cells to compete effectively with traditional power generation technologies. We believe this can be achieved through advancements in materials science and manufacturing processes. As a result, companies focused on developing innovative solutions that enhance the design and efficiency of hydrogen fuel cells are particularly attractive investment opportunities. **As the hydrogen economy continues to develop, we expect innovative fuel cell designs like PEMFCs (Proton Exchange Membrane Fuel Cells) and SOFCs (Solid Oxide Fuel Cells) to lead the market, and thus companies that are at the forefront of developing these techniques are poised to win.**

Our Investment Pick

Bloom Energy Corporation (NYSE: BE)

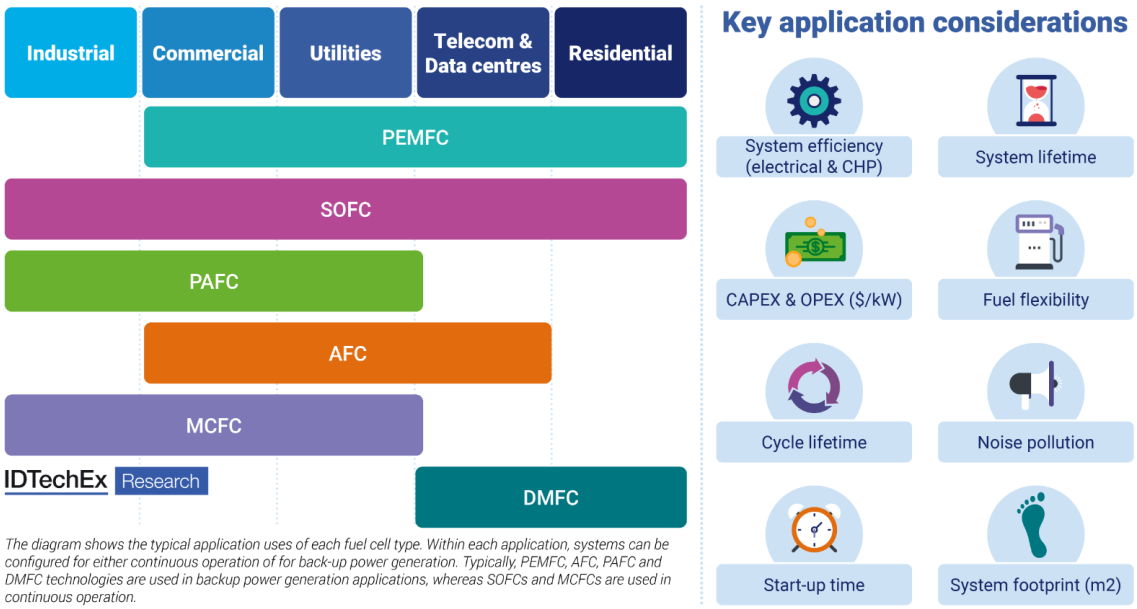
Bloom Energy has surged over 130% in the past month, drawing significant market attention. Its 80 MW project to power AI data centers from 2025, alongside strong financials and strategic partnerships, showcases its commitment to innovation and scalability, positioning it as a compelling growth investment.

The U.S. Renewable Energy Landscape: Hydrogen to Emerge as a Fuel of Choice

Electricity generation from renewable energy sources has been growing steadily in the United States over the past decade. Last year, electric power generation from all types of renewables accounted for nearly one-quarter of total generation by the U.S. electric power sector. The U.S. Energy Information Administration (EIA) expects that new renewable capacity—mostly wind and solar—will reduce electricity generation from both coal-fired and natural gas-fired power plants in 2024, eventually accounting for 18% of the total energy mix. However, concerns related to the intermittency of these renewable sources have propelled hydrogen as an attractive alternative. Although the technology is comparatively new, with relatively less traction and adoption, we believe it has the potential to disrupt the clean energy landscape.

Traditional power generation technologies like steam and gas turbines and diesel generators maintain widespread market uptake due to their low associated costs. However, growing concerns over energy security and global decarbonization targets are driving companies to seek green power generation alternatives. We believe that lowering costs will be crucial in facilitating the widespread adoption of fuel cell technologies. **In this context, the stationary fuel cell market presents a dynamic landscape with significant growth potential. With a total market value of $1.2 billion in 2023, it is projected to exceed $8 billion by 2035, indicating a compelling CAGR of 16.7%, according to IDTechEx**. This trajectory is underpinned by the increasing demand for clean energy solutions and the expanding hydrogen economy.

Chart 1: Outline of the Major Stationary Fuel Cell Application Areas and the Current Typical Use Cases by Fuel Cell Type



The diagram shows the typical application uses of each fuel cell type. Within each application, systems can be configured for either continuous operation of for back-up power generation. Typically, PEMFC, AFC, PAFC and DMFC technologies are used in backup power generation applications, whereas SOFCs and MCFCs are used in continuous operation.

Source: Intro-act, IDTechEx

The Promising Role of PEMFCs and SOFCs in Hydrogen Energy Transition

Fuel cells have long been recognized as a promising clean energy solution, and now, innovative new designs are rapidly gaining momentum. Among the most exciting advancements are two transformative technologies leading the charge: Proton Exchange Membrane Fuel Cells and Solid Oxide Fuel Cells, both of which are set to redefine the energy landscape.

Proton-Exchange Membrane Fuel Cells

Proton exchange membrane (PEM) fuel cells are a type of fuel cell that uses a polymer membrane to conduct protons and are considered a promising clean energy technology. Operating at temperatures below 100°C, PEMFCs offer swift response times to power demand fluctuations, making them particularly well-suited for applications like vehicles. Key players like **Ballard (NASDAQ: BLDP)** and **Plug Power** (**NASDAQ: PLUG**) are already exploring the integration of PEMFCs into data centers, signaling the potential disruption of the dominance of diesel generators in backup power solutions. However, the high cost of pure hydrogen fuel, currently more expensive than traditional non-renewable fuels, poses a significant challenge to widespread adoption. Additionally, PEMFCs' susceptibility to carbon monoxide poisoning further complicates matters, as catalyst sensitivity leads to cell degradation. Further, limited access to green hydrogen and inadequate supply infrastructure exacerbate these issues.

PEMFCs have indeed garnered substantial commercial attention, particularly in automotive applications. However, their primary market lies in stationary power generation, notably for backup purposes within data centers, telecoms, and commercial buildings. The growing concern over global CO2 emissions and the burgeoning hydrogen economy aligns perfectly with PEMFCs, positioning them as viable replacements for diesel generators. However, their lack of fuel flexibility currently hinders widespread adoption. As the hydrogen economy matures and infrastructure improves, we anticipate that the stationary PEMFC market will evolve alongside it, expanding significantly as fuel cell technology becomes more accessible and cost-competitive.

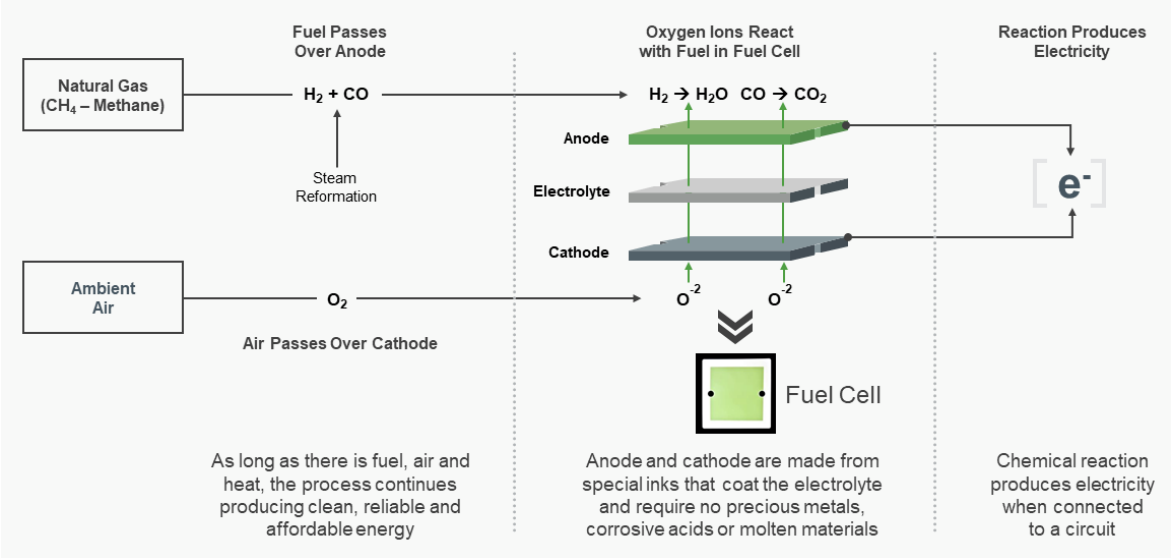
Solid-Oxide Fuel Cells

High-temperature alternatives like SOFCs are also gaining traction. Operating at temperatures exceeding 650°C, SOFCs can tolerate impurities and internally reform cheaper hydrogen carrier fuels such as natural gas and ammonia. This versatility enables combined heat and power (CHO) operation, increasing overall cell efficiency to over 80%. **Despite slow start-up times and high costs associated with thermally resistant materials, we believe SOFCs present a unique opportunity as a transition technology while the hydrogen economy develops.**

SOFCs, constructed with anode and cathode electrodes sandwiching a solid oxide electrolyte, operate on semi-electro reactions at their respective electrodes. We think it's noteworthy that SOFCs can generate electricity efficiently while producing non-pollutant emissions. The hydrogen oxidation reaction (HOR) at the anode produces electrons, which then facilitate the oxygen reduction reaction (ORR) at the cathode via an external circuit. The high operating temperatures of SOFCs, enabled by their constitutive elements, allow for cogeneration and heat recovery. This makes SOFC systems highly efficient in producing electricity from fuels. Moreover, we think that the ability of SOFCs to run on biofuels provides a significant environmental advantage, further, contributing to environmental sustainability.

Unlike other fuel cell types, SOFCs exhibit remarkable fuel flexibility. They can convert hydrocarbons into a hydrogen-rich stream internally via reforming and CO-shift processes, making them less dependent on pure hydrogen feeding. This is a substantial strength given the current scarcity of hydrogen. Additionally, SOFCs can electrochemically convert carbon monoxide, further enhancing energy production. **We think it's crucial to highlight that SOFC systems offer high efficiency pathways for electricity generation from various fuel sources**. Their ability to deliver high-quality heat and extend to trigenerative systems when integrated with absorption cooling machines further bolsters their appeal in the clean energy transition.

Chart 2: Solid Oxide Fuel Cell: How it Works?



Source: Intro-act, Bloom Energy

Alternative Fuel Cell Technologies: Competitors in the Race

While PEMFCs and SOFCs lead the market, alternative fuel cell technologies such as alkaline fuel cells (AFCs), molten carbonate fuel cells (MCFCs), phosphoric acid fuel cells (PAFCs), and direct methanol fuel cells (DMFCs) remain competitive. MCFCs, in particular, rival SOFCs due to their similar high-temperature operation and ability to operate on hydrogen carrier fuels via internal reforming. We think MCFCs' potential for carbon capture applications alongside power

generation could incentivize market uptake, particularly in the industrial sector. Low-temperature alternatives like AFCs and PAFCs have established a historical presence but face limitations such as limited power densities and outputs compared to PEMFCs. DMFCs, while operating using widely available methanol fuel, are restricted to specific niche use cases due to their power density limitations.

This leads us to take a bullish view on the emergence of SOFCs as the most viable fuel cell design, and we think players like Bloom Energy (NYSE: BE) are the ones who are poised to benefit from this trend.

Company Spotlight: Bloom Energy Corporation (NYSE: BE)

Bloom Energy (*Founded: 2001, HQ: San Jose, California*), with over 1.3 gigawatt (GW) deployed globally, is a key player in stationary fuel cell power generation and SOFC technology. **It recently announced a significant advancement in its fuel cell system, achieving approximately 60% electrical efficiency when operating on pure hydrogen.** This milestone was attained at Bloom's research and development facility in Fremont, California. The company's SOFC platform has previously demonstrated operation on both natural gas and hydrogen blends, positioning it as future-proof technology capable of adapting to evolving energy landscapes.

The high electrical efficiency of Bloom's hydrogen fuel cell system is particularly notable given the current cost dynamics of carbon-free hydrogen. Since hydrogen is more expensive than traditional fuels like natural gas or grey hydrogen, achieving high electrical efficiency becomes crucial for making these systems economically viable and encouraging wider adoption. Moreover, Bloom's SOFC technology stands out in the energy transition due to its ability to directly convert fuel into electricity through electrochemical reactions, unlike conventional combustion technologies such as turbines and reciprocating engines. This results in significantly higher electric efficiency and negligible environmental pollutants like NOx emissions compared to combustion technologies. **Additionally, Bloom's high-temperature SOFC technology is CHP-enabled, allowing customers to utilize high-temperature heat for various applications, further enhancing overall system efficiency by up to 90%.** This additional value stream accelerates the adoption of hydrogen as a clean energy source across diverse sectors.

Chart 3: Comparison of BE SOFC vs Other Fuels and Technologies

	BE SOFC	Other Fuel Cells PEM/PAFC	Combustion Technologies
Electrical Efficiency at full load[1]	High	Medium	Low
Combined Heat and Power Efficiency	High	Medium	Medium
Heat Output Temperature	High	Low	High
Air Pollutants	Negligible	Negligible	High

Source: Intro-act, Bloom Energy

On November 07, 2024, Bloom announced an 80 megawatts (MW) SOFC installation in South Korea, marking the largest single-site fuel cell deployment globally. The project, a collaboration with SK Eternix, will power two eco-parks in North Chungcheong Province, providing reliable, sustainable energy for critical infrastructure. Expected to commence operations in 2025, this project is financed by Korea Development Bank, and is notable as the largest project financing for fuel cells in South Korea's history. Bloom will supply its SOFCs and manage equipment maintenance for

the project. This project collaboration reflects Bloom's ability to build strategic partnerships with global leaders like SK Eternix, demonstrating their shared commitment to clean energy solutions on an international scale.

Adding to the optimism was the announcement on November 14, 2024, of **a groundbreaking supply agreement with American Electric Power (AEP) for up to 1 GW of its fuel cell products**, marking the largest commercial fuel cell procurement globally. As part of the deal, AEP has already placed an initial order for 100 MW of fuel cells, with additional orders anticipated in 2025 as the project scales up. **Moreover, the company also announced follow on orders from Quanta, which are expected to establish the world's largest fuel cell islanded microgrid site.** These projects underscore Bloom Energy's potential in powering large-scale AI data centers. In his remarks, KR Sridhar, Founder, Chairman, and CEO of Bloom Energy, emphasized the significance of these projects as proof points for the company's capabilities. Meanwhile, Dan Berenbaum, CFO of Bloom Energy, acknowledged the quarterly variability inherent in the company's project-based business model but expressed confidence in its ability to execute based on identified projects and contracting activities.

For the full-year 2024, Bloom reaffirmed its financial guidance, targeting revenue between $1.4 billion and $1.6 billion, non-GAAP gross margin of approximately 28%, and non-GAAP operating income ranging from $75 million to $100 million. Bloom's Q3 2024 results were marked by a revenue decline of 17.5% YoY to $330.4 million, accompanied by an improvement in gross margin, up 25.1 percentage points to 23.8%, although non-GAAP gross margin slipped 6.4 percentage points to 25.2%. The company's operating loss narrowed significantly by $94.1 million YoY to $9.7 million, while non-GAAP operating profit decreased by $43.7 million to $8.1 million. The company's non-operating expenses significantly slipped from $65.29 million in Q3 2023 to $ 5.06 million in Q3 2024. Net loss notably narrowed from $168.9 million to $14.7 million on a YoY basis.

In the past month, BE was up more than 130%. Bloom Energy's 80 MW power project, set to power AI data centers from 2025, highlights its role in enabling clean, reliable energy solutions. Follow-on orders with Quanta and strong financial performance underscore its focus on strategic partnerships, efficiency, and profitability. With a clear commitment to innovation, scalability, and sustainability, Bloom Energy is well-positioned for growth, making it a compelling investment opportunity.

Chart 4: BE vs S&P 500 (1-Year Comparison)

Source: Intro-act, Trading View, Data as on November 18, 2024

CLEANTECH NEWS

INDUSTRY TRENDS

US Election: What a Trump or Harris victory means for the hydrocarbons sector. As US voters head to the polls on November 5, Republican nominee Donald Trump and Democrat Kamala Harris are virtually tied in the polls. A Trump victory would likely promote growth in the oil and gas sectors, allow more LNG permits, and take a relaxed approach to environmental regulations. In contrast, a Harris win would strengthen electric vehicle supply chains, promote offshore wind and household heat pumps, and encourage states to use IRA subsidies for greener economies. Both candidates' priorities differ dramatically, with Trump's plans opposing those of the current Democrat administration. Read more. *(Energy Monitor)*

Con Ed and first student bring solar microgrid to New York. Con Ed and First Student launched a $9 million pilot project in Brooklyn to test solar-powered microgrids for electric school buses. The project aims to reduce grid stress and costs by using onsite clean power, smart charging, and vehicle-to-grid services. Four battery-electric school buses are part of the trial, with 12 more expected next year. Solar panels on the buses will also provide extra power to the microgrid. The project's success could be scaled up for other fleets, reducing grid upgrades and costs for utility customers. Read more. *(CleanTechnica)*

US Space Solar startup readies "Radiation-Hardened" solar cells for mass production. Solestial, a US startup spun off from Arizona State University, is preparing to mass-produce "radiation-hardened" solar cells for space applications. Its technology enables self-repairing and efficient energy harvesting in space, addressing the challenge of transferring clean kilowatts from space to Earth. Solestial has partnered with Meyer Burger Technology to scale up production, aiming to reach 1 megawatt per year by mid-2025. The company is also collaborating with Manufacturo to optimize its production process and ensure quality control for space applications. Read more. *(CleanTechnica)*

Update: AI, data centers, & the demand for electricity. The Future Investment Initiative in Riyadh, Saudi Arabia is discussing AI and data centers, with attendees including tech giants like Alphabet's Ruth Porat and Microsoft's Eric Schmidt. They're concerned about the energy-hungry data centers that underpin AI, which are straining electricity grids worldwide. Blackstone's Stephen Schwarzman warned of a 40% increase in electricity demand by 2035, while others explored nuclear energy to power AI projects. Saudi Arabia is promoting its low-cost energy options for data centers, but critics argue this will divert renewable energy from ordinary people and businesses. Read more. *(CleanTechnica)*

20% of US rooftop solar systems are Sunrun systems, 45% of new battery installations are Sunrun. Sunrun, the largest rooftop solar company in the US, has reached one million customers. The company holds a significant market share with 20% of US rooftop solar systems being Sunrun systems and 45% of new battery installations also being Sunrun installations. Chris Rauscher, Head of Grid Services & Virtual Power Plants at Sunrun, attributes this success to discipline, prioritizing sustainable growth, adapting to industry changes, offering compelling products and services, great customer care, and innovation. The company has over 25,000 customers enrolled in virtual power plant programs, a scale unseen by any other company in the industry. Read more. *(CleanTechnica)*

New York reaches 6 gigawatts of solar power one year early. New York has reached 6 gigawatts of installed solar power capacity, a year ahead of its target under the Climate Leadership and Community Protection Act. This milestone produces enough electricity for one million homes and has attracted $9.2 billion in private investment, creating 14,000 jobs. The state's community solar deployments have made it the national leader, with 885 MW installed last year, and Governor Hochul's support has driven the industry to deliver clean energy to consumers. Read more. *(CleanTechnica)*

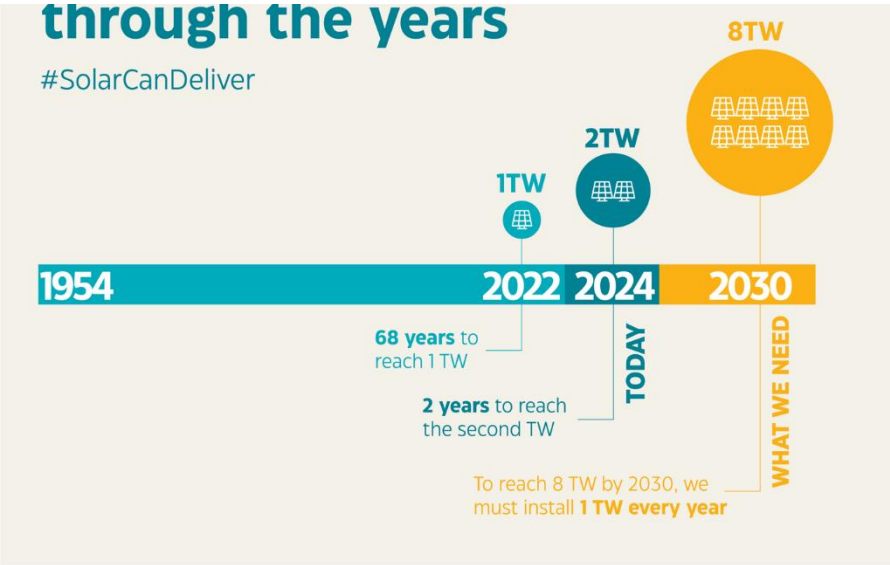
How Is China's relationship with USA (& Tesla) going to change on cleantech? China's relationship with the US and Tesla may change on cleantech due to shifting dynamics between Donald Trump and Elon Musk. Trump's transactional nature and willingness to flip on issues like China make his stance uncertain, while Musk has been positive about China and has invested heavily there. If Trump softens his rhetoric on China, it could lead to a better relationship

between the two countries, potentially benefiting Tesla's production in China. However, this would also mean tariffs on EVs and solar panels might decrease, allowing Chinese companies to enter the US market, threatening American automakers. Read more. *(CleanTechnica)*

Fuel Cell electric aircraft help to drive the green hydrogen market. The European Union has launched a plan to replace liquid fossil fuels with a lower-carbon gas network, including green hydrogen for aviation, shipping, and heavy industries. Scandinavian Airlines signed an agreement between Denmark and the Netherlands to leverage Denmark's offshore wind industry to generate green hydrogen for domestic use and export. The partnership aims to create a seamless EU-wide hydrogen market, reducing reliance on fossil fuels. Green hydrogen is also being explored for fuel cell electric aircraft, with Delta Airlines partnering with Airbus and Plug Power to study its feasibility at Hartsfield-Jackson Atlanta International Airport. Read more. *(CleanTechnica)*

Global installed solar capacity to blow past 2 terawatts, USA or not. The Global Solar Council reports that global installed solar capacity has surpassed 2 terawatts, a significant milestone achieved in just two years since reaching the 1-terawatt mark in 2022. This growth is attributed to exponential expansion of solar energy globally, with the US and other countries contributing to this achievement despite potential changes in US energy policy under the incoming government. The Solar Council aims to collaborate with other renewable stakeholders to maintain this pace, focusing on financing and cost reduction to unlock further growth. Read more. *(CleanTechnica)*

Chart 5: Solar Energy Through the Years



Source: Intro-act, Global Solar Council

Behind the curtain: Power grid resilience for data centers. Data centers are crucial to our digital economy, but their electricity consumption is expected to reach 9% of U.S. electricity by 2030, largely powered by fossil fuels. To meet sustainability goals, data centers must adopt efficient practices and power resilience measures. A distributed medium-voltage system design can ensure seamless power delivery even in the event of a fault, reducing downtime and environmental impact. Implementing robust, compact switchgear and automating restoration processes can also enhance resilience, eliminating human error and reducing backup generator usage. Power resilience is now a business imperative for data centers, with significant financial losses associated with outages. Read more. *(CleanTechnica)*

Is this the year of peak energy emissions? The World Economic Forum (WEF) predicts that 2024 will be the year of global peak energy emissions, marking a historic moment in the transition towards sustainable energy. However, despite

this progress, much work remains to be done to meet Paris Climate Agreement targets by 2050, with CO2 emissions expected to halve but still result in 2.2°C warming by the end of the century. Fossil fuels account for over 75% of global greenhouse gas emissions and nearly 90% of carbon dioxide emissions, while renewable energy adoption has reached a level where emissions are peaking. Read more. *(CleanTechnica)*

US Air Force pursues green hydrogen via geothermal energy. The US Department of Defense is exploring new clean power resources on its bases to reduce dependence on off-base electrical infrastructure. Enhanced geothermal energy systems are being developed to adapt to various underground conditions, with the Air Force leading the charge in deploying them for green hydrogen production. Four demonstration projects have been launched at military bases across the country, and three more industry stakeholders have joined the initiative. The goal is to produce zero-emission electricity and green hydrogen for fuel cells, reducing reliance on fossil fuels. Read more. *(CleanTechnica)*

A 30-megawatt space solar power plant is scheduled for 2030. Space Solar is racing to develop an orbiting solar power plant to beam zero-emission electricity to Earth by 2030. They've partnered with Transition Labs and Reykjavik Energy to build a 30-megawatt plant in Iceland, with plans to scale up to gigawatts. The receiving station will be a sprawling netlike structure several kilometers in diameter, which may be co-located with offshore wind farms. Space Solar's CASSIOPeiA system uses concentrating mirrors and solar panels to transmit power wirelessly to Earth, reducing costs and increasing predictability compared to traditional renewable energy sources. Read more. *(CleanTechnica)*

Massive 1-Gigawatt virtual power plant created from thin air. Texas-based NRG Energy, Google Cloud, and Renew Home have collaborated to create a massive 1-gigawatt virtual power plant, which will enlist individual ratepayers in grid stability efforts. The project aims to improve grid resiliency, particularly in Texas, where ERCOT operates independently. To achieve this, hundreds of thousands of free smart thermostats will be distributed and installed by Vivint and Nest, making subtle adjustments to help customers shift energy use during peak demand periods. The effort involves a technology makeover for NRG and predictive pricing models to provide ratepayers with lower rates. Read more. *(CleanTechnica)*

Arizona solar and storage project will use domestic batteries to help power $1 billion Meta data center. Ørsted has commissioned the Eleven Mile Solar Center in Arizona, a 300-megawatt solar farm and 300 MW/1200 MWh battery energy storage system. The project will power homes and businesses as well as Meta's planned $1 billion data center in Mesa, AZ. Ørsted used domestic batteries from Fluence Energy, which manufactured the cells in Tennessee and assembled them in Utah. The project received a $680 million tax equity investment from J.P. Morgan, one of the largest solar and storage transactions since the Inflation Reduction Act. Read more. *(Renewable Energy World)*

One of the largest solar projects in the US opens in Texas, backed by Google. Google-backed solar project, "Orion Solar Belt", has opened in Texas, one of the largest in the US, with 875 megawatts of clean energy. Google has contracted over 2,800 megawatts of new wind and solar projects in the state, exceeding its power needs. The tech giant aims to spend $16 billion globally on clean energy by 2040. The project will provide about 85% of its power to data centers and cloud computing in Texas, with the rest going to the state's electrical grid. Read more. *(Renewable Energy World)*

Texas continues to break battery energy storage records. Texas continues to break battery energy storage records, with six new batteries approved for commercial operations in September, totaling over 730 MW of power and 900 MWh of capacity, a record for newly commissioned storage. ENGIE owns three of these batteries and has more than 500 MW of new capacity, making it the first BESS owner in ERCOT to have over 1 GW of total installed capacity by rated power. Several companies, including Plus Power, Jupiter Power, and Energy Vault, are also developing large-scale battery energy storage projects in Texas, with a combined total of over 7.2 GW and 10.5 GWh of commercially operational capacity. Read more. *(Renewable Energy World)*

Google buying power from ENGIE's largest solar project. Google has agreed to purchase 90 megawatts of renewable energy from ENGIE's Chillingham solar project in Texas, marking their fifth global off-take deal together. The 350 MW project is ENGIE's largest single solar project in the US and will be constructed and operated by ENGIE. Google

aims to run on carbon-free energy 24/7 on every grid where it operates by 2030. This agreement follows Google's recent deals with SB Energy and Energix Renewables, and brings their total contracted clean energy capacity in Texas to over 3 GW. Read more. *(Renewable Energy World)*

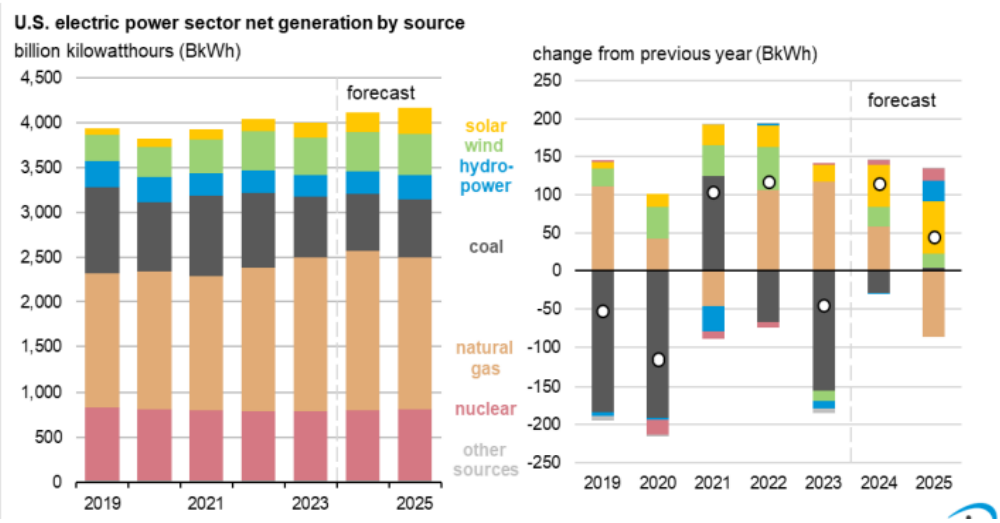
Sunrun creates New York's largest residential virtual power plant. Sunrun has activated New York's largest residential virtual power plant, comprising over 300 solar + storage systems, in partnership with Orange and Rockland Utilities. The aggregated home batteries supplied stored energy to stabilize the grid during peak demand events this summer. Participants receive utility bill credits for excess energy supplied to the grid and retain backup power for their homes. Sunrun receives an upfront payment from O&R based on battery capacity installed, allowing it to offer discounted home batteries in exchange for participation. Read more. *(Renewable Energy World)*

JPMorgan gives green energy finance ratio for the first time. JPMorgan, the US' biggest lender, disclosed its Energy Supply Financing Ratio for the first time, revealing $1.29 in green energy financing for every dollar backing high-carbon energy supply in 2023. The bank's decision to disclose this figure followed engagement with New York City Comptroller Brad Lander and comes as banks face pressure from investors to show their role in transitioning clients to clean energy. JPMorgan aims to finance $2.5 trillion in sustainable development by 2030, with $1 trillion focused on climate solutions. Read more. *(Reuters)*

US onshore wind industry struggling despite government push for clean energy, analyst says. The US onshore wind industry is struggling despite government efforts to promote clean energy. Despite the Inflation Reduction Act's 10-year tax credits, investment levels are not being maintained. Analysts expect 2024 to be a historically low year for wind and see no change in this trend over the next few years. Shortages of parts, increased labor costs, and prolonged development timelines have slowed wind farm construction. The cost of building a single wind farm has also risen from $400 million to between $600-670 million due to these challenges. Read more. *(Reuters)*

US power use to reach record highs in 2024 and 2025, EIA forecast says. US power consumption is projected to reach record highs in 2024 and 2025, according to the US Energy Information Administration's Short Term Energy Outlook. Demand will rise to 4,090 billion kWh in 2024 and 4,158 billion kWh in 2025, driven by growing demand from AI, data centers, homes, and businesses. Residential power sales are expected to reach 1,492 billion kWh in 2024, commercial customers 1,426 billion kWh, and industrial customers 1,027 billion kWh. Renewable energy's share will rise to 25% in 2025, while natural gas' share will hold at 42% in 2024 before sliding to 40% in 2025. Read more. *(Reuters)*

Chart 6: U.S. Electric Power Forecast



Source: Intro-act, U.S. Energy Information Administration, Short Term Energy Outlook, November 2024

Solar plants with 60 MW capacity to be built in Senegal. Two solar plants with a combined 60 MW capacity and battery storage are being built in Senegal's Casamance region. The Kolda solar farm project, set for completion in 2026, is West Africa's largest photovoltaic plant with a BESS. Funders have provided €84 million, bringing the total investment to over €105 million. The project will provide clean energy to around 235,000 households and safeguard power supply through its 72 MW battery storage system. Read more. *(Reuters)*

Germany to mandate open market sales for new wind, solar plants. Germany's cabinet approved plans to require most new wind and solar power plants to sell electricity independently on the open market, aiming to better integrate renewables into the country's energy system. The reform targets facilities as small as 25 kilowatts, ending guaranteed prices for small- and medium-sized plants under 100 kilowatts. This change aims to manage electricity surpluses, which often occur during summer, and reduce the burden on the power grid. Germany seeks to cover 80% of its electricity needs through renewables by 2030. Read more. *(Reuters)*

US renewable fuel credits rally to multi-month highs despite Trump reelection. US renewable fuel credits rose to multi-month highs due to increased demand from refiners and higher soyoil prices. This is despite Donald Trump's reelection as US president, which was expected to weigh on the market. Prices for D4 and D6 RINs reached 79 cents each, their highest levels since January. The surge is welcome news for biofuel producers but worsens pain for petroleum refiners whose profit margins have slumped due to oversupply and weak demand. Market participants expect fewer RINs to be available next year, partly due to tighter government mandates and weak fuel demand. Read more. *(Reuters)*

Global solar capacity hits 2 TW on path to climate goal, data shows. Global solar capacity has reached a record 2 terawatts (TW), with more added in the last two years than the previous 68 combined. This milestone is equivalent to powering around 92 million U.S. households. The Global Solar Council's data, which includes small rooftop installations often left out of official government records, suggests achieving 8 TW by 2030 is possible and would meet over half of the UN's climate goal. To raise financing, the council will launch an International Solar Finance group at the next UN talks in Baku. Read more. *(Reuters)*

REGULATORY UPDATES

US Solar manufacturing tax credit — updated, to create more jobs. The US Department of Treasury has issued final rules for the Advanced Manufacturing Production Tax Credit under Section 45X, providing incentives for solar and energy storage manufacturers across the supply chain. The tax credit is tied to production volume, offering long-term support for manufacturers once a facility opens. This policy aims to stimulate solar panel production, battery pack production, and other cleantech manufacturing, creating jobs and economic investment across the country. SEIA commends Treasury and the Biden administration for supporting domestic manufacturing and energy independence. Read more. *(CleanTechnica)*

BOEM, DOD will work closer together on offshore wind development. The Bureau of Ocean Energy Management (BOEM) and the Department of Defense (DOD) signed a Memorandum of Understanding (MOU) to support coordinated offshore wind development. The MOU aims to ensure compatibility between wind energy generation and military operations on the Outer Continental Shelf. BOEM Director Elizabeth Klein and DOD's Brendan Owens signed the agreement, which defines roles and duties for both organizations during leasing and project review, promoting early collaboration and mutual solutions that balance renewable energy with military preparedness requirements. Read more. *(Renewable Energy World)*

US extends semiconductor tax breaks to some solar factories. The US Biden administration has extended semiconductor manufacturing tax breaks to solar factories that produce solar wafers, thin silicon slices used in solar panels primarily made in China. This move aims to build out a domestic solar supply chain as part of the climate change and jobs agenda. The Treasury Department's new rules allow solar ingot and wafer makers to claim a 25% tax break for new facilities, supporting thousands of good-paying jobs across the country and driving investment in domestic solar manufacturing capacity currently dominated by China. Read more. *(Reuters)*

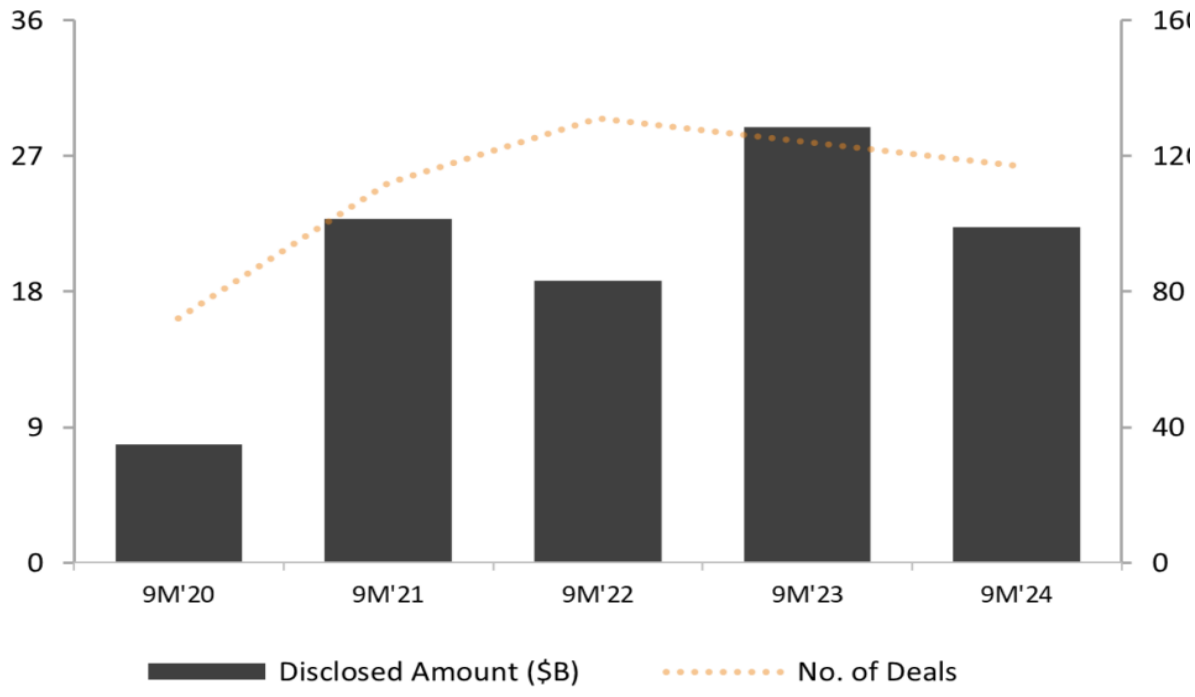
CAPITAL MARKETS

US commits $900m to advance next-generation nuclear reactors. The US Department of Energy has committed $900m to advance next-generation nuclear reactors through the Consolidated Appropriations Act of 2024 and President Biden's Bipartisan Infrastructure Law. The funding aims to catalyse the domestic nuclear industry and support climate objectives, with Tier 1 allocating up to $800m for deploying a first plant and Tier 2 dedicating up to $100m to address industry challenges. The strategy is to foster safe and effective roll-out of advanced reactor technologies across the US, supporting private sector development of sustainable models for Gen III+ SMRs that contribute to environmental protection and community benefits. Read more. *(Energy Monitor)*

Avangrid subsidiary secures federal grant to upgrade power grids in Maine, US. Central Maine Power (CMP), a subsidiary of Avangrid, has received a $31.8m federal grant to modernise Maine's power grid through the US Department of Energy's Grid Resilience and Innovation Partnerships programme. The investment will integrate renewable energy sources, enhance grid reliability and efficiency, and support the Flexible Interconnections and Resilience for Maine project led by Governor Janet Mills' administration. The funding will be used for deploying Advanced Network Management (ANM) and Distribution Line Rating (DLR) technologies to connect additional renewable energy sources while preventing overloads. Read more. *(Energy Monitor)*

Solar sector funding trailing last year's pace by $6 billion, total deals down. Solar sector funding has trailed last year's pace by $6 billion, with total corporate funding totaling $22.3 billion through the first nine months of 2024, a 23% decrease from $28.9 billion raised in the same period last year. The number of deals also dropped to 117 from 124. Solar public market financing decreased 71% YoY, while VC funding activity declined nearly 40%. However, solar debt financing activity surpassed 2023's total, with 68 deals worth $16.7 billion, and investment firms acquired the most solar projects in Q3 2024. Read more. *(Renewable Energy World)*

Chart 7: Solar Corporate Funding



Source: Intro-act, Renewable Energy World, Mercom Capital Group

$81 million for gigantic energy storage showcase in Kentucky. A $81 million energy storage project is underway in Kentucky, transforming a former coal mine into a 287-megawatt facility using pumped storage hydropower. The Lewis Ridge Long-Duration Energy Storage Project will provide about eight hours of energy storage, crucial for grid decarbonization with wind and solar power. The US Department of Energy has confirmed the award, providing an initial $12 million towards the total funding. This project is expected to be replicated elsewhere in the country, utilizing suitable coal mine sites and existing dams to generate renewable energy. Read more. *(CleanTechnica)*

$988 billion in private investments connected to "Investing in America" agenda. The Biden-Harris Administration has announced $988 billion in private company commitments to invest in 21st century industries. This includes $446 billion for semiconductors & electronics, $180 billion for EVs & batteries, and $84 billion for clean energy manufacturing & infrastructure. The investments are part of the "Investing in America" agenda, which aims to bring manufacturing back to the US, create jobs, and rebuild roads and bridges using Made in America materials. Public investments under various laws also total billions, boosting the economy and transforming the country. Read more. *(CleanTechnica)*

Pittsburgh gets $96 million for cleantech manufacturing facility, will create 900+ jobs. Pittsburgh has received $96 million for a cleantech manufacturing facility through the US Department of Energy's Advanced Energy Manufacturing & Recycling Grants Program. The facility, to be built by Mainspring Energy, will create over 900 jobs and produce innovative power generators with low emissions. The state is providing an additional $8.6 million, and construction is expected to begin next year. The project aims to revitalize a coal-affected region and strengthen national security while advancing forward-facing technologies. Read more. *(CleanTechnica)*

US DOE funding rolls out for energy efficiency, net-zero projects, & more. The US Department of Energy (DOE) has announced various funding initiatives under the Inflation Reduction Act and Bipartisan Infrastructure Law to support energy efficiency, net-zero projects, and clean tech development. These include collaborations with tribal leaders to reduce greenhouse gas emissions, $44.8 million for electric vehicle battery recycling, a memorandum of understanding with the Commerce Department on AI safety, new tools for home contractors, federal home energy rebates programs, and funding for net-zero projects at Federal facilities. Read more. *(CleanTechnica)*

$474 million for more grid resilience in USA. The US Department of Energy has announced a combined total of $473.6 million in Grid Resilience State and Tribal Formula Grants to 49 states, 5 territories, 254 Tribal Nations, and the District of Columbia to modernize the electric grid and reduce impacts of extreme weather events. This funding is part of the Biden-Harris Administration's Investing in America agenda and aims to strengthen America's power grid against wildfires and natural disasters. The DOE has provided $1.3 billion in Grid Resilience funds since FY 2022, with a total of $2.3 billion expected over five years. Read more. *(CleanTechnica)*

$28 million more for US clean energy workforce development. The Biden-Harris administration's clean energy legislation continues to deliver with $27.98 million in funding distributed under the Energy Auditor Training (EAT) Grant Program. The program, enabled by the Bipartisan Infrastructure Law and Inflation Reduction Act, aims to increase the green building workforce across the country. Funding is being allocated to 15 State Energy Offices and the American Samoa Territorial Energy Office to support energy efficiency improvements and train auditors to identify ways to reduce energy usage and promote savings for homes and businesses. Read more. *(CleanTechnica)*

$430 Million for US clean energy manufacturing in coal communities. The Biden-Harris Administration has allocated $430 million for clean energy manufacturing projects in 15 coal communities across the US. The funds will support 14 projects led by small-and medium-businesses to address energy supply chain vulnerabilities and create over 1,900 good-paying jobs. Five of the projects are in or adjacent to disadvantaged communities, with a focus on maximizing economic, health, and environmental benefits. This investment aims to position the US as a leader in clean energy production and strengthen national security by building domestic supply chains for emerging technologies. Read more. *(CleanTechnica)*

Innovative Eversource battery energy storage system attracts $19.5 million from DOE. Eversource has been selected to receive up to $19.5 million in federal cost share from the Department of Energy's Office of Clean Energy Demonstrations (OCED) to build upon its award-winning 24.9 MW Outer Cape Battery Energy Storage System (BESS).

The project, called Outer Cape Microgrid Optimization, will coordinate and optimize customer-owned clean energy resources with the BESS to extend power reliability during repairs. It aims to enhance electric reliability in the Cape Cod region, particularly for vulnerable environmental justice communities, while also developing a clean energy jobs pipeline program. Read more. *(Renewable Energy World)*

GridUnity selected to receive nearly $50 million in federal funds for its solution to speed up interconnection. GridUnity was selected to receive nearly $50 million in federal funds through the Department of Energy's Grid Resilience and Innovations Partnerships (GRIP) program. The company will use the money to build out its platform, which streamlines the interconnection process for clean generation, making it faster and more efficient. GridUnity's solution aims to reduce the 30-month process to 18 months or less, benefiting 70% of the US population by optimizing transmission grid efficiency, enhancing energy reliability, and lowering consumer costs. Read more. *(Renewable Energy World)*

COMPANY NEWS

Amazon signs agreements to develop small modular nuclear reactors. Amazon has partnered with X-Energy Reactor for $500m funding to develop small modular nuclear reactors (SMRs), aiming to power its data centers with new nuclear technologies. The company is also collaborating with utility companies in Washington state and Virginia on potential nuclear energy projects, aiming to bring over 5GW of new power online by 2039. In Washington state, Amazon will develop four advanced SMRs with an initial capacity of 320MW, expandable to 960MW, while in Virginia, it's exploring a project near the North Anna nuclear power station. Read more. *(Energy Monitor)*

Evoy Vita introduces the world's most powerful electric outboard motor to the US. Evoy Vita has partnered with Axopar to launch the AX/E electric boat sub-brand in the US recreational market, introducing the world's most powerful electric outboard motor, Evoy Storm 300+ HP. The AX/E series combines Axopar's hull design and seaworthiness with cutting-edge electric propulsion technology from Evoy, offering superior performance, zero emissions, and fast charging capabilities. The boats will be available in the US starting 2025, providing a quieter, fume-free experience for recreational boaters. Read more. *(CleanTechnica)*

Chart 7: AXE 25 Cross Top

Source: Intro-act, Evoy

Lightsource bp's Honeysuckle solar project begins commercial operations in US. Lightsource bp has commenced commercial operations at its 188MW Honeysuckle Solar Project in St. Joseph County, Indiana, US. The project has a PPA with Google to power its data centre campus in Fort Wayne, Indiana. The facility employed 85% local workers and sourced materials from US manufacturers, including solar panels from First Solar and steel from Nucor. It is expected to generate $30m in revenue for the local community over its lifetime, supporting local jobs and unions. Read more. *(Energy Monitor)*

GE Vernova's new HVDC competence center to support Europe's energy transition. GE Vernova has opened its new high-voltage direct current (HVDC) Competence Center in Berlin, Germany to enhance grid stability and integrate renewable energy across Europe. The facility will develop and test technology for efficient power transmission over long distances, including offshore submarine links. This expansion supports GE Vernova's commitment to driving Germany's net zero efforts and aligns with the country's ambition to upgrade grid infrastructure. The center will also support regional and global growth in grid solutions, power conversion, and solar and storage, creating approximately 500 new jobs by next year. Read more. *(Energy Monitor)*

GE Vernova expands collaboration with AWS for energy transition. GE Vernova has expanded its multi-year strategic collaboration agreement with Amazon Web Services (AWS), offering Asset Performance Management and CERius software through the AWS Cloud. The agreement aims to support energy companies' adoption of software for managing assets and emissions data during the energy transition. GE Vernova customers, such as AES, are benefiting from the expanded SCA, which enables scaling, quicker onboarding of sustainable energy sources, and maximising investments through cloud-based optimisation. Read more. *(Energy Monitor)*

Kia & DHL Partner on big EV plans. Kia has partnered with DHL Korea to green logistics in Korea through its Platform Beyond Vehicle (PBV) models. The partnership will begin with the Kia PV5, a midsized PBV, starting production in 2026, and expand with the PV7, a large PBV, in 2027. Kia will develop optimized models for DHL's business needs, and plans to cooperate through diverse PBV-linked solutions, including vehicle charging and warranty service. This partnership aligns with DHL Korea's goal of deploying 100% electrified mobility for its logistics business, and Kia aims to expand cooperation in Asia and Europe. Read more. *(CleanTechnica)*

CATL prepares to add grid storage & EV platforms to its portfolio. CATL, the world's largest lithium-ion battery manufacturer, plans to expand its business into grid storage and EV platforms. Founder Robin Zeng aims to reinvent the company as a green energy provider, with a focus on "zero carbon" electric grids that could be ten times larger than its current EV battery business. CATL also intends to offer an off-the-shelf EV platform with integrated long-range batteries, reducing development costs by a factor of ten and opening the auto industry to new competitors. The company is ready to invest in the US and has plans for renewable energy grid systems, power generation, and vehicle-to-grid technology. Read more. *(CleanTechnica)*

Solx will manufacture solar panels in Puerto Rico. Solx, a minority-owned solar panel manufacturing company, plans to establish its first factory in Puerto Rico on the 65-acre Hewlett Packard Campus in Aguadilla. The facility will begin commercial operations in April 2025 and produce up to 1.2 gigawatts of solar panels annually. This investment aims to support Puerto Rico's transition to renewable energy, creating up to 250 high-skilled jobs and contributing to the island's goal of transitioning to 100% renewable energy by 2050. Read more. *(CleanTechnica)*

First Solar sees itself as a big winner of the ITC expansion. First Solar believes it will benefit from the ITC expansion under the CHIPS and Science Act of 2022, as ingot and wafer production facilities qualify for a 25% tax credit. The company's CEO, Mark Widmar, sees this as a technology-neutral decision that allows various technologies to receive similar benefits. First Solar is actively engaged in understanding its eligibility for these benefits, particularly for its Alabama and Louisiana facilities. The company has recently inaugurated a $1.1 billion manufacturing facility in Alabama and is constructing another one in Louisiana, expected to be commissioned by 2025. Read more. *(Renewable Energy World)*

RWE shares boosted by $1.6 billion share buyback. RWE shares surged over 8% after the German utility announced a $1.6 billion share buyback, citing weaker investment rationale for US offshore wind and slower European hydrogen ramp-up due to Donald Trump's election. The move reflects broader fears of Trump's impact on clean energy investments in the US. RWE also reported better-than-expected nine-month financial results, raised full-year guidance, and confirmed a 2024 dividend target. The company still views onshore wind, solar, and battery projects as attractive in the US. Read more. *(Reuters)*

Siemens Energy wins $1.3 billion ScottishPower wind turbine order. Siemens Energy's wind division, Siemens Gamesa, has won a $1.3 billion order from ScottishPower to supply turbines for the East Anglia TWO offshore wind farm. The company will provide 64 SG 14-236 DD turbines, with blades manufactured at its Hull factory. Once completed, the project will have a capacity of 960 megawatts, powering nearly one million homes and contributing to the total £4 billion worth of the East Anglia TWO project. Read more. *(Reuters)*

Solar manufacturer Suniva resumes production of American-made cells. US solar company Suniva has resumed commercial production of American-made solar cells at its Georgia factory, shipping them to customers. This marks a milestone in building a domestic solar supply chain, which had vanished due to low-priced imports. The restart was facilitated by incentives in President Joe Biden's climate law, the Inflation Reduction Act. Suniva aims to produce 1 gigawatt of cells per year, enough to power about 173,000 homes, and has already started supplying Canadian panel maker Heliene with US-made solar cells under a $400 million deal. Read more. *(Reuters)*

GE Vernova posts higher Q3 revenue on power demand growth. GE Vernova reported an 8% rise in Q3 revenue to $8.9 billion, beating expectations of $8.78 billion, driven by strong demand for power and electrification equipment and services. The company's power segment saw a 28% increase in orders due to higher gas power services and equipment demand, while electrification revenue rose 22%. However, the wind business underperformed, with a wider core loss and a 19% decline in orders due to cost inflation, supply chain issues, and project delays. Read more. *(Reuters)*

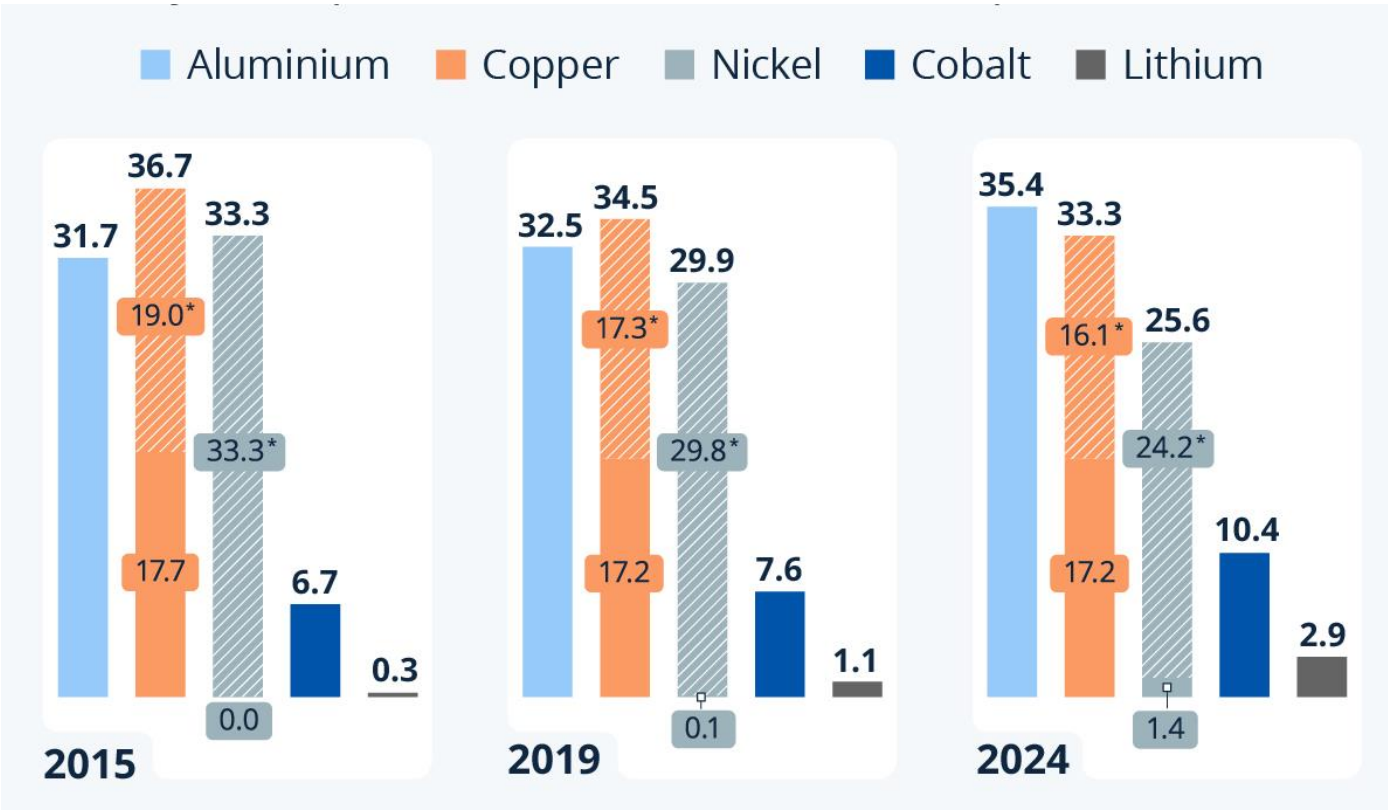
Chart 8: Financial Snapshot – GE Vernova

	3Q'23[-a)]	3Q'24	'23 YTD[-a)]	'24 YTD
Orders	8.2	9.4	30.6	30.9
Revenue	8.3	8.9	23.2	24.4
Adjusted EBITDA*	0.2	0.2	0.2	1.0
Adjusted EBITDA Margin*	2.5%	2.7%	1.0%	3.9%
Free cash flow*	0.1	1.0	(1.2)	1.1

Source: Intro-act, 3Q24 Financial Results Presentation

CLEANTECH CHART OF THE MONTH

Chart 9: Recycling Lags For Some Green Energy Minerals



Source: Intro-act, IEA, Statista

CLEANTECH COMMODITIES

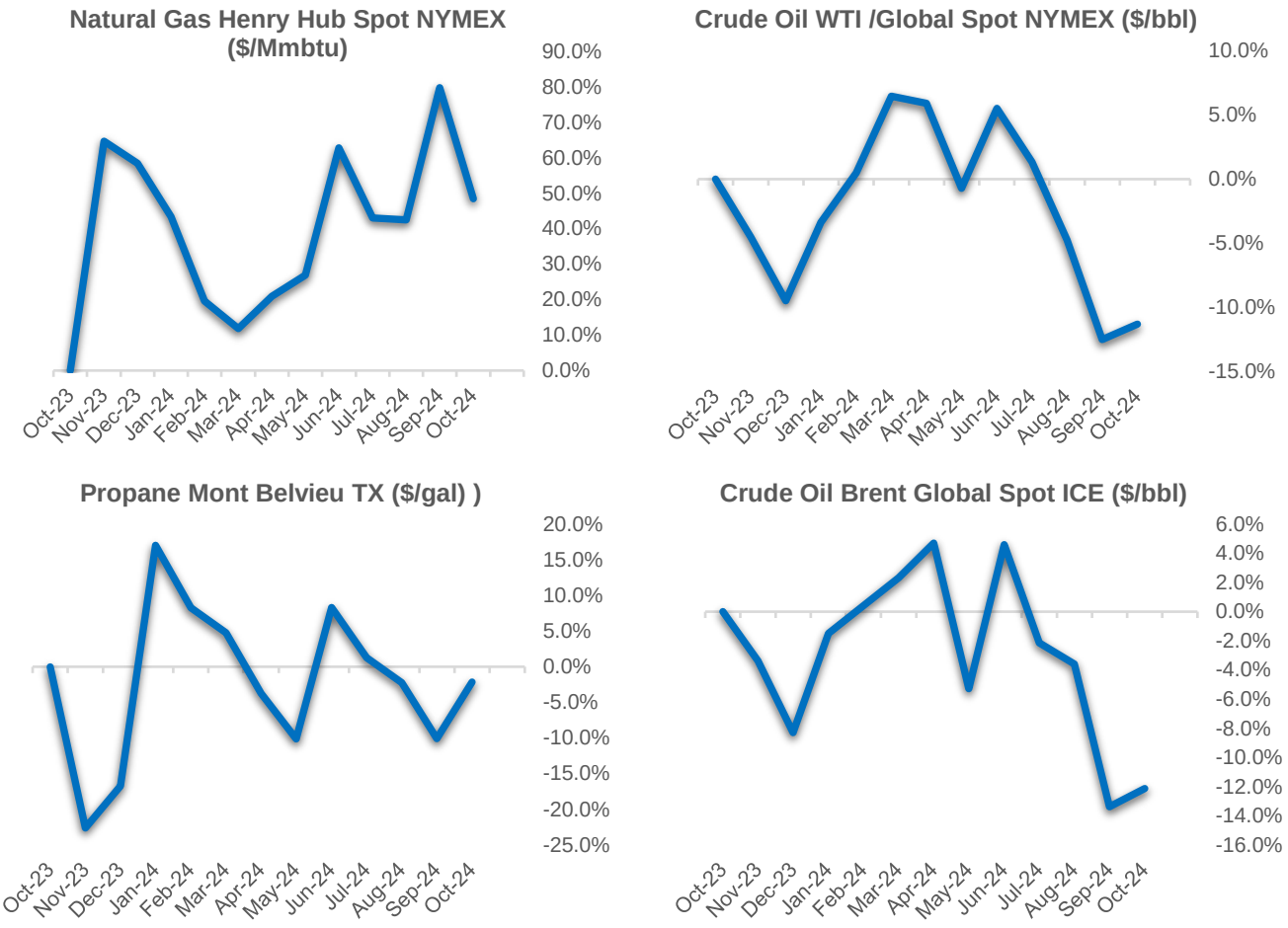
Chart 10: Cleantech Commodities Price Returns

CleanTech Commodities	Price as of 31 Oct 2024	1M	3M	6M	1Y	YTD
Natural Gas and Crude Oil						
Natural Gas Henry Hub Spot NYMEX ($/Mmbtu)	1.82	▼ -31.32%	▼ -6.19%	▲ 8.33%	▲ 8.98%	▲ 8.33%
Crude Oil WTI /Global Spot NYMEX ($/bbl)	69.58	▲ 1.21%	▼ -12.32%	▼ -16.66%	▼ -12.17%	▼ -16.66%
Crude Oil Brent Global Spot ICE ($/bbl)	73.25	▲ 1.24%	▼ -10.00%	▼ -16.98%	▼ -13.39%	▼ -16.98%
Propane Mont Belvieu TX ($/gal)	0.75	▲ 7.97%	▼ -3.99%	▼ -1.06%	▼ -12.66%	▼ -1.06%
Refined Products						
Gasoline Conv Regular NY Harbor ($/gal)	2.09	▲ 2.10%	▼ -15.50%	▼ -23.42%	▼ -12.43%	▼ -23.42%
Diesel No. 2 Low Sulfur NY Harbor ($/gal)	2.21	▲ 5.23%	▼ -7.41%	▼ -11.90%	▼ -17.09%	▼ -11.90%
Heating Oil No. 2 NY Harbor ($/gal)	2.12	▲ 30.04%	▼ -6.36%	▼ -12.06%	▼ -18.23%	▼ -12.06%
Jet Fuel Kerosene-Type U.S. Gulf Coast ($/gal)	2.08	▲ 5.49%	▼ -8.95%	▼ -15.95%	▼ -18.65%	▼ -15.95%
Gasoil Near Term (IFEU $/mt)	669.00	▲ 0.72%	▼ -9.63%	▼ -13.57%	▼ -19.08%	▼ -13.57%
Ethanol Iowa (CRB $/gallon)	1.47	▼ -6.07%	▼ -15.52%	▼ -4.55%	▲ 3.89%	▼ -4.55%
WTI USG 3:2:1 Crack Spread	15.60	▼ -4.15%	▼ -22.66%	▼ -28.47%	▼ -38.02%	▼ -28.47%
Carbon Prices						
Carbon Emissions (EUR/ tonne)	67.36	▼ -9.06%	▲ 8.77%	▼ -13.62%	▼ -24.80%	▼ -13.62%

Metals	Price as of 31 Oct 2024	1M	3M	6M	1Y	YTD
Copper Cash Official LME ($/mt)	9767.00	▲ 5.99%	▲ 3.07%	▲ 11.89%	▲ 14.73%	▲ 11.89%
Lithium Carbonate 99%Min China (CNY/ tonne)	87500.00	▼ -15.46%	▼ -16.27%	▲ 1.16%	▼ -71.07%	▲ 1.16%
Nickel Cash Official LME ($/mt)	17005.00	▲ 1.10%	▲ 0.27%	▲ 2.87%	▲ 5.82%	▲ 2.87%
Cobalt Cash Official LME ($/mt)	24155.00	▲ 0.65%	▼ -9.80%	▼ -14.84%	▼ -15.78%	▼ -14.84%
Platinum Indust (Engelhard) ($/ozt)	990.00	▲ 4.87%	▼ -2.46%	▲ 7.61%	▲ 6.45%	▲ 7.61%
Uranium Near Term (NYM $/lbs)	81.75	▲ 3.22%	▼ -4.55%	▼ -7.10%	▼ -19.26%	▼ -7.10%

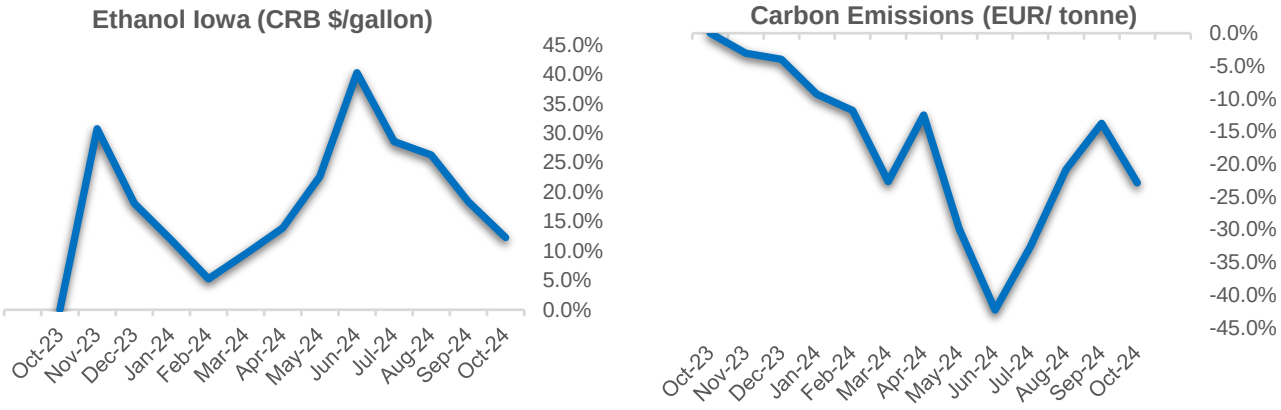
Source: Intro-act, FactSet, Investing.com. Data as of 10/31/24.

Chart 11: Indexed Change in Natural Gas and Crude Oil Prices in Last 12 Months



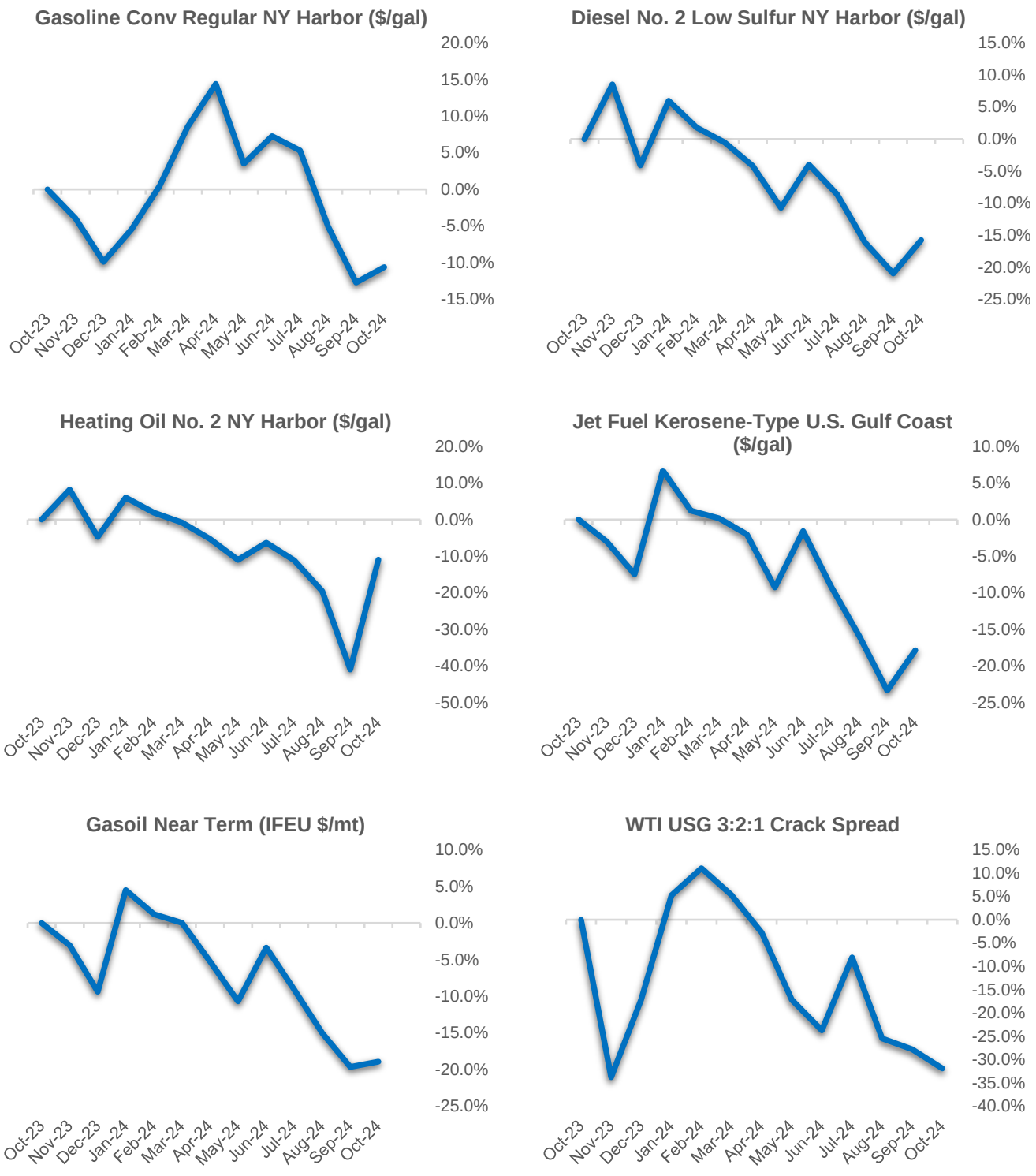
Source: Intro-act, FactSet, Investing.com. Data as of 10/31/24.

Chart 12: Indexed Change in Ethanol Prices in Last 12 Months



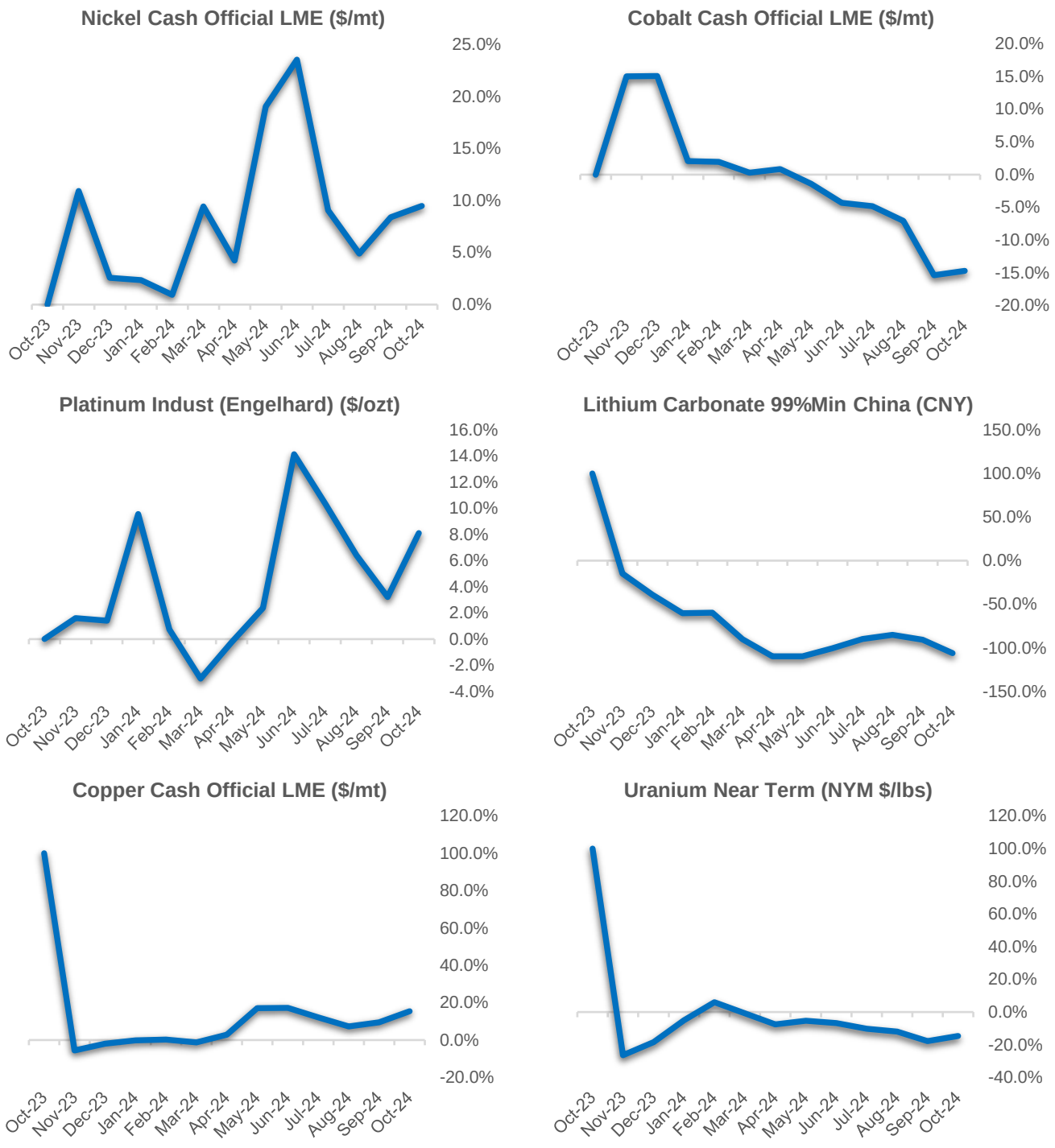
Source: Intro-act, FactSet, Investing.com. Data as of 10/31/24.

Chart 13: Indexed Change in Refined Products in Prices Last 12 Months



Source: Intro-act, FactSet. Data as of 10/31/24.

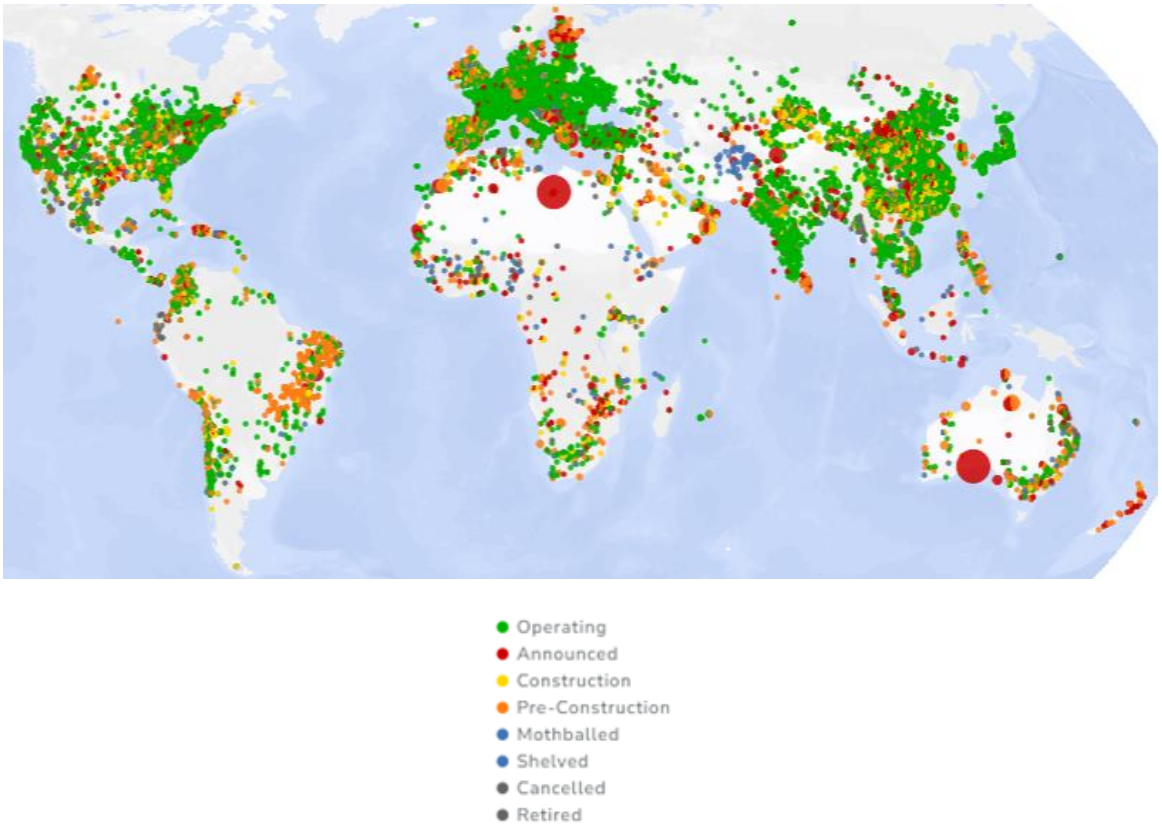
Chart 14: Indexed Change in Cleantech Metal Prices Last 12 Months



Source: Intro-act, FactSet. Data as of 10/31/24.

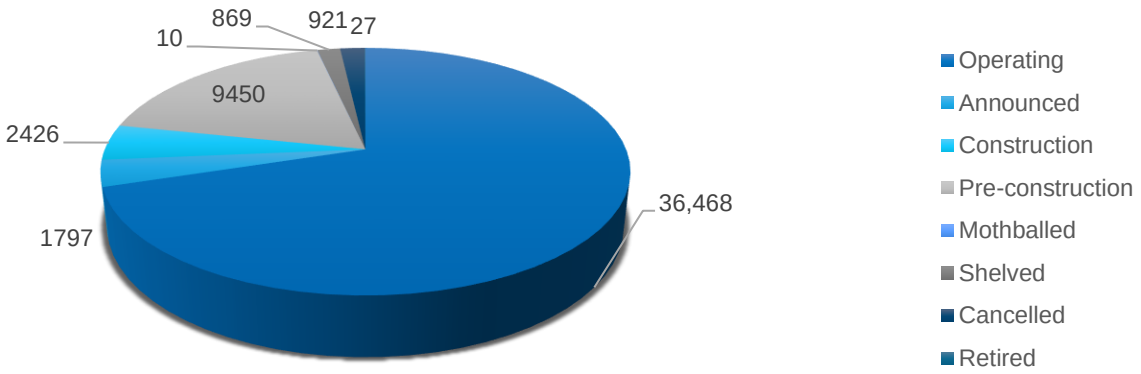
CLEANTECH INSTALLATIONS

Chart 15: Global Solar Power Tracker (June 2024)



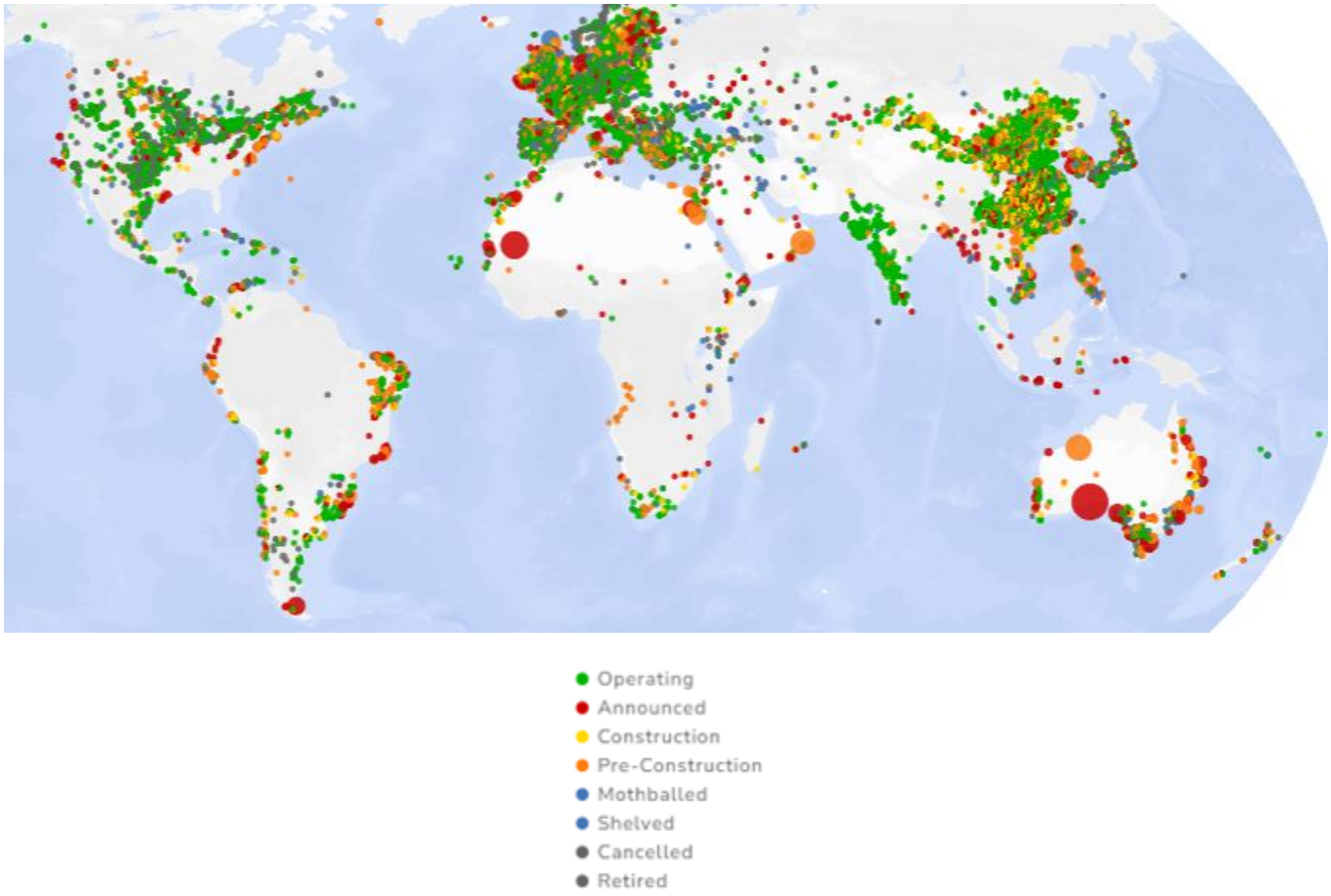
Source: Intro-act, Global Energy Monitor

Chart 16: Worldwide Solar Farm Phases. Total Farms: 51,048 as of June 2024



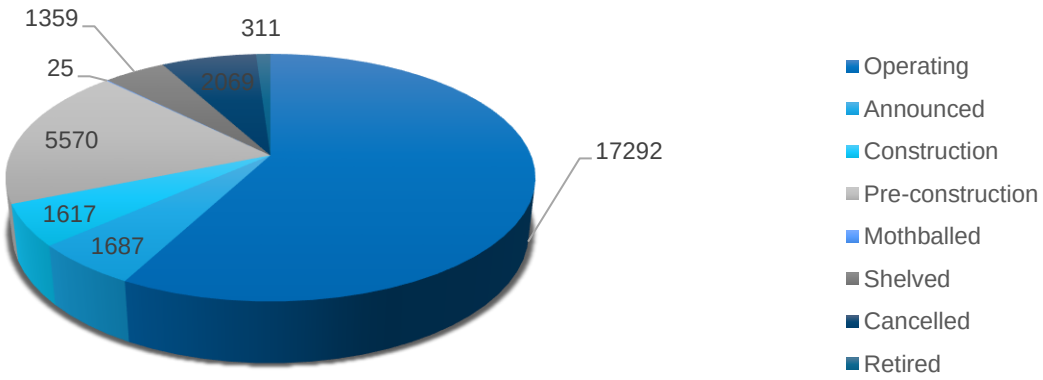
Source: Intro-act, Global Energy Monitor

Chart 17: Global Wind Power Tracker (June 2024)



Source: Intro-act, Global Energy Monitor

Chart 18: Worldwide Wind Farm Phases. Total Farms: 29,930 as of June 2024

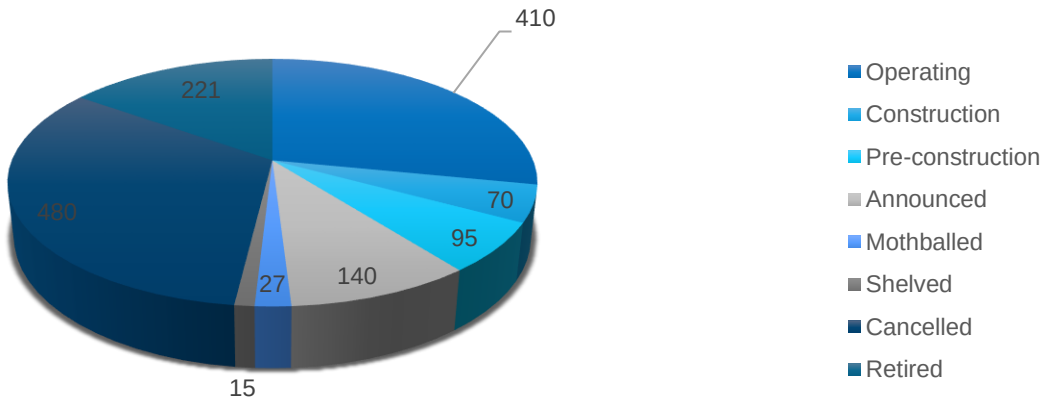


Source: Intro-act, Global Energy Monitor

Chart 19: Global Nuclear Power Tracker (June 2024)

Source: Intro-act, Global Energy Monitor

Chart 20: Worldwide Nuclear Power Plants. Total Farms: 1,458 as of June 2024

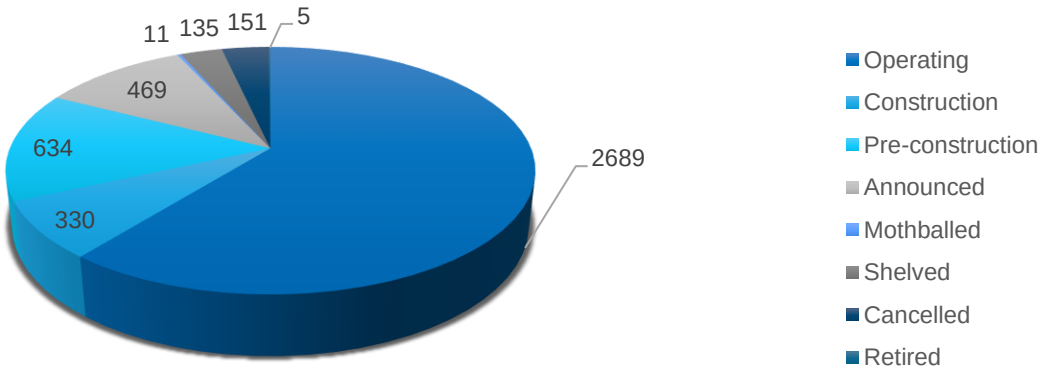


Source: Intro-act, Global Energy Monitor

Chart 21: Global Hydropower Tracker (June 2024)

Source: Intro-act, Global Energy Monitor

Chart 22: Worldwide Hydropower Plants. Total Farms: 4,424 as of June 2024

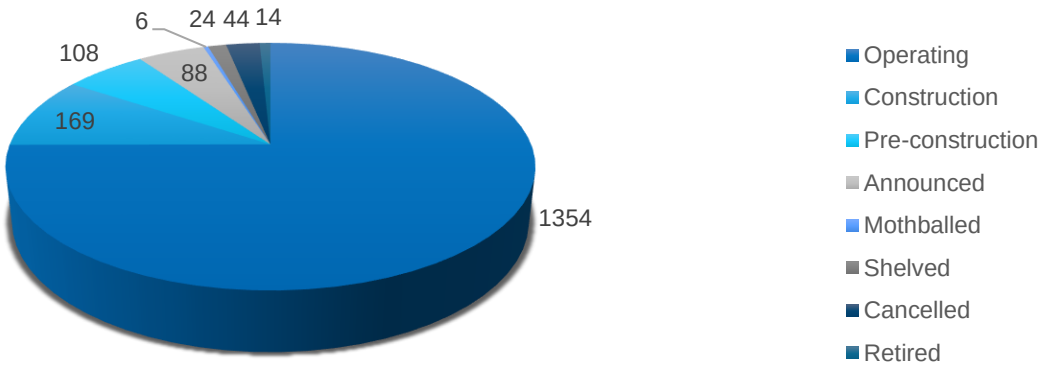


Source: Intro-act, Global Energy Monitor

Chart 23: Global Bioenergy Power Tracker (June 2024)

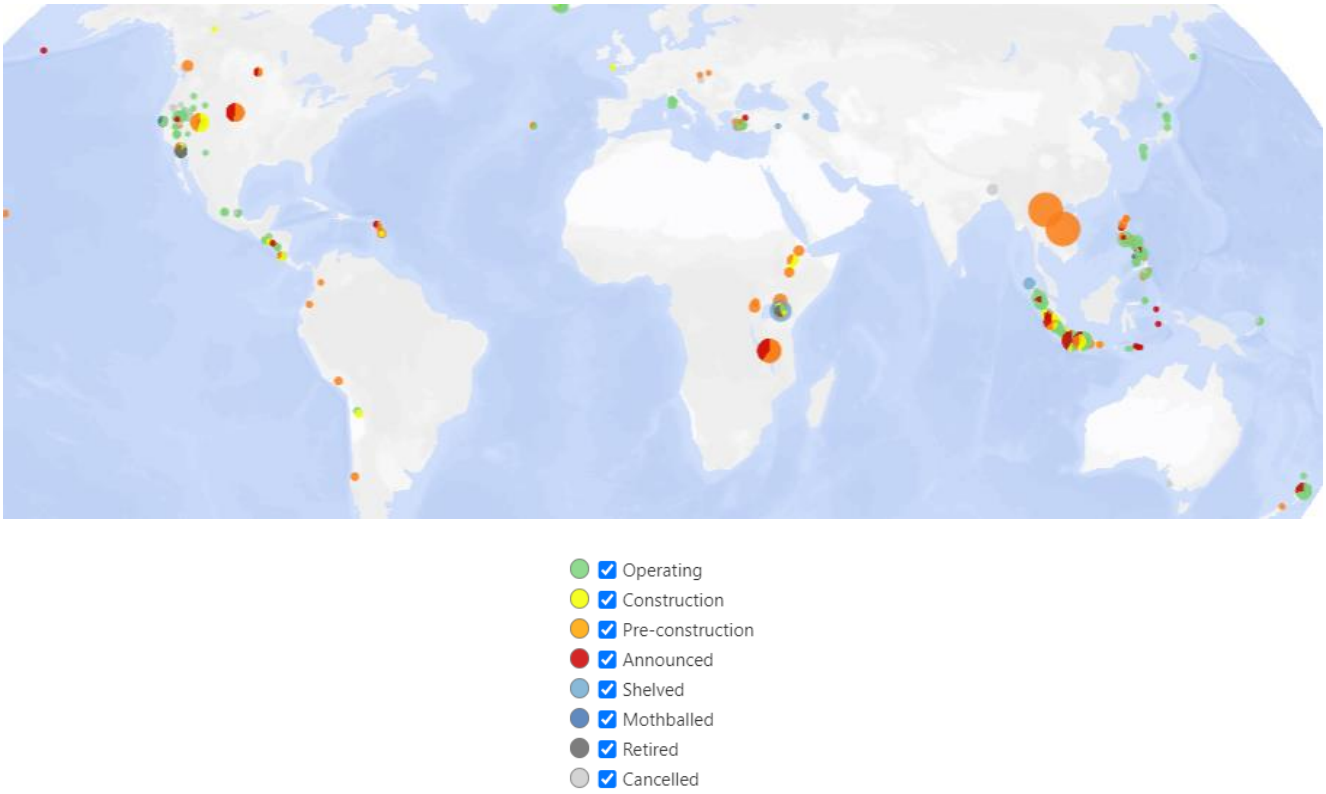
Source: Intro-act, Global Energy Monitor

Chart 24: Worldwide Bioenergy Power Plants. Total Farms: 1,807 as of June 2024



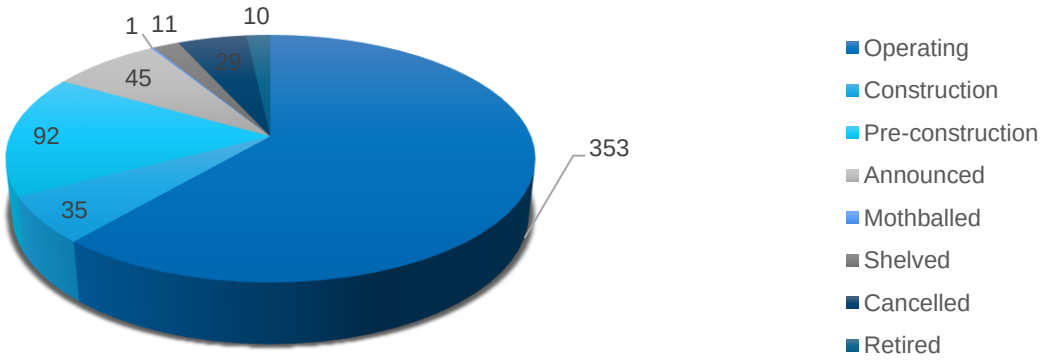
Source: Intro-act, Global Energy Monitor

Chart 25: Global Geothermal Power Tracker (June 2024)



Source: Intro-act, Global Energy Monitor

Chart 26: Worldwide Geothermal Power Plants. Total Farms: 576 as of June 2024



Source: Intro-act, Global Energy Monitor

CLEANTECH CAPITAL MARKET ACTION

M&A Activity

Target	Target Country	Acquirer	Deal Size ($m)	Announcement Date
Renewable Japan Co., Ltd.	Japan	Tokyu Land Corp.	120.46	14-Nov-2024
Mutoh Holdings Co., Ltd.	Japan	Hohei Jitsugyo KK; INTEGRAL CORP / Private Equity; Mutoh Holdings Co. Ltd. /Private Group/	31.92	13-Nov-2024
Fundamenta-Lakáskassza Lakás-takarékpénztár Zrt.	Hungary	MBH Bank Plc	-	11-Nov-2024
AmerCable, Inc.	United States	Mattr Corp.	280.00	08-Nov-2024
SUNfarming GmbH	Germany	I Squared Capital; Cube Green Energy Ltd.	-	07-Nov-2024
Sunnynook Solar Energy, Inc.	Canada	Metlen Energy & Metals SA	29.84	05-Nov-2024
Brookfield Asset Management ULC	Canada	Brookfield Asset Management Ltd.	-	31-Oct-2024
Northvolt AB	Sweden	Volvo Cars of North America LLC	-	30-Oct-2024
Youngduk Haeparang Wind Power Co., Ltd.	South Korea	Revent Energy, Inc.	3.03	29-Oct-2024
Good Energy Group Plc	United Kingdom	Esyasoft Holding Ltd.	-	28-Oct-2024
Verde Bioresins, Inc.	United States	Nxu, Inc.	-	24-Oct-2024
Green Utility Srl	Italy	InfraVia Capital Partners SAS	-	22-Oct-2024

Source: Intro-act, FactSet

PE/ VC Funding Activity

Company Name	Funding Round	Amount	Active Investors	Investment Date
BETA Technologies, Inc.	Series C	318.00	Amazon (Venture Capital); Chaifetz Group LLC; Fidelity Management & Research Co. LLC; Fund At Hula; PTK Investments LLC; Qatar Holding LLC; RedBird Capital Partners Management LLC; TPG Growth LLC; United Therapeutics Corp.; UP Partners Management Co. LLC; Wealthing VC Club, Inc.	31-Oct-2024
Eni Plenitude SpA Società Benefit	Private Sh	222.54	Energy Infrastructure Partners AG	11-Nov-2024
ZE Energy SAS	Series B2	57.99	Amundi Transition Energétiqu SAS; Caisse Des Dépôts & Consignations (PRIVATE EQUITY); Demeter Ventures SA; EverWatt SAS; High-Tech Gründerfonds Management GmbH; Marguerite Adviser SA; Syndicat Énergies Vienne; Ze Way Invest	06-Nov-2024
Glow International	Series A	30.00	DeFi Alliance LLC; Framework Ventures management LLC; Hack VC Management Company LLC; HF0; Lattice Capital LLC; Protocol Labs, Inc.; Transpose Platform Management LLC; Union Square Ventures LLC	04-Nov-2024
Ecolectro, Inc.	Series A2	10.50	Caygan Capital Ltd.; Cornell University; DNX Ventures LLC; Energy Revolution Ventures; For Good Ventures LLC; Grupo Aval Acciones y Valores SA; Launch New York, Inc/VC; Narushisa Nakagawa; Netzero Capital; New Climate Ventures Management LLC; New York Ventures; Popular, Inc.; Starshot Capital; Starshot Capital BV; TechStars Central, LLC; Toyota Ventures LLC	14-Nov-2024
General Galactic Technologies Corp.	Seed Round3	8.00	BoxGroup Ventures LLC; Climate Capital Collective; Harpoon Management LLC; Impact First Ventures LLC; National Renewable Energy Laboratory; Pathbreaker Ventures LLC; Plug & Play Venture Group LLC; Refactor Capital Management LLC; Seraphim Management LLC; Unruly Capital LLC	12-Nov-2024
SerenySun Energies SAS	Private Sh	3.18	Andera Partners SCA; Luc Poyer, MBA; Myriam Maestroni, MBA	12-Nov-2024
California Catalysts	Series A4	3.00	Capella Partners LLC; Dolby Family Ventures LLC; Freeflow Venture Builders; FreeFlow Ventures, LLC; Hess Corp.; Jericho Energy Ventures, Inc.; MOL Switch LLC; Motus Ventures LLC; SAIC Capital; Tokyo Gas Co., Ltd.; VoLo Earth Ventures Management LLC; Yes VC Management Co LLC	23-Oct-2024

GOVECS AG	Series D	1.73	Companisto GmbH	28-Oct-2024
PT Investasi Hijau Selaras	Series A	0.00	Clime Capital Management Pte Ltd.	22-Oct-2024
Uravu Labs Pvt Ltd.	Series A	0.00	Anicut Capital LLP; AWE Funds LLC; Echo River Capital LLC; JITO Angel Network; Kaneko Tomoki; Peter Yolles, MBA; Rocketship VC LLC; Shigeru Sumimoto; Soren Schroder; Speciale Incept Advisors LLP; Spectrum Impact LLC; Venture Catalysts Pvt Ltd.; Verso Capital SARL; Vestas Wind Systems A/S; Z Nation Labs	21-Oct-2024

Source: Intro-act, FactSet

CLEANTECH INSTITUTIONAL INVESTOR LEAGUE

Chart 27: Cleantech Institutional Owners League (Current)

Rank	Investor Name	Invested in Cleantech ($)	Q/Q Change ($)	Change in Positions (#)	Cleantech as % of AUM
1	The Vanguard Group, Inc.	116,117,446,588	9,976,467,397	-1	10.8%
2	BlackRock Fund Advisors	59,732,921,979	4,346,628,477	2	5.6%
3	SSgA Funds Management, Inc.	39,759,432,762	842,164,178	2	3.7%
4	Fidelity Management & Research Co. LLC	26,815,166,172	5,076,441,890	-3	2.5%
5	Geode Capital Management LLC	22,931,934,510	2,632,082,604	8	2.1%
6	Capital Research & Management Co. (Global Investors)	18,796,011,137	2,309,940,217	3	1.7%
7	Nomura Asset Management Co., Ltd.	16,279,290,487	3,428,091,526	-6	1.5%
8	BlackRock Advisors (UK) Ltd.	15,434,637,872	1,230,233,619	9	1.4%
9	T. Rowe Price Associates, Inc. (Investment Management)	12,926,682,410	67,447,612	5	1.2%
10	Capital Research & Management Co. (International Investors)	12,056,865,590	1,837,140,660	3	1.1%
11	Capital Research & Management Co. (World Investors)	12,031,372,305	2,074,848,165	1	1.1%
12	JPMorgan Investment Management, Inc.	11,654,402,285	(819,871,374)	1	1.1%
13	BlackRock Investment Management (UK) Ltd.	10,090,981,170	367,615,152	31	0.9%
14	Charles Schwab Investment Management, Inc.	9,828,250,731	1,198,296,107	0	0.9%
15	Dimensional Fund Advisors LP	9,368,737,994	796,782,688	-1	0.9%
16	Northern Trust Investments, Inc.(Investment Management)	8,976,098,639	5,794,203	6	0.8%
17	Nikko Asset Management Co., Ltd.	8,443,054,247	394,808,675	0	0.8%
18	Massachusetts Financial Services Co.	8,254,823,422	(41,050,932)	1	0.8%
19	Wellington Management Co. LLP	7,512,260,772	(525,854,401)	3	0.7%
20	State Farm Investment Management Corp.	7,230,814,227	(207,456,743)	0	0.7%
21	Daiwa Asset Management Co. Ltd.	7,123,859,049	813,534,969	5	0.7%
22	Amundi Asset Management SA (Investment Management)	6,899,248,942	(451,604,012)	10	0.6%
23	Invesco Capital Management LLC	6,775,794,908	476,908,160	-2	0.6%
24	Legal & General Investment Management Ltd.	6,423,101,405	356,238,341	11	0.6%
25	Capital International Ltd.	6,017,100,461	1,293,784,509	2	0.6%
	Others	607,405,461,797	17,524,349,327	178	56.5%
	TOTAL	**1,074,885,751,861**	**55,003,761,014**	268	100%

Source: Intro-act, 13F Filings

Chart 28: Top 25 Cleantech Buyers (Q/Q)

Rank	Investor Name	Invested in Cleantech ($)	Q/Q Change ($)	Change in Positions (#)	Cleantech as % of AUM
1	Norges Bank Investment Management	11,974,433	(27,639,177,337)	151	0.0%
2	China Asset Management Co., Ltd.	1,316,208,436	(1,938,433,650)	80	1.9%
3	Bosera Asset Management Co., Ltd.	7,916,028	(694,414,473)	79	0.0%
4	China Universal Asset Management Co., Ltd.	166,919	(1,222,466,132)	75	0.0%
5	Harvest Fund Management Co., Ltd.	5,031,013	(1,337,389,187)	75	0.0%
6	E Fund Management Co., Ltd.	1,207,439,247	(884,948,698)	73	1.6%
7	HuaAn Fund Management Co., Ltd.	96,538,143	(1,207,500,797)	69	0.5%
8	OP Asset Management Ltd.	20,909,183	(271,099,148)	59	0.2%
9	RBC Dominion Securities, Inc.	699,987	(52,367,598)	57	0.0%
10	KBC Fund Management Ltd.	8,751,457	(249,914,686)	57	0.1%
11	Advisory Services Network LLC	37,644,132	1,082,670	50	0.8%
12	Irish Life Investment Managers Ltd.	533,658,851	44,932,133	49	3.0%
13	CCB Principal Asset Management Co., Ltd.	41,122,734	(307,502,816)	46	0.8%
14	The Caisse de depot et placement du Quebec	745,127,146	(1,643,442,684)	46	0.8%
15	Eastspring Investments (Singapore) Ltd.	85,546,871	(1,391,030)	42	0.4%
16	KBC Asset Management NV	716,863,499	14,828,314	38	1.6%
17	Danske Bank A/S (Investment Management)	536,712,006	5,506,161	37	2.0%
18	Connor, Clark & Lunn Investment Management Ltd.	1,176,229,930	711,697	33	4.8%
19	LGT Capital Partners AG (Investment Management)	58,969,882	(31,011,918)	33	0.8%
20	BlackRock Investment Management (UK) Ltd.	10,090,981,170	367,615,152	31	1.8%
21	ANIMA Sgr SpA	136,560,878	(211,285,126)	31	1.0%
22	CI Investments, Inc.	1,023,023,538	81,152,535	30	2.2%
23	Amundi Austria GmbH	132,125,301	(9,434,426)	30	2.9%
24	APG Asset Management NV	1,045,280,629	(1,158,850,394)	30	0.7%
25	Allspring Global Investments LLC	930,494,895	31,084,583	26	1.3%

Source: Intro-act, 13F Filings

Chart 29: Top 25 Cleantech Sellers (Q/Q)

Rank	Investor Name	Invested in Cleantech($)	Q/Q Change ($)	Change in Positions (#)	Cleantech as % of AUM
1	Russell Investments Canada Ltd.	57,273,934	57,273,934	-69	2.5%
2	Desjardins Securities, Inc.	180,691,260	180,691,260	-67	1.9%
3	Avior Wealth Management LLC	6,037,515	4,104,842	-51	0.3%
4	CIBC Private Wealth Advisors, Inc.	817,269,451	89,370,211	-39	1.6%
5	Shinhan Asset Management Co., Ltd.	36,038,414	36,038,414	-38	2.5%
6	Catalyst Capital Advisors LLC	17,204,465	17,204,465	-36	0.4%
7	Corecap Advisors LLC	6,900,331	3,721,143	-34	0.4%
8	Kron AS	13,942,982	13,942,982	-32	2.3%
9	Mitsubishi UFJ Asset Management Co., Ltd.	4,286,405,037	320,382,726	-30	2.8%
10	Cetera Investment Advisers LLC	250,911,993	192,776,352	-30	0.6%
11	Threadneedle Asset Management Ltd.	1,226,790,420	134,426,116	-29	1.7%
12	The Mather Group LLC	18,687,160	1,119,122	-29	0.3%
13	abrdn Investment Management Ltd.	2,506,837,280	1,083,417,786	-28	3.8%
14	I. G. Investment Management Ltd.	408,678,937	408,678,937	-28	3.7%
15	Hilltop National Bank (Investment Management)	3,301,778	3,301,778	-28	1.1%
16	YHB Investment Advisors, Inc.	14,067,098	1,356,479	-27	1.2%
17	The Putnam Advisory Co. LLC	328,858,229	275,148,911	-26	1.6%
18	BOCI-Prudential Asset Management Ltd.	97,154,518	83,383,258	-26	1.6%
19	Continuum Advisory LLC	9,029,758	529,946	-26	1.3%
20	Morgan Stanley & Co. International Plc	125,138,457	30,672,375	-24	1.6%
21	Canada Pension Plan Investment Board	4,661,213,219	2,635,711,677	-23	2.9%
22	Los Angeles Capital Management LLC	574,333,160	263,656,819	-23	1.5%
23	West Yorkshire Pension Fund	209,985,892	206,617,124	-23	1.4%
24	Rise Advisors LLC	886,317	620,069	-22	0.5%
25	Storebrand Asset Management AS	1,490,665,396	135,980,648	-21	3.3%

Source: Intro-act, 13F Filings

ETF SPOTLIGHT

Global X Cleantech ETF (CTEC)

Closing Price ($)	CUSIP	Expense Ratio	Inception
6.96	37954Y228	0.5	27/10/2020

AUM ($ million)	Shares Outstanding (#)	Fund Flows (1M, $)	Fund Flows (YTD, $)
37.08	5MM	-1 MM	-9 MM

Fund Description

The CTEC Fund is an environmentally focused investment opportunity, designed to mirror a global index of companies driving technological advancements that mitigate environmental harm. This fund commits at least 80% of its assets to securities within the underlying index, in addition to American Depositary Receipts (ADRs) and Global Depositary Receipts (GDRs) linked to those securities. The underlying index comprises businesses primarily dedicated to Cleantech, including renewable energy, energy efficiency, smart grid solutions, lithium-ion batteries, fuel cells, and pollution prevention. These companies are carefully selected based on their generation of at least 50% of revenues from Cleantech-related activities and must meet specific market capitalization and liquidity criteria. The fund aims to harness the growth potential of Cleantech, and any modifications to the 80% investment policy necessitate a 60-day prior notice to shareholders. With eligibility spanning countries such as the United States, Japan, China, the United Kingdom, and others, this fund offers diversification for eco-conscious investors seeking Cleantech exposure.

ETF Returns Annualized (As of 10/31/2024)

1 Year	3 Year	5 Year	Since Inception
-15.92%	--29.94%	-55.22%	-13.55%

ETF Returns Cumulative (As of 10/31/2024)

1 Month	3 Month	YTD	Since Inception
-10.02%	-8.27%	-30.3%	-49.23%

Top 10 Holdings (updated as of 11/19/24)

Sr No.	Holdings	Ticker	% Allocation	Market Value ($)
1	BLOOM ENERGY CORP- A	BE	9.93	3,282,891.25
2	NEXTRACKER INC-CL A	NXT	6.71	2,217,051.20
3	XINYI SOLAR HOLDINGS LTD	968 HK	5.7	1,883,057.00
4	FIRST SOLAR INC	FSLR	5.24	1,731,955.84
5	EB ENVIRONMENT	257 HK	5.2	1,719,524.12
6	NORDEX SE	NDX1 GR	5.17	1,709,073.95
7	FLUENCE ENERGY INC	FLNC	4.81	1,591,409.22
8	JOHNSON MATTHEY PLC	JMAT LN	4.6	1,520,036.79
9	SAMSUNG SDI CO LTD	006400 KS	4.51	1,492,340.43
10	QUANTUMSCAPE CORP	QS	4.11	1,357,250.40

Source: Intro-act

For more information on CTEC visit: https://www.globalxetfs.com/funds/ctec/

iShares Global Clean Energy ETF (ICLN)

Closing Price ($)	CUSIP	Expense Ratio	Inception
12.14	464288224	0.41	24/06/2008

AUM ($ Billion)	Shares Outstanding (#)	Fund Flows (1M, $)	Fund Flows (YTD, $)
1.91	140 MM	-127 MM	-773 MM

Fund Description

The ICLN Fund offers investors exposure to a carefully curated selection of global companies at the forefront of the clean energy sector. This fund seeks to replicate the performance of the S&P Global Clean Energy IndexTM, comprising approximately 100 clean energy-related companies. To be eligible for inclusion in this index, companies must meet specific criteria, including a minimum total market capitalization of $300 million, float-adjusted market capitalization of $100 million, and a median daily value traded of $3 million over six months, all on developed market exchanges. The index construction process involves rigorous screening, utilizing classifications such as the Global Industry Classification Standard (GICS) and FactSets Revere Business Industry Classification System (RBICS), along with environmental, social, and governance (ESG) considerations. Clean energy exposure scores are assigned based on a company's primary business, with additional evaluation of carbon-to-revenue footprint to ensure alignment with sustainable and environmentally responsible practices. The result is a diversified fund that offers investors an opportunity to participate in the global clean energy revolution while adhering to stringent ESG criteria.

ETF Returns Annualized (As of 10/31/2024)

1 Year	3 Year	5 Year	Since Inception
1.75%	-18.64%	5.34%	-6.16%

ETF Returns Cumulative (As of 10/31/2024)

YTD	1 Month	3 Months	Since Inception
-15.51%	-10.74%	-7.3%	-64.66%

Top 10 Holdings (updated as of 11/15/24)

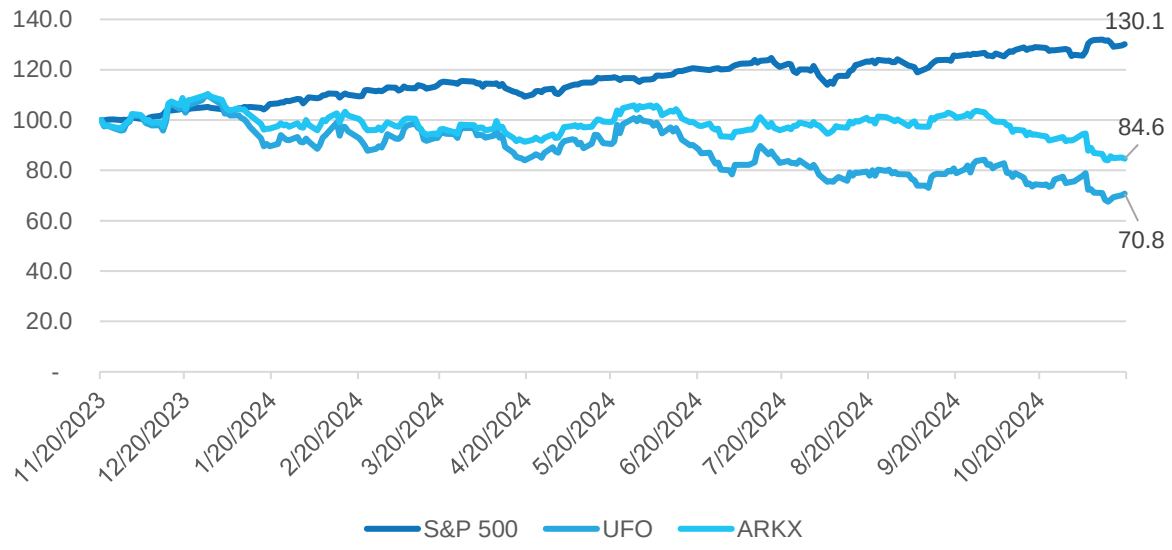
Sr No.	Holdings	Ticker	% Allocation	Market Value ($)
1	FIRST SOLAR INC	FSLR	7.6	128,035,641.12
2	IBERDROLA SA	IBE	6.47	109,020,860.42
3	SSE PLC	SSE	6.22	104,782,683.40
4	ENPHASE ENERGY INC	ENPH	4.44	74,839,994.32
5	VESTAS WIND SYSTEMS	VWS	4.39	74,042,702.89
6	CHINA YANGTZE POWER LTD A	600900	3.96	66,685,421.71
7	CHUBU ELECTRIC POWER INC	9502	3.95	66,532,616.91
8	EDP ENERGIAS DE PORTUGAL SA	EDP	3.93	66,189,480.18
9	SUZLON ENERGY LTD	SUZLON	3.18	53,628,341.63
10	EQUATORIAL ENERGIA SA	EQTL3	3.15	53,064,715.31

Source: Intro-act, FactSet

For more information on ICLN visit: https://www.ishares.com/us/products/239738/ishares-global-clean-energy-etf

ETF Performance vs. S&P 500

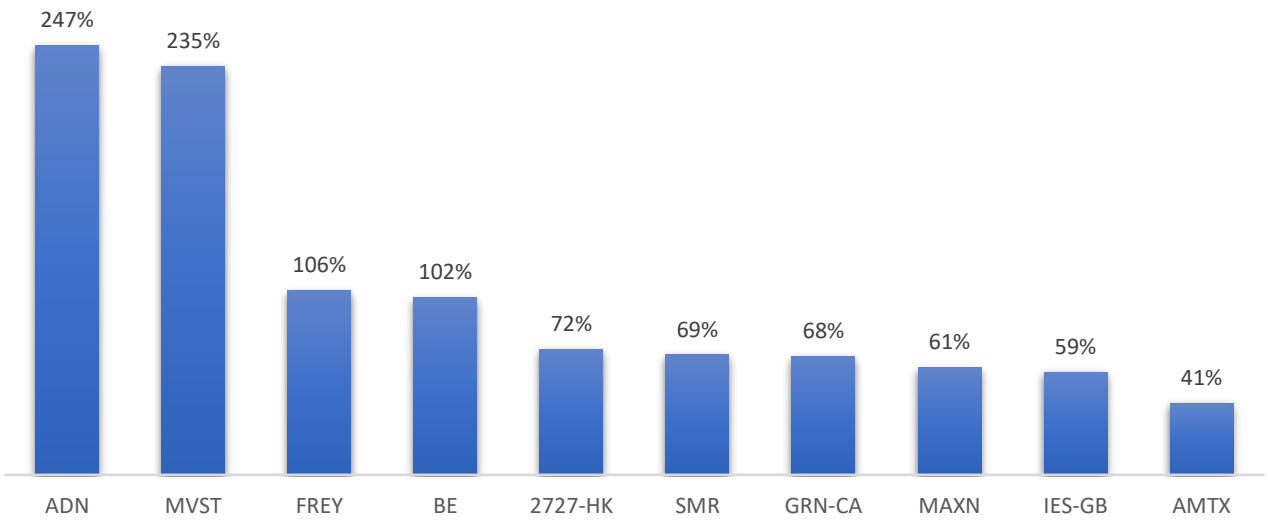
Chart 30: 12-month Indexed Returns of ICLN and CTEC vs. S&P 500



Source: Intro-act, FactSet, Data as of 11/19/2024.

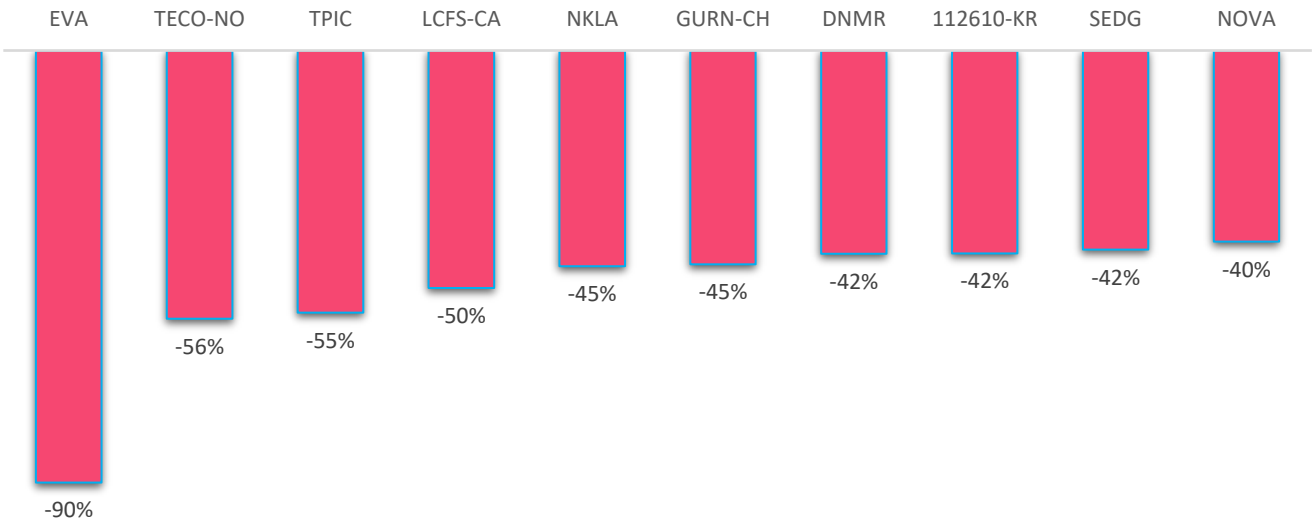
GAINERS AND LOSERS – CLEANTECH STOCKS

Chart 31: Top 10 M/M Cleantech Gainers



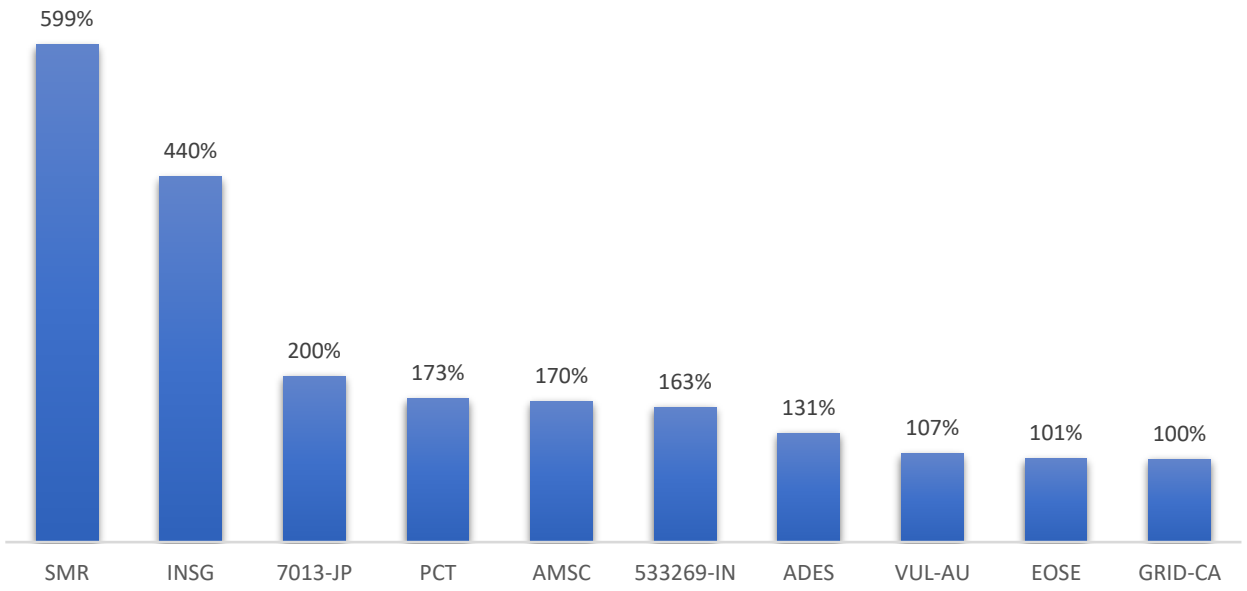
Source: Intro-act, FactSet, Data as on November 15, 2024

Chart 32: Top 10 M/M Cleantech Losers



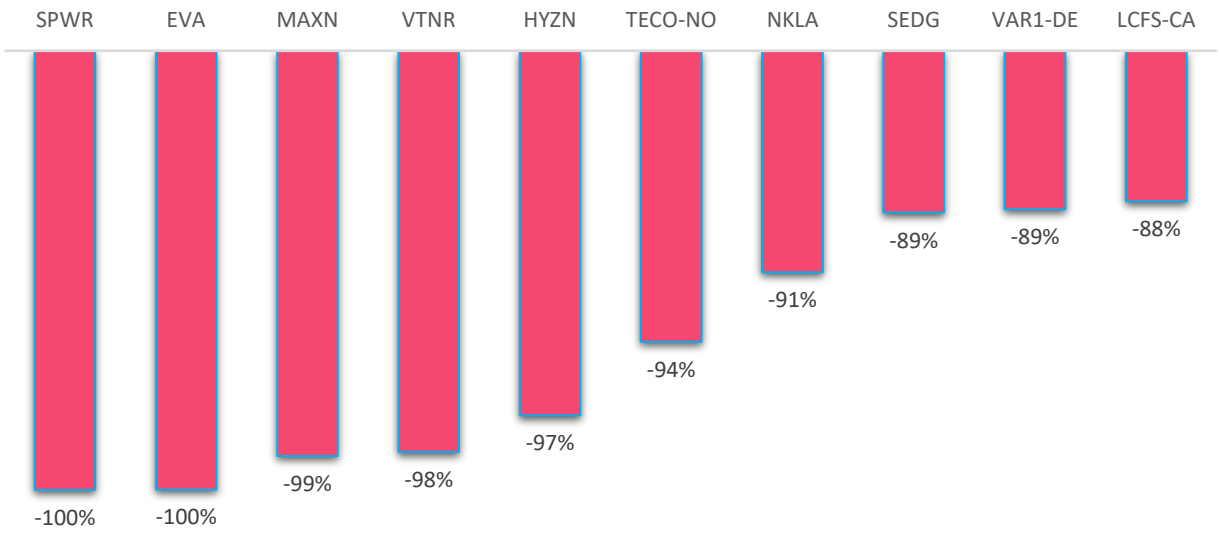
Source: Intro-act, FactSet, Data as on November 15, 2024

Chart 33: Top 10 YTD Cleantech Gainers



Source: Intro-act, FactSet. Data as on November 15, 2024.

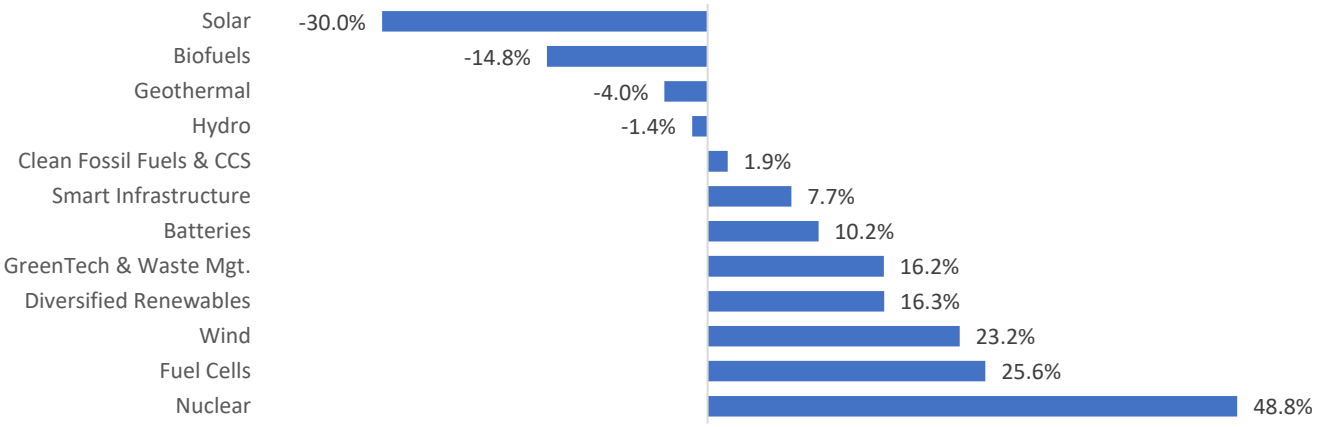
Chart 34: Top 10 YTD Cleantech Losers



Source: Intro-act, FactSet. Data as on November 15, 2024

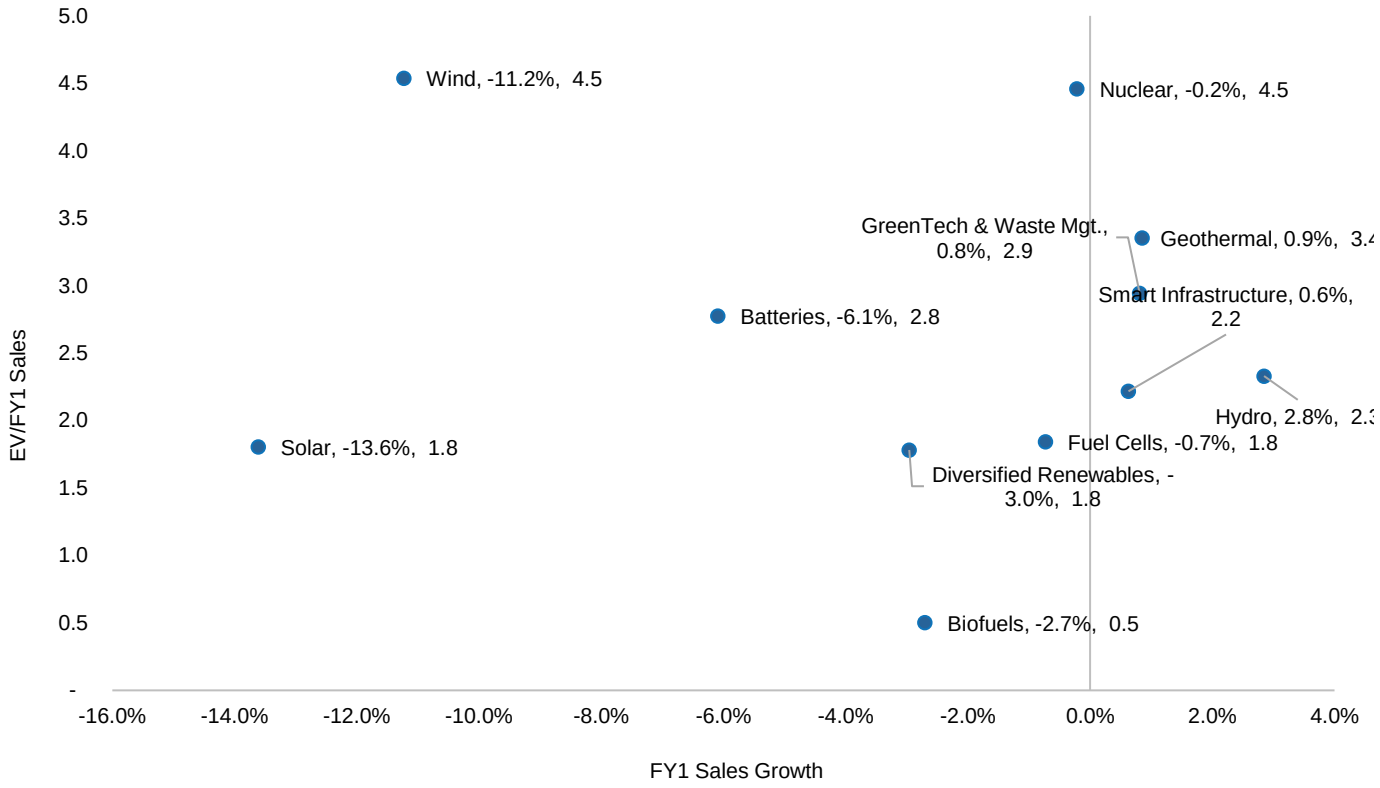
SEGMENT RETURN AND VALUATION

Chart 35: YTD Stock Price Returns by Segment



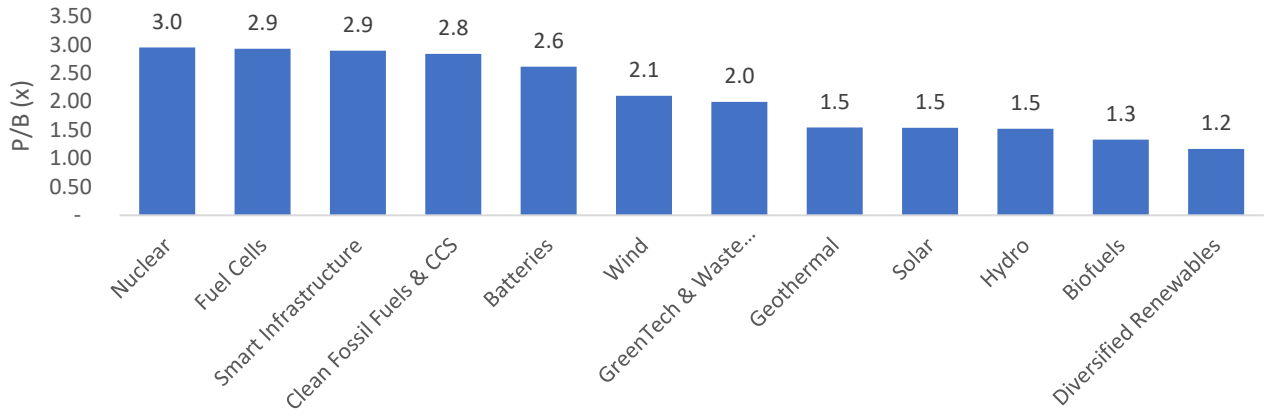
Source: Intro-act, FactSet. YTD Data as on November 15, 2024.

Chart 36: Cleantech Industry Growth and Valuation by Segment



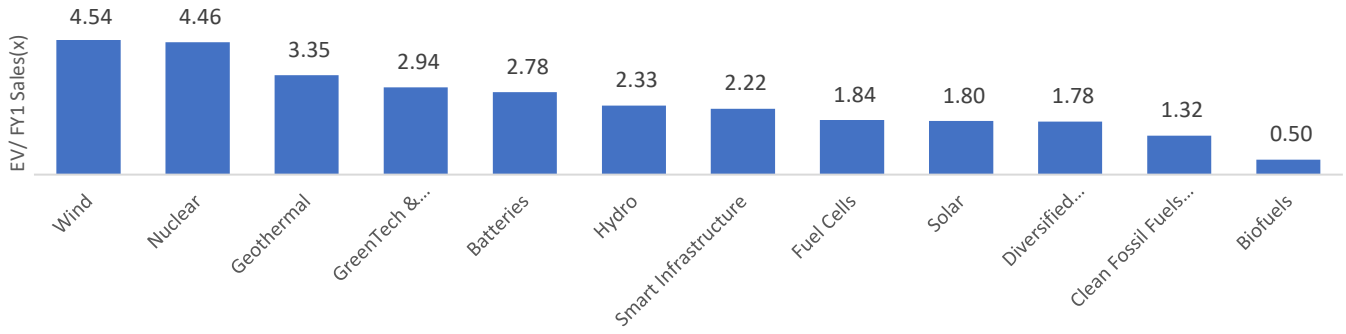
Source: Intro-act, FactSet, Data as on November 15, 2024. FY1 data is the first unreported financial year.

Chart 37: Price-to-Book Multiple by Segment



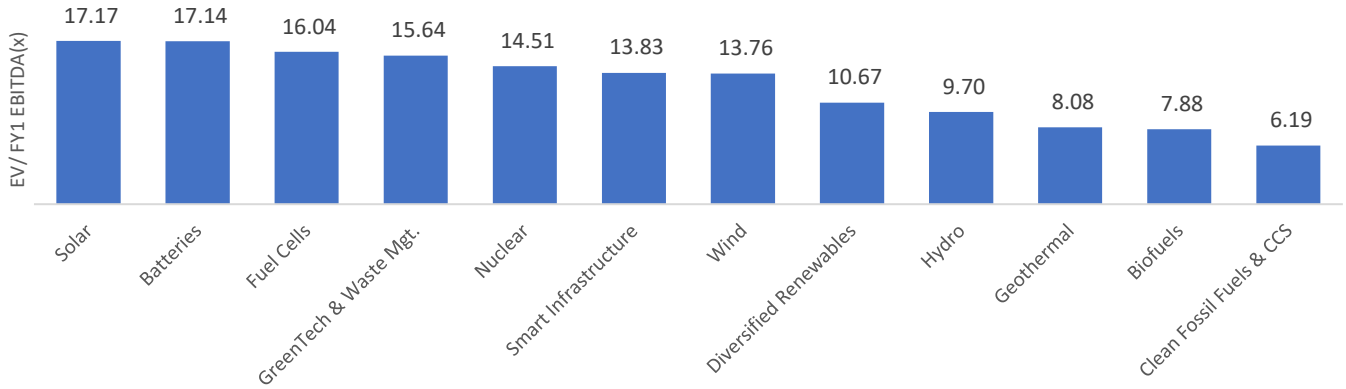
Source: Intro-act, FactSet. Data as on November 15, 2024.

Chart 38: EV to FY1 Sales Multiple by Segment



Source: Intro-act, FactSet. Data as on November 15, 2024. FY1 data is the first unreported financial year.

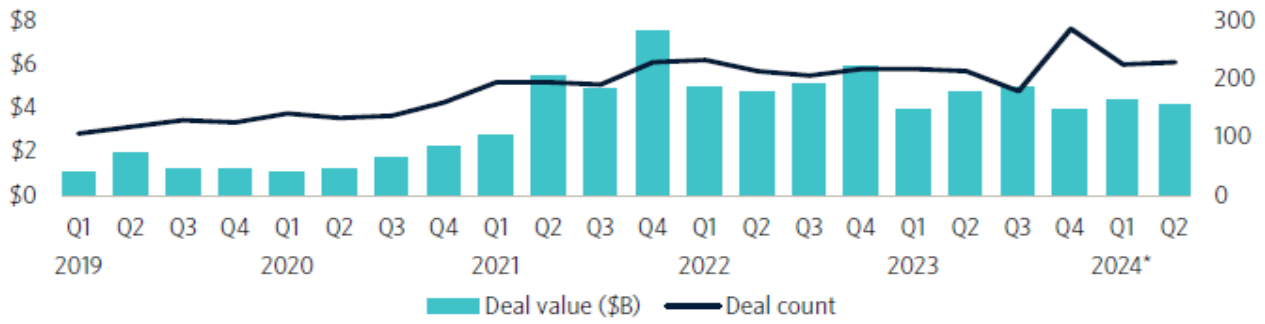
Chart 39: EV to FY1 EBITDA Multiple by Segment



Source: Intro-act, FactSet. Data as on November 15, 2024. FY1 data is the first unreported financial year.

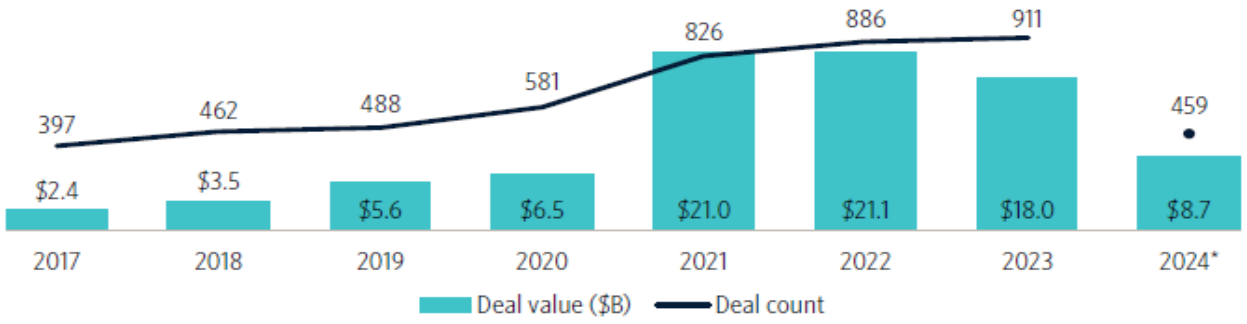
CLEANTECH CAPITAL MARKET TRENDS

Chart 40: Clean Energy VC Deal Activity by Quarter



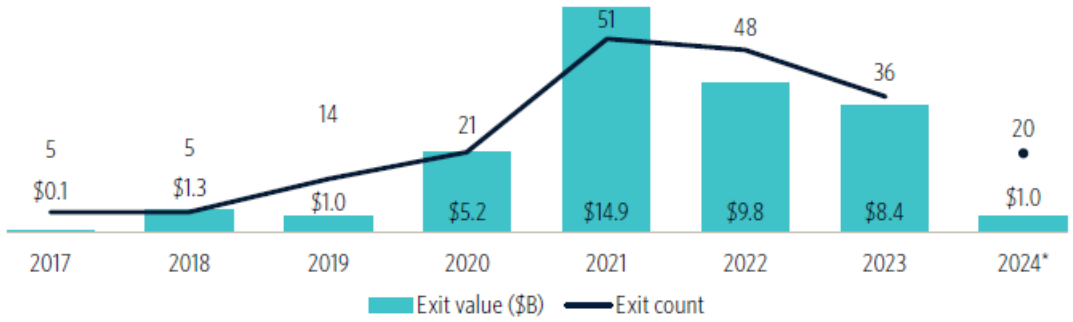
*Source: Intro-act, Pitchbook, *Data as of June 30, 2024.*

Chart 41: Clean Energy VC Deal Activity



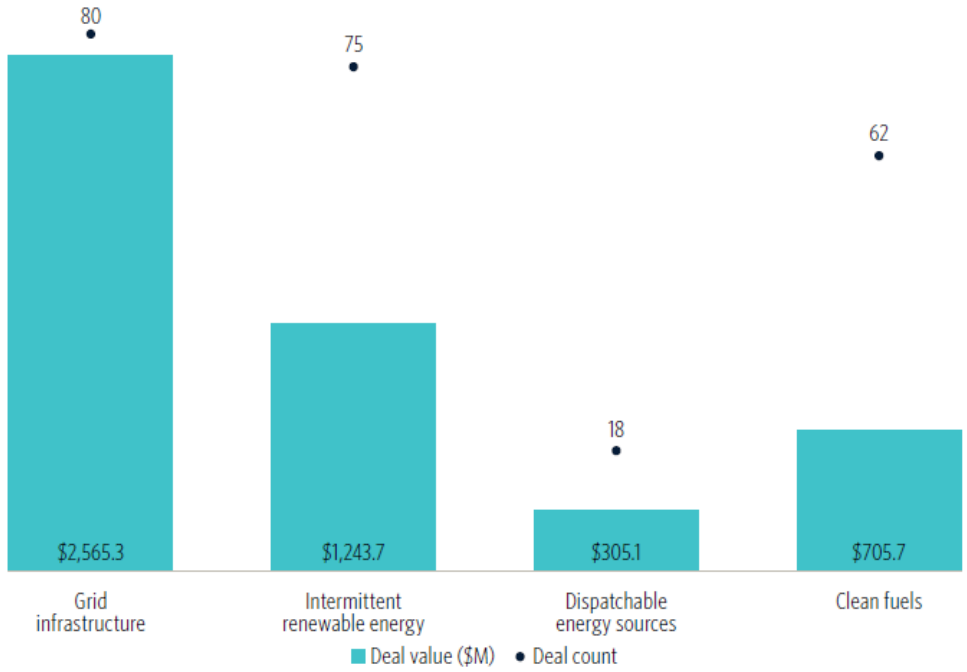
*Source: Intro-act, Pitchbook, *Data as of June 30, 2024.*

Chart 42: Clean Energy VC Exit Activity



*Source: Intro-act, Pitchbook, *Data as of June 30, 2024.*

Chart 43: Q224 Clean Energy VC Deal Activity by Segment



*Source: Intro-act, Pitchbook, *Data as of June 30, 2024*

Chart 44: Trailing 12-Month Clean Energy VC Deal Activity by Segment*

*Source: Intro-act, Pitchbook, *Data as of June 30, 2024*

Chart 45: Top-10 Clean Energy VC Deals in Q224

Company	Close date	Category	Deal value ($M)
EnerVenue	6/5/2024	Battery storage	308.1
Hysata	5/8/2024	Hydrogen	112.6
Rondo Energy	6/10/2024	Nonbattery storage	105
Xcimer	6/4/2024	Nuclear fusion	100
Type One Energy	4/29/2024	Nuclear fusion	50
M2X Energy	6/20/2024	Clean conventional fuels	40
Aether Fuels	6/27/2024	Waste to energy/fuel	34
LanzaJet	6/25/2024	Waste to energy/fuel	30
enspired	5/14/2024	Analytics & grid management	27.3
Molten Industries	6/20/2024	Hydrogen	25

*Source: Intro-act, Pitchbook, *Data as of June 30, 2024.*

Chart 46: Top VC-backed Clean Energy Companies by Total VC Raised to Date*

Company	VC ($M) raised to date	Category
Northvolt	6867.5	Battery storage
SVOLT	3231.3	Battery storage
Commonwealth Fusion Systems	1999	Nuclear fusion
TAE	1314.7	Nuclear fusion
Sila	1308.5	Battery storage
Form Energy	928	Battery storage
Hithium	909.5	Battery storage
Enerkem	893.9	Waste to energy/fuel
Nexamp	865.5	Solar photovoltaic, battery storage
TerraPower	865	Nuclear fission

*Source: Intro-act, *Data as of June 30, 2024.*

CLEANTECH SPAC ACTION

Chart 47: Cleantech SPACs (Searching)

S. No	SPAC Name	Ticker	Trust Value ($ Mn)	IPO Date	Completion Date
1	Global Lights Acquisition Corp	GLAC	69	11/14/2023	5/14/2025
2	Legato Merger Corp. III	LEGT	201	2/6/2024	5/6/2026
3	Nabors Energy Transition Corp. II	NETD	300	7/13/23	7/13/25
4	Spring Valley Acquisition Corp. II	SVII	230	10/12/2022	10/17/2025
5	EQV Ventures Acquisition Corp	EQV	350	8/6/2024	8/6/2026

Source: Intro-act, Boardroom Alpha

Chart 48: Cleantech SPACs (Business Combination Agreement Announced)

S.No	SPAC Name	Ticker	Target Company	EV ($ Mn)	Expected Closing
1	AltC Acquisition Corp.	ALCC	Oklo	850	3Q23
2	Aquaron Acquisition Corp.	AQU	Bestpath	1200	2Q24
3	Blue World Acquisition Corp	BWAQ	Vietnam Sunergy Cell Company	0	2Q24
4	ESGEN Acquisition Corp	ESAC	Sunergy	475	2Q23
5	Finnovate Acquisition Corp.	FNVT	Scage International Limited	1,000	2Q24
6	Focus Impact BH3 Acquisition Company	BHAC	XCF Global Capital	1,840	3Q24
7	Project Energy Reimagined Acquisition Corp.	PEGR	Heramba Electric	450	1Q24
8	Portage Fintech Acquisition Corp.	PFTA	Rbio Energy	350	3Q24
9	RMG Acquisition Corp. III	RMGC	H2B2 Electrolysis Technologies	0	3Q23
10	TMT Acquisition Corp.	TMTC	eLong Power Holding Limited	450	4Q24
11	TortoiseEcofin Acquisition Corp. III	TRTL	One Energy Enterprises LLC	300	3Q23
12	Roth CH Acquisition V Co.	ROCL	New Era Helium Corporation	90	1Q24
13	Inflection Point Acquisition Corp. II	IPXX	USA Rare Earth, LLC	870	4Q24

Source: Intro-act, Boardroom Alpha

Chart 49: Cleantech SPACs (Closed Deals Since January 2022)

S. No	SPAC Name	Ticker (Old)	DE-SPAC	Ticker	Closing Date
1	Decarbonization Plus Acquisition Corporation II.	DRCN	TRITIUM DCFC LTD	DCFC	13-Jan-22
2	Ivanhoe Capital Acquisition Corp	IVAN	SES Holdings	SES	3-Feb-22
3	CITIC Capital Acquisition Corp	CCAC	Quanergy Systems	QNGY	8-Feb-22
4	Novus Capital Corporation II	NXU	Energy Vault	NRGV	11-Feb-22
5	Spartan Energy Acquisition Corp.	SPAQ	Fisker Inc.	FSR	15-Mar-22
6	Poema Global Holdings Corp.	PPGH	GOGORO INC	GGR	4-Apr-22
7	Spring Valley Acquisition Corp	SV	Spring Valley Acquisition Corp	SMR	2-May-22
8	ArcLight Clean Transition Corp. II	ACTD	OPAL FuelsGroups	OPAL	21-Jul-22
9	Founder SPAC	FOUN	Rubicon Technologies	RBT	15-Aug-22
10	Kensington Capital Acquisition Corp. IV	KCAC	Amprius Technologies	AMPX	14-Sep-22
11	Chardan NexTech Acquisition 2 Corp	CNTQ	Dragonfly Energy Corp.	DFLI	7-Oct-22
12	Executive Network Partnering Corp	ENPC	Granite Ridge Resources	GRNT	24-Oct-22
13	ACE Convergence Acquisition Corp	ACEV	Tempo Automation	TMPO	22-Nov-22
14	Decarbonization Plus Acquisition Corp IV	DCRD	Hammerhead Resources	HHRS	23-Feb-23
15	Roth CH Acquisition IV Co.	ROCG	Tigo Energy Inc	TYGO	23-May-23
16	Rice Acquisition Corp. II	RONI	NET Power	NPWR	8-Jun-23
17	ROC Energy Acquisition Corp.	ROC	Drilling Tools International	DTI	20-Jun-23
18	Freedom Acquisition I Corp	FACT	Complete Solar, Inc.	CSLR	17Jul-23
19	TLG Acquisition One Corp.	TLGA	Electriq Power	ELIQ	31-Jul-23
20	Genesis Unicorn Capital Corp.	GENQ	Environmental Solutions Group Holdings Limited	ESGL	2-Aug-23
21	Perception Capital Corp. II	PCCT	Spectaire Inc.	SPEC	19-Oct-23
22	HNR Acquisition Corp	HNRA	Pogo Resources, LLC	HNRA	15-Nov-23
23	Nabors Energy Transition Corp.	NETC0	Vast	VSTE	18-Dec-23
24	Dune Acquisition Corporation	DUNE	Global Hydrogen Energy	HGAS	21-Dec-23
25	Clean Earth Acquisitions Corp.	CLIN	Alternus Energy Group Plc	ALCE	22-Dec-23
26	Nubia Brand International Corp.	NUBI	Honeycomb Battery Co.	STI	2-Feb-24
27	ESGEN Acquisition Corp	ESAC	Sunergy	ZEO	13-Mar-24
28	Power Digital Infrastructure Acquisition II Corp.	XPDB	Montana Technologies	AIRJ	14-Mar-24
29	Keyarch Acquisition Corp	KYCH	ZOOZ Power Ltd.	ZOOZ	4-Apr-24
30	Global Partner Acquisition Corp II	GPAC	Stardust Power, Inc.	SDST	9-July-24
31	Blue World Acquisition Corp.	BWAQ	Vietnam Sunergy Cell Company	TOYO	1-July-24

Source: Intro-act, Boardroom Alpha

CLEANTECH EVENTS CALENDAR

S. No.	Event	Place	Dates
1	London Climate Technology Show	London, UK	November 27, 2024
2	AIVP World Conference Cities & Ports	Lisbon, Portugal	November 27, 2024
3	Sustainable Action Conference 2024 (2.0)	Malaysia	November 21, 2024
4	European Sustainable Biofuels Summit 2024	Dusseldorf, Germany	November 27, 2024
5	8th Biomass & BioEnergy Asia	Ho Chi Minh City, Vietnam	November 27, 2024
6	Industrial Energy Green Transition	Tokyo, Japan	December 03, 2024
7	The 2nd Asia ESG-Procurement & Supply Chain Forum 2024	Singapore	December 12, 2024

Source: Intro-act, Multiple web sources

CLEANTECH COMP TABLE

						Price Performance			Sales				EBITDA		Book Value	
			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/EBITDA	Book/ Share	P/ Book
Peer Set																
Biofuels		Ticker		138,010	227,035			-15%	464,012	451,471	0.5 x	41,224	28,823	7.9 x		1.3 x
1	VALERO ENERGY CORP	VLO-US	140.2	44,373	52,675	32%	-14%	8%	144,766	130,109	0.4 x	14,580	6,615	8.0 x	79.77	1.8 x
2	ARCHER DANIELS MIDLAND CO	ADM-US	53.4	25,530	33,419	45%	-8%	-26%	93,935	87,815	0.4 x	6,185	4,498	7.4 x	45.97	1.2 x
3	WILMAR INTERL LTD	F34-SG	2.3	14,221	37,351	22%	-1%	-14%	67,155	68,993	0.5 x	3,565	3,587	10.4 x	3.24	0.7 x
4	BUNGE GLOBAL SA	BG-US	90.6	12,650	18,183	27%	-9%	-10%	59,540	53,035	0.3 x	3,531	2,497	7.3 x	72.59	1.2 x
5	DARLING INGREDIENTS INC	DAR-US	43.1	6,847	11,404	19%	-24%	-14%	6,788	5,794	2.0 x	1,612	1,118	10.2 x	28.62	1.5 x
6	ENERGY ABSOLUTE PC	EA-TH	0.2	621	2,503	734%	-48%	-87%	837	645	3.9 x	353	294	8.5 x	0.31	0.5 x
7	COSAN SA	CSAN3-BR	2.0	3,662	17,153	110%	-4%	-51%	7,930	27,886	0.6 x	4,493	3,213	5.3 x	1.85	1.1 x
8	SD GUTHRIE BERHAD	5285-MY	1.1	7,441	9,357	10%	-18%	11%	3,825	4,139	2.3 x	707	832	11.3 x	0.59	1.8 x
9	VALMET OYJ	VALMT-FI	23.8	4,393	5,604	41%	-4%	-17%	5,951	5,686	1.0 x	771	754	7.4 x	14.57	1.6 x
10	VERBIO SE	VBK-DE	13.0	828	909	196%	-13%	-61%	1,847	1,771	0.5 x	136	152	6.0 x	15.05	0.9 x
11	SAO MARTINHO SA	SMTO3-BR	4.3	1,425	2,667	68%	-4%	-29%	1,306	1,315	2.0 x	586	650	4.1 x	3.41	1.3 x
12	GREEN PLAINS INC	GPRE-US	10.9	705	1,180	161%	-5%	-57%	3,296	2,508	0.5 x	44	56	21.2 x	14.32	0.8 x
13	FIRST RESOURCES	EB5-SG	1.1	1,792	1,988	6%	-13%	7%	981	1,028	1.9 x	274	380	5.2 x	0.83	1.4 x
14	COFCO BIOTECH	000930-CN	0.8	1,481	2,075	22%	-22%	-15%	2,812	-	-	6	-	-	0.79	1.0 x

15	ANDERSONS INC	ANDE-US	48.3	1,644	1,905	27%	-13%	-16%	14,750	10,859	0.2 x	405	337	5.7 x	39.00	1.2 x
16	MONTAUK RENEWABLES	MNTK-US	4.1	591	609	137%	-18%	-54%	175	206	3.0 x	48	64	9.5 x	1.93	2.1 x
17	ADECOAGRO S A	AGRO-US	11.4	1,184	2,163	10%	-23%	2%	1,442	1,480	1.5 x	470	482	4.5 x	13.85	0.8 x
18	RAIZEN SA	RAIZ4-BR	0.4	569	12,418	108%	0%	-49%	42,446	41,210	0.3 x	3,028	2,677	4.6 x	0.36	1.2 x
19	GREENVOLT ENERGI	GVOLT-PT	8.7	1,418	2,839	8%	-17%	-4%	370	637	4.5 x	115	211	13.5 x	3.52	2.5 x
20	CROPENERGIES AG	CE2-DE	14.1	1,232	1,171	7%	-48%	11%	-	-	-	-	-	-	9.61	1.5 x
21	LONGYAN ZHUOYUE	688196-CN	3.8	457	439	57%	-33%	-19%	388	574	0.8 x	18	-	-	3.20	1.2 x
22	SHANDONG MINHE ANI	002234-CN	1.2	426	531	60%	-17%	-28%	288	312	1.7 x	(31)	(12)	-	0.83	1.5 x
23	REX AMERICAN RES	REX-US	46.4	815	558	31%	-23%	-2%	833	627	0.9 x	-	85	6.6 x	30.72	1.5 x
24	ENVIVA INC	EVA-US	0.0	0	1,591	92490 0%	-50%	-100 %	-	-	-	-	-	-	(1.51)	0.0 x
25	AUDAX RENOVABLES	ADX-ES	1.8	803	1,156	23%	-25%	24%	2,487	2,170	0.5 x	106	126	9.2 x	0.51	3.5 x
26	JALLES MACHADO SA	JALL3-BR	0.9	277	820	88%	-3%	-43%	352	415	2.0 x	234	273	3.0 x	1.20	0.8 x
27	HENAN BCCY ENVIRON	300614-CN	1.5	244	327	115%	-28%	-42%	-	-	-	-	-	-	1.32	1.2 x
28	DALMIA BHARAT	500097-IN	4.9	396	503	42%	-17%	-1%	347	427	1.2 x	49	60	8.5 x	4.46	1.1 x
29	CAMLIN FINE	532834-IN	1.4	229	298	26%	-30%	-16%	194	222	1.3 x	14	20	14.8 x	0.49	2.8 x
30	GEVO INC	GEVO-US	1.4	342	166	137%	-66%	23%	17	16	10.4 x	(44)	(46)	-	2.11	0.7 x
31	TUNAS BARU LAMPUNG	TBLA-ID	0.0	240	1,001	34%	-10%	-10%	-	1,001	1.0 x	-	139	7.2 x	0.09	0.5 x
32	ALTO INGREDIENTS	ALTO-US	1.4	105	189	119%	-14%	-48%	1,223	952	0.2 x	21	0	1,226.2 x	3.44	0.4 x
33	DHAMPUR SUGAR MILL	500119-IN	2.1	135	244	63%	-4%	-32%	261	242	1.0 x	32	25	9.7 x	1.98	1.0 x

34	AEMETIS INC	AMTX-US	3.8	190	617	84%	-45%	-27%	187	305	2.0 x	(22)	(9)	-	(5.41)	-0.7 x
35	DHAMPUR BIO	543593-IN	1.5	99	221	38%	-9%	-19%	-	-	-	-	-	-	1.74	0.9 x
36	CODEXIS INC	CDXS-US	3.9	316	285	27%	-52%	27%	70	65	4.4 x	(48)	(41)	-	0.90	4.3 x
37	LGI LIMITED	LGI-AU	2.0	178	193	4%	-39%	47%	23	24	8.1 x	10	11	16.9 x	0.39	5.1 x
38	AGRIA GROUP	AGH-BG	10.6	72	260	26%	-2%	-7%	-	-	-	-	-	-	24.91	0.4 x
39	COMSTOCK INC	LODE-US	0.3	66	56	131%	-60%	-43%	1	2	26.5 x	-	-	-	0.33	0.9 x
40	FERMENTALG	FALG-FR				-!	-!	-!	-	-	-!	-	-	-		-!
41	GREENLANE	GRN-CA	0.1	13	7	41%	-49%	-14%	43	-	-	(8)	-	-	0.10	0.8 x

			Share Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	Price Performance			Sales		EV/Sales	EBITDA		EV/EBITDA	Book Value	P/Book
						% to High	% to Low	% YTD	FY0	FY1		FY0	FY1		Book/Share	
Peer Set																
Clean Fossil Fuels & CCS		Ticker		149,593	190,746			2%	144,563	145,026	1.3 x	33,652	30,821	6.2 x		2.8 x
42	AIR PRODS & CHEMS	APD-US	317.1	70,496	84,299	5%	-33%	16%	12,101	12,354	6.8 x	5,035	5,302	15.9 x	67.94	4.7 x
43	ENI SPA	ENI-IT	14.9	48,775	75,572	16%	-3%	-10%	100,947	99,264	0.8 x	22,530	20,039	3.8 x	17.42	0.9 x
44	SHANXI LU'AN ENVIR	601699-CN	2.1	6,209	3,602	91%	-13%	-33%	5,958	4,928	0.7 x	1,999	1,208	3.0 x	2.20	0.9 x
45	HENAN SHENHUO COAL	000933-CN	2.5	5,630	7,915	40%	-27%	6%	5,212	5,393	1.5 x	1,488	1,154	6.9 x	1.36	1.8 x
46	CNOOC ENERGY	600968-CN	0.6	6,003	5,326	20%	-38%	47%	6,811	7,514	0.7 x	820	909	5.9 x	0.36	1.6 x
47	CALIFORNIA RES	CRC-US	56.6	5,188	5,265	7%	-24%	3%	2,801	2,881	1.8 x	866	984	5.3 x	39.13	1.4 x
48	KEDA INDUSTRIAL GR	600499-CN	1.2	2,209	2,813	51%	-21%	-21%	1,343	1,564	1.8 x	350	327	8.6 x	0.85	1.4 x
49	AKER SOLUTIONS ASA	AKSO-NO	4.5	2,208	1,173	14%	-27%	11%	3,397	4,707	0.2 x	122	413	2.8 x	3.80	1.2 x
50	GUIZHOU PANJIANG R	600395-CN	0.8	1,621	3,506	25%	-13%	-13%	1,298	1,203	2.9 x	232	222	15.8 x	0.72	1.0 x
51	TECNICAS REUNIDAS	TRE-ES	11.3	909	770	29%	-33%	26%	4,475	4,737	0.2 x	194	222	3.5 x	7.69	1.5 x
52	AKER CARBON CA	ACC-NO	0.5	319	238	157%	-6%	-60%	149	193	1.2 x	(19)	(13)	-	0.82	0.6 x
53	TIDEWATER	LCFS-CA	0.7	26	267	848%	-20%	-88%	72	287	0.9 x	34	54	4.9 x	3.09	0.2 x

						Price Performance			Sales			EBITDA			Book Value	
			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set																
Diversified Renewables		Ticker		399,342	761,811			16%	440,534	427,497	1.8 x	71,440	71,391	10.7 x		1.2 x
54	ENBRIDGE INC	ENB-CA	42.2	91,892	164,783	3%	-22%	17%	32,551	32,523	5.1 x	12,223	13,069	12.6 x	19.42	2.2 x
55	HITACHI	6501-JP	25.5	118,230	123,542	11%	-47%	78%	62,089	61,414	2.0 x	7,735	8,932	13.8 x	7.86	3.2 x
56	ENGIE	ENGI-FR	16.2	39,510	83,763	12%	-14%	-7%	89,257	83,498	1.0 x	16,216	15,950	5.3 x	12.77	1.3 x
57	NIDEC CORPORATION	6594-JP	18.2	21,689	23,948	41%	-3%	-7%	15,148	16,758	1.4 x	1,904	2,478	9.7 x	9.13	2.0 x
58	RWE AG	RWE-DE	33.6	25,022	35,492	38%	-10%	-26%	31,103	25,670	1.4 x	9,122	5,739	6.2 x	48.38	0.7 x
59	CHUBU ELEC POWER	9502-JP	11.0	8,319	28,656	30%	-4%	-15%	23,042	22,332	1.3 x	3,402	2,311	12.4 x	23.78	0.5 x
60	ZHEJIANG ZHENENG	600023-CN	0.8	10,662	16,681	36%	-24%	22%	13,244	13,475	1.2 x	2,302	2,550	6.5 x	0.76	1.1 x
61	BROOKFIELD RENEWABLE	BEP-US	25.2	7,179	79,135	17%	-21%	-5%	5,038	5,966	13.3 x	2,130	2,374	33.3 x	15.36	1.6 x
62	TOKYO ELEC POWER	9501-JP	3.7	6,022	47,223	93%	-5%	-28%	43,883	44,359	1.1 x	-	-	-	13.28	0.3 x
63	FUJI ELECTRIC CO.	6504-JP	55.6	8,295	8,494	25%	-27%	35%	7,014	7,280	1.2 x	993	1,116	7.6 x	28.55	1.9 x
64	MERCURY NZ LTD	MCY-NZ	3.9	5,456	6,622	14%	-8%	-7%	2,106	2,071	3.2 x	539	494	13.4 x	2.07	1.9 x
65	BHARAT HEAVY ELECT	500103-IN	2.7	9,229	9,551	52%	-38%	14%	2,871	3,753	2.5 x	50	206	46.5 x	0.83	3.2 x
66	SOJITZ CORPORATION	2768-JP	19.8	4,459	10,573	44%	-4%	-9%	15,316	16,482	0.6 x	835	1,079	9.8 x	28.99	0.7 x
67	ULTRAPAR	UGPA3-BR	3.3	3,721	5,682	90%	-5%	-38%	25,374	22,546	0.3 x	1,215	964	5.9 x	2.33	1.4 x
68	HUBEI ENERGY GR	000883-CN	0.7	4,423	10,998	28%	-19%	15%	2,576	2,920	3.8 x	797	1,037	10.6 x	0.75	0.9 x
69	IHI CORPORATION	7013-JP	58.8	9,094	12,228	6%	-70%	207%	8,501	10,519	1.2 x	(12)	1,302	9.4 x	17.62	3.3 x

70	CIA ENERG MG-CEMIG	CMIG4-BR	2.1	3,984	7,599	6%	-21%	15%	7,011	6,165	1.2 x	1,578	1,518	5.0 x	1.69	1.2 x
71	ELEC POWER DEV	9513-JP	17.0	3,119	13,895	5%	-13%	5%	8,070	7,918	1.8 x	1,438	1,370	10.1 x	47.17	0.4 x
72	ENCAVIS AG	ECV-DE	17.9	2,891	5,159	9%	-35%	4%	505	488	10.6 x	354	324	15.9 x	6.43	2.8 x
73	CENTRAIS ELET BRAS	ELET6-BR	7.0	1,965	24,351	44%	-3%	-28%	7,405	6,829	3.6 x	3,499	3,639	6.7 x	8.76	0.8 x
74	TERNA ENERGY SA	TENERGY-GR	20.8	2,465	3,346	5%	-23%	19%	351	-	-	189	-	-	4.15	5.0 x
75	TAURON POLSKA	TPE-PL	0.9	1,504	5,096	29%	-20%	-10%	11,740	8,823	0.6 x	1,452	1,362	3.7 x	2.43	0.4 x
76	ROMANDE ENERGIE	REHN-CH	48.4	1,380	1,490	38%	-4%	-18%	998	914	1.6 x	220	149	10.0 x	96.37	0.5 x
77	RENEW ENERGY	RNW-US	5.4	1,373	9,479	45%	-4%	-30%	1,158	1,169	8.1 x	831	892	10.6 x	3.39	1.6 x
78	GEK TERNA S.A	GEKTERNA-GR	18.4	1,907	3,168	9%	-25%	32%	3,749	3,122	1.0 x	628	445	7.1 x	12.21	1.5 x
79	FIRST GEN	FGEN-PH	0.3	1,038	2,456	26%	-4%	-8%	2,542	2,516	1.0 x	820	974	2.5 x	0.90	0.3 x
80	KEPCO PLANT	051600-KR	31.9	1,435	1,248	8%	-25%	21%	1,149	1,134	1.1 x	186	197	6.3 x	20.85	1.5 x
81	BCPG PCL	BCPG-TH	0.2	477	1,147	65%	-11%	-38%	140	127	9.1 x	106	90	12.7 x	0.28	0.6 x
82	SHANGHAI ELECTRIC	2727-HK	0.4	1,134	11,778	45%	-55%	86%	15,883	15,826	0.7 x	735	683	17.2 x	0.49	0.8 x
83	ABO WIND AG	AB9-DE	40.8	376	679	62%	-6%	-10%	326	364	1.9 x	64	68	9.9 x	23.43	1.7 x
84	PETROVIETNAM	NT2-VN	0.7	208	178	52%	0%	-29%	259	214	0.8 x	47	28	6.3 x	0.57	1.3 x
85	AKER HORIZONS	AKH-NO	0.2	117	1,640	201%	-9%	-61%	-	-	-	-	-	-	0.49	0.3 x
86	ENER INNOV	EIDF-ES	4.1	245	279	231%	-11%	-40%	206	141	2.0 x	(11)	18	15.7 x	0.04	113.1 x
87	RENEWABLE JAPAN	9522-JP	4.1	123	956	142%	-20%	-51%	223	133	7.2 x	-	82	11.7 x	2.52	1.6 x
88	ALTIUS RENEWABLE	ARR-CA	8.4	261	194	4%	-41%	41%	8	11	16.9 x	4	8	25.7 x	6.45	1.3 x

89	CLEARVISE AG	ABO-DE	1.8	139	303	32%	-6%	-22%	48	39	7.7 x	35	25	12.3 x	2.33	0.8 x

						Price Performance			Sales				EBITDA		Book Value	
			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set																
Batteries		Ticker		349,810	403,030			10%	154,586	145,171	2.8 x	19,058	23,519	17.1 x		2.6 x
90	CATL	300750-CN	36.7	161,677	155,055	16%	-47%	60%	55,710	51,902	3.0 x	9,841	12,079	12.8 x	7.56	4.9 x
91	LG ENERGY SOLUTION	373220-KR	265.3	62,070	74,336	33%	-15%	-20%	25,254	18,703	4.0 x	3,202	2,606	28.5 x	62.61	4.2 x
92	ORSTED A/S	ORSTED-DK	55.6	23,370	34,781	22%	-21%	0%	11,876	10,976	3.2 x	2,700	4,267	8.2 x	22.86	2.4 x
93	LUCID GROUP INC	LCID-US	2.0	6,053	4,549	164%	-4%	-52%	595	775	5.9 x	(2,609)	(2,381)	-	1.15	1.8 x
94	SOLAREDGE TECH.	SEDG-US	10.6	617	648	869%	-4%	-89%	2,977	942	0.7 x	346	(1,006)	-	16.72	0.6 x
95	GENERAC	GNRC	181.8	10,818	12,164	8%	-40%	41%	4,023	4,303	2.8 x	638	774	15.7 x	40.50	4.5 x
96	LITTELFUSE INC	LFUS-US	241.1	5,983	6,344	14%	-8%	-10%	2,363	2,186	2.9 x	529	416	15.3 x	103.69	2.3 x
97	WUXI LEAD INTELLIG	300450-CN	3.2	4,988	5,307	26%	-43%	-11%	2,292	1,870	2.8 x	341	218	24.3 x	1.08	2.9 x
98	CHINA SHIPBUILDI.G	600482-CN	3.2	7,220	6,019	23%	-34%	26%	6,224	7,123	0.8 x	286	1,302	4.6 x	2.43	1.3 x
99	CNGR ADVANCED	300919-CN	5.7	5,324	8,834	20%	-34%	16%	4,730	5,537	1.6 x	538	589	15.0 x	3.04	1.9 x
100	ENERSYS	ENS-US	96.1	3,828	4,384	17%	-10%	-5%	3,582	3,690	1.2 x	516	540	8.1 x	46.17	2.1 x
101	SHENZHEN KEDALI	002850-CN	14.9	4,028	4,179	14%	-48%	25%	1,452	1,706	2.4 x	305	338	12.4 x	5.80	2.6 x
102	GOTION HIGH-TECH	002074-CN	3.2	4,310	10,536	12%	-31%	8%	4,363	5,136	2.1 x	401	564	18.7 x	2.00	1.6 x
103	VOLTRONIC POWER	6409-TW	58.0	5,092	4,853	29%	-28%	5%	600	720	6.7 x	146	168	28.8 x	3.15	18.5 x
104	WUXI AUTOWELL	688516-CN	7.0	2,199	2,446	66%	-34%	-23%	873	1,333	1.8 x	222	310	7.9 x	2.00	3.5 x
105	FARASIS ENERGY	688567-CN	1.7	2,104	2,366	61%	-33%	-25%	2,270	1,954	1.2 x	(91)	67	35.1 x	1.16	1.5 x

106	FLUENCE ENERGY INC	FLNC	19.3	2,495	2,180	44%	-34%	-19%	2,218	2,748	0.8 x	(61)	60	36.5 x	3.27	5.9 x
107	ZHUHAI COSMX	688772-CN	2.4	2,677	3,262	33%	-35%	-23%	1,582	1,694	1.9 x	293	238	13.7 x	0.88	2.7 x
108	BEIJING EASPRING	300073-CN	6.5	3,170	2,598	22%	-43%	21%	2,093	1,152	2.3 x	322	145	17.9 x	3.65	1.8 x
109	HUNAN CHANGYUAN	688779-CN	0.8	1,638	1,845	43%	-31%	-18%	1,481	1,170	1.6 x	15	70	26.3 x	0.54	1.6 x
110	ZHEJIANG HANGKE	688006-CN	2.9	1,774	1,488	20%	-34%	-11%	553	511	2.9 x	129	105	14.2 x	1.21	2.4 x
111	GUANGZHOU GREAT	300438-CN	4.7	2,367	2,849	18%	-51%	18%	957	966	2.9 x	87	145	19.7 x	1.52	3.1 x
112	SHENZHEN SENIOR	300568-CN	1.6	1,897	2,622	43%	-39%	-28%	416	516	5.1 x	167	177	14.8 x	1.02	1.5 x
113	KEHUA DATA CO	002335-CN	3.4	1,578	1,986	34%	-32%	-12%	1,123	1,253	1.6 x	186	166	12.0 x	1.40	2.4 x
114	ZHEJIANG NARADA	300068-CN	2.6	2,168	3,509	36%	-61%	45%	2,024	1,846	1.9 x	109	178	19.7 x	0.89	2.9 x
115	ANKER INNOVATIONS	300866-CN	11.5	3,407	5,648	24%	-42%	20%	2,416	3,288	1.7 x	286	322	17.5 x	2.19	5.3 x
116	SUNNOVA ENERGY	NOVA-US	3.8	469	9,055	336%	-20%	-75%	721	846	10.7 x	275	650	13.9 x	14.24	0.3 x
117	W-SCOPE CHUNGJU	393890-KR	8.9	301	568	367%	-4%	-74%	228	300	1.9 x	72	68	8.4 x	21.49	0.4 x
118	V-GUARD INDUSTRIES	532953-IN	4.8	2,090	2,125	43%	-29%	37%	575	661	3.2 x	51	65	32.9 x	0.53	9.1 x
119	SINENG ELECTRIC CO	300827-CN	6.5	2,329	2,481	16%	-60%	52%	681	895	2.8 x	65	93	26.6 x	0.80	8.1 x
120	GUIZHOU ZHENHUA E-	688707-CN	2.0	1,014	1,143	68%	-44%	-31%	950	274	4.2 x	57	(29)	-	1.27	1.6 x
121	PEOPLE AND TECH.	137400-KR	29.4	699	769	120%	-11%	-23%	404	733	1.0 x	62	117	6.6 x	16.64	1.8 x
122	NIKOLA CORP	NKLA-US	2.3	142	151	1374%	-19%	-91%	36	111	1.4 x	(540)	(444)	-	6.86	0.3 x
123	VARTA AG	VAR1-DE	2.6	112	734	897%	-68%	-89%	887	880	0.8 x	23	64	11.4 x	4.46	0.6 x
124	FREYR BATTERY	FREY-US	2.1	295	95	36%	-57%	12%	0	-	-	(75)	-	-	3.83	0.5 x

125	SHENZHEN CLICK	002782-CN	1.7	861	855	26%	-36%	-11%	-	-	-	-	-	-	0.55	3.2 x
126	ENCHEM CO LTD	348370-KR	95.8	1,992	2,152	204%	-53%	55%	-	-	-	-	-	-	20.26	4.7 x
127	LI-CYCLE	LICY-US	2.1	48	502	649%	-41%	-56%	18	28	17.9 x	(149)	(92)	-	12.73	0.2 x
128	HNAC TECHNOLOGY	300490-CN	1.4	552	689	32%	-39%	-14%	-	-	-	-	-	-	0.94	1.5 x
129	GOGORO INC	GGR-US	0.5	133	356	482%	-17%	-81%	350	306	1.2 x	29	40	9.0 x	0.91	0.5 x
130	MICROVAST	MVST-US	0.7	231	347	116%	-79%	-49%	307	358	1.0 x	(20)	(21)	-	1.58	0.5 x
131	ZHEJIANG POWER	688184-CN	2.1	126	426	49%	-27%	-20%	-	202	2.1 x	-	(44)	-	2.23	0.9 x
132	CALB GROUP CO LTD.	3931-HK	1.6	957	9,544	57%	-10%	-31%	3,736	4,399	2.2 x	379	632	15.1 x	2.72	0.6 x
133	FUJIAN NEBULA	300648-CN	3.8	560	683	20%	-52%	1%	-	-	-	-	-	-	0.78	4.9 x
134	ENERGY VAULT	NRGV-US	1.5	222	110	84%	-47%	-37%	342	70	1.6 x	(62)	(58)	-	1.18	1.2 x
135	W-SCOPE CO	6619-JP	2.1	119	974	235%	-3%	-66%	322	357	2.7 x	77	88	11.0 x	7.02	0.3 x
136	EOS ENERGY	EOSE-US	2.2	477	618	67%	-72%	101%	16	21	29.0 x	(133)	(133)	-	(2.64)	-0.8 x
137	ALLIS ELECTRIC	1514-TW	3.4	906	946	65%	-50%	42%	301	291	3.3 x	33	33	28.3 x	0.65	5.2 x
138	VITZROCELL CO LTD	082920-KR	14.6	334	247	18%	-22%	18%	131	144	1.7 x	36	42	5.9 x	8.51	1.7 x
139	VULCAN ENERGY	VUL-AU	4.0	756	695	5%	-69%	107%	7	8	92.1 x	(38)	(43)	-	1.61	2.5 x
140	NHOA	NHOA-FR	1.3	364	331	6%	-58%	99%	295	-	-	(18)	-	-	0.94	1.4 x
141	LEOCH INTL	842-HK	0.2	273	794	19%	-29%	26%	1,864	-	-	-	-	-	0.45	0.4 x
142	FORSEE POWER	FORSE-FR	0.7	49	92	351%	-21%	-76%	183	161	0.6 x	(7)	1	91.2 x	0.86	0.8 x
143	LARGO INC	LGO-CA	1.9	124	180	45%	-29%	-16%	199	143	1.3 x	5	(6)	-	2.92	0.7 x

144	FDK CORPORATION	6955-JP	3.8	130	205	41%	-4%	-24%	403	-	-	-	-	-	2.97	1.3 x
145	MPLUS CORP	259630-KR	5.4	66	87	99%	-5%	-39%	-	-	-	-	-	-	4.74	1.1 x
146	NIPPON DENKAI LTD	5759-JP	3.6	37	119	211%	-4%	-51%	107	140	0.8 x	-	-	-	1.65	2.2 x
147	FLUX PWR HLDGS	FLUX-US	2.2	37	51	168%	-8%	-47%	-	-	-	-	-	-	0.33	6.7 x
148	PIONEER PWR	PPSI-US	6.2	68	61	19%	-46%	-9%	41	44	1.4 x	1	(7)	-	1.34	4.6 x
149	IDEAL PWR INC	IPWR-US	6.7	55	35	108%	-16%	-14%	0	-	-	-	-	-	2.48	2.7 x
150	GELION UK LTD	GELN-GB	0.2	33	23	73%	-26%	-23%	3	-	-	(7)	-	-	0.15	1.7 x
151	KYOTO GROUP	KYOTO-NO				-!	-!	-!	-	17	-!	-	(4)	-	0.71	-!

						Price Performance			Sales				EBITDA		Book Value	
			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set																
Fuel Cells		Ticker		59,929	68,214			26%	37,308	37,035	1.8 x	1,541	4,253	16.0 x		2.9 x
152	CUMMINS INC	CMI	361.9	49,639	56,419	2%	-39%	51%	34,065	33,725	1.7 x	3,017	5,241	10.8 x	75.24	4.8 x
153	PLUG POWER INC	PLUG-US	1.9	1,704	2,277	175%	-14%	-58%	891	719	3.2 x	(1,073)	(725)	-	3.44	0.5 x
154	BLOOM ENERGY	BE-US	21.1	4,832	5,967	18%	-60%	43%	1,333	1,415	4.2 x	73	119	50.2 x	1.89	11.2 x
155	NEL ASA	NEL-NO	0.3	535	347	158%	-6%	-53%	165	140	2.5 x	(48)	(21)	-	0.27	1.2 x
156	BALLARD PWR SYS	BLDP-CA	1.3	385	(277)	212%	-3%	-65%	102	74	-3.7 x	(153)	(159)	-	2.33	0.6 x
157	DOOSAN FUEL CELL	336260-KR	10.7	702	1,193	87%	-6%	-40%	195	296	4.0 x	15	33	36.1 x	4.49	2.4 x
158	SHINRY TECH.	300745-CN	2.5	421	373	86%	-31%	-33%	-	-	-	-	-	-	2.00	1.3 x
159	CERES POWER	CWR-GB	2.2	431	268	84%	-29%	-5%	28	71	3.8 x	(63)	(29)	-	1.13	2.0 x
160	FUELCELL ENERGY	FCEL-US	6.2	126	41	796%	-12%	-87%	123	103	0.4 x	(105)	(93)	-	36.60	0.2 x
161	NANOFILM TECH.	MZH-SG	0.6	388	390	27%	-25%	-16%	132	150	2.6 x	27	37	10.5 x	0.44	1.3 x
162	SFC ENERGY AG	F3C-DE	18.8	326	266	45%	-8%	-13%	128	160	1.7 x	16	22	12.2 x	8.50	2.2 x
163	POWERCELL SWEDEN	PCELL-SE	3.3	174	168	52%	-38%	-28%	30	31	5.5 x	(5)	(4)	-	0.41	8.1 x
164	HYZON MOTORS INC	HYZN	1.4	10	(42)	4499%	-6%	-97%	0	11	-3.8 x	(131)	(141)	-	2.35	0.6 x
165	BUMHAN FUEL CELL	382900-KR	9.0	79	127	142%	-5%	-42%	23	-	-	(2)	-	-	8.80	1.0 x
166	BEIJING SINOHYTEC	2402-HK	2.8	100	627	64%	-32%	-10%	111	136	4.6 x	(19)	(23)	-	1.72	1.6 x
167	TECO 2030 ASA	TECO-NO	0.0	6	16	1949%	-31%	-94%	7	-	-	(9)	-	-	0.02	1.2 x

168	S-FUELCELL	288620-KR	6.3	44	26	146%	-4%	-52%	-	-	-	-	-	-	7.32	0.9 x
169	ADVENT TECH.	ADN-US	6.1	16	16	162%	-72%	-9%	5	-	-	-	-	-	(1.09)	-5.6 x
170	CELL IMPACT AB	CI-SE	0.0	12	12	407%	-34%	-25%	5	4	2.8 x	(9)	(5)	-	0.04	0.4 x

			Share Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	Price Performance			Sales		EV/Sales	EBITDA		EV/EBITDA	Book Value	
						% to High	% to Low	% YTD	FY0	FY1		FY0	FY1		Book/ Share	P/ Book
Peer Set																
Geothermal		Ticker		8,239	14,407			-4%	4,260	4,297	3.4 x	1,699	1,782	8.1 x		1.5 x
171	**ORMAT TECH.**	**ORA-US**	79.0	4,778	7,128	7%	-25%	4%	829	885	8.1 x	482	546	13.0 x	39.50	2.0 x
172	**PERTAMINA GEOTHERM**	**PGEO-ID**	0.1	2,709	2,814	45%	-6%	-14%	414	407	6.9 x	336	338	8.3 x	0.05	1.4 x
173	**FIRST PHILIPPINE**	**FPH-PH**	1.0	477	4,067	16%	-1%	-9%	2,939	2,928	1.4 x	823	843	4.8 x	5.93	0.2 x
174	**POLARIS RENEWABLE**	**PIF-CA**	8.9	188	319	18%	-8%	-11%	79	76	4.2 x	58	55	5.8 x	12.23	0.7 x
175	**ENVIRONMENT FRIEND**	**3777-JP**	0.2	54	47	74%	-25%	-36%	113	-	-	-	-	-	0.07	2.5 x
176	**BLUESTONE RES**	**BSR-CA**	0.2	33	32	188%	-40%	33%	-	0	-	-	-	-	0.15	1.4 x

						Price Performance			Sales				EBITDA		Book Value	
			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set																
GreenTech & Waste Mgt.		Ticker		126,876	172,380			16%	58,107	58,579	2.9 x	9,287	11,020	15.6 x		2.0 x
177	**WASTE CONNECTIONS**	**WCN**	183.5	47,355	55,297	3%	-29%	23%	8,022	8,908	6.2 x	2,523	2,912	19.0 x	32.02	5.7 x
178	**XYLEM INC**	**XYL**	121.8	29,586	30,889	20%	-18%	6%	7,364	8,491	3.6 x	1,392	1,732	17.8 x	43.59	2.8 x
179	**GFL ENVIRONMENTAL**	**GFL**	44.0	16,789	24,767	6%	-39%	27%	5,562	5,669	4.4 x	1,483	1,614	15.3 x	12.75	3.4 x
180	**CASELLA WASTE**	**CWST**	106.6	6,641	7,654	4%	-26%	25%	1,265	1,549	4.9 x	295	365	21.0 x	24.19	4.4 x
181	**STERICYCLE INC**	**SRCL**	62.0	5,648	7,663	0%	-29%	25%	2,659	-	-	417	-	-	27.53	2.3 x
182	**ACEA SPA**	**ACE-IT**	18.0	3,823	10,004	11%	-31%	18%	5,071	4,865	2.1 x	1,517	1,551	6.4 x	12.04	1.5 x
183	**KEPPEL INFRA.**	**A7RU-SG**	0.3	1,993	4,904	17%	-2%	-14%	1,554	1,585	3.1 x	304	315	15.6 x	0.11	3.0 x
184	**SIMS LTD**	**SMSMY**	8.1	1,569	2,015	32%	-21%	-23%	5,776	5,010	0.4 x	211	270	7.4 x	8.87	0.9 x
185	**CHINA TIANYING INC**	**000035-CN**	0.7	1,788	3,063	13%	-40%	9%	735	807	3.8 x	220	238	12.9 x	0.64	1.1 x
186	**ENERGY RECOVERY**	**ERII**	18.8	1,086	997	8%	-35%	0%	128	146	6.8 x	29	32	31.4 x	4.04	4.6 x
187	**SHANGHAI ENV.**	**601200-CN**	1.2	1,564	3,129	13%	-22%	10%	883	899	3.5 x	242	247	12.7 x	1.16	1.0 x
188	**PURECYCLE TECH.**	**PCT**	11.0	1,915	2,241	41%	-78%	187%	0	6	402.6 x	(92)	(95)	-	1.39	7.9 x
189	**MONTROSE ENV**	**MEG-US**	18.9	648	989	165%	-14%	-41%	624	700	1.4 x	79	95	10.4 x	13.10	1.4 x
190	**GS ENGINEERING**	**006360-KR**	12.6	1,082	4,252	29%	-20%	9%	10,068	9,230	0.5 x	(144)	366	11.6 x	37.95	0.3 x
191	**ENVIRI CORP**	**NVRI**	6.9	549	2,030	87%	-18%	-24%	2,069	2,363	0.9 x	293	321	6.3 x	6.04	1.1 x
192	**NGL ENERGY**	**NGL-US**	4.3	566	4,550	44%	-10%	-23%	6,957	6,186	0.7 x	610	642	7.1 x	(1.00)	-4.3 x

193	CECO ENVIRONMENTAL	CECE	27.2	951	1,064	16%	-32%	34%	545	577	1.8 x	58	66	16.0 x	6.90	3.9 x
194	WELLE ENV.	300190-CN	0.5	416	804	19%	-36%	-6%	305	361	2.2 x	35	57	14.1 x	0.66	0.8 x
195	TSUKISHIMA HOLDING	6332-JP	9.8	445	424	4%	-20%	8%	797	-	-	-	-	-	13.40	0.7 x
196	VERTEX ENERGY INC	VTNR	0.1	5	453	7504%	-53%	-98%	3,177	-	-	17	-	-	1.34	0.0 x
197	VA TECH WABAG	533269-IN	19.8	1,233	1,208	14%	-65%	163%	343	401	3.0 x	45	56	21.7 x	3.76	5.3 x
198	GREENTECH ENV.	688466-CN	1.9	233	250	46%	-32%	-24%	79	105	2.4 x	18	23	11.0 x	1.31	1.4 x
199	EKOPAK NV	EKOP-BE	17.6	262	320	24%	-19%	-17%	39	75	4.3 x	4	8	41.7 x	3.80	4.6 x
200	CSD WATER SERVICE	603903-CN	0.9	189	451	88%	-21%	-33%	-	-	-	-	-	-	0.90	1.0 x
201	DANIMER SCIENTIFIC	DNMR	8.6	26	405	752%	-29%	-79%	47	41	9.8 x	(39)	(34)	-	80.28	0.1 x
202	DYNAGREEN ENV.	1330-HK	0.4	162	2,147	20%	-30%	33%	547	477	4.5 x	205	234	9.2 x	0.83	0.5 x
203	GREEN IMPACT	GIP-CA	2.3	44	73	61%	-22%	-32%	118	115	0.6 x	(0)	1	93.1 x	3.18	0.7 x
204	ASCENT INDUSTRIES	ACNT-US	10.0	100	129	12%	-28%	4%	193	-	-	-	-	-	9.38	1.1 x
205	TACMINA CORP	6322-JP	11.5	89	59	32%	-6%	0%	71	-	-	-	-	-	9.44	1.2 x
206	NAGAOKA INTL	6239-JP	7.3	52	36	72%	-19%	1%	64	-	-	-	-	-	6.29	1.2 x
207	EVERGEN INFRA.	EVGN-CA	1.2	17	39	67%	0%	-36%	6	11	3.7 x	0	3	11.2 x	2.76	0.4 x
208	PUEQU CO LTD	9264-JP	10.6	49	75	51%	-36%	19%	56	-	-	-	-	-	5.96	1.8 x

						Price Performance			Sales				EBITDA		Book Value	
			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set																
Hydro		Ticker		237,135	429,232			-1%	179,131	184,231	2.3 x	41,224	44,246	9.7 x		1.5 x
209	VINCI	DG-FR	105.9	62,487	92,378	24%	-2%	-13%	74,052	75,568	1.2 x	12,839	13,270	7.0 x	54.29	2.0 x
210	CEZ	CEZ-CZ	37.7	20,297	25,229	18%	-10%	-12%	14,670	14,907	1.7 x	5,377	5,191	4.9 x	18.94	2.0 x
211	ENDESA SA	ELE-ES	20.8	22,074	35,123	7%	-17%	2%	27,584	26,788	1.3 x	4,092	5,484	6.4 x	8.30	2.5 x
212	HUANENG LANCANG	600025-CN	1.3	23,897	42,873	33%	-17%	9%	3,238	3,493	12.3 x	2,300	2,558	16.8 x	0.45	2.9 x
213	S.P.E.E.H. HIDRO	H2O-RO	25.8	11,616	11,111	17%	-1%	-9%	2,646	2,219	5.0 x	1,754	1,428	7.8 x	10.80	2.4 x
214	TATA POWER CO	500400-IN	4.8	15,319	21,911	23%	-36%	20%	7,364	8,246	2.7 x	1,296	1,500	14.6 x	1.25	3.8 x
215	MERIDIAN ENERGY	MEL-NZ	3.4	8,975	9,639	21%	-13%	-2%	3,035	2,881	3.3 x	566	532	18.1 x	1.90	1.8 x
216	ORKLA ASA	ORK-NO	8.8	8,853	11,096	10%	-27%	14%	6,407	6,386	1.7 x	893	944	11.8 x	4.02	2.2 x
217	BROOKFIELD RENEWABLE	BEP.UT-CA	25.2	7,179	60,569	17%	-21%	-5%	5,038	5,966	10.2 x	2,130	2,374	25.5 x	11.02	2.3 x
218	NHPC LTD	533098-IN	0.9	9,327	13,635	53%	-33%	20%	1,141	1,290	10.6 x	585	727	18.8 x	0.48	2.0 x
219	BROOKFIELD RENEW.	BEPC-US	30.1	5,405	34,124	17%	-29%	5%	4,551	6,051	5.6 x	3,053	3,091	11.0 x	17.61	1.7 x
220	IDACORP INC	IDA-US	117.2	6,243	8,907	2%	-26%	19%	1,766	1,839	4.8 x	529	571	15.6 x	61.38	1.9 x
221	PORTLAND GEN	POR-US	46.7	4,920	9,654	7%	-16%	8%	2,923	3,145	3.1 x	880	1,046	9.2 x	34.42	1.4 x
222	CHINA SOUTHERN	600995-CN	1.5	4,716	7,241	15%	-27%	6%	779	869	8.3 x	498	712	10.2 x	0.95	1.6 x
223	SJVN LTD	533206-IN	1.2	4,835	6,811	67%	-27%	13%	314	380	17.9 x	229	301	22.6 x	0.44	2.8 x
224	COLBUN S.A.	COLBUN-CL	0.1	2,105	3,474	37%	-2%	-25%	2,013	1,607	2.2 x	745	626	5.6 x	0.17	0.7 x

225	BORALEX INC	BLX-CA	22.6	2,321	4,922	20%	-16%	-12%	733	616	8.0 x	499	496	9.9 x	11.20	2.0 x
226	WEBUILD SPA	WBD-IT	2.7	2,798	2,498	7%	-29%	40%	10,882	12,136	0.2 x	892	1,015	2.5 x	1.69	1.6 x
227	INNERGEX	INE-CA	6.1	1,234	6,178	32%	-14%	-13%	772	754	8.2 x	545	522	11.8 x	3.19	1.9 x
228	AKSA ENERJI	AKSEN.E-TR	1.0	1,201	1,917	56%	-5%	-3%	1,092	790	2.4 x	247	226	8.5 x	0.92	1.1 x
229	ENEL GENERACION	ENGEPEC1-PE	0.7	2,044	2,387	31%	-28%	5%	-	-	-	-	-	-	0.28	2.3 x
230	TANGSHAN JIDONG	000401-CN	0.8	1,220	4,554	27%	-30%	-11%	3,907	3,616	1.3 x	351	538	8.5 x	1.50	0.5 x
231	BESTWAY MARINE	300008-CN	0.7	1,264	1,326	23%	-43%	30%	498	-	-	35	-	-	0.16	4.4 x
232	SCATEC ASA	SCATC-NO	7.3	1,154	3,531	20%	-17%	-10%	445	611	5.8 x	343	457	7.7 x	5.82	1.2 x
233	MANAWA ENERGY	MNW-NZ	3.1	982	1,280	10%	-26%	15%	289	282	4.5 x	88	67	19.1 x	2.16	1.5 x
234	CK POWER PUBLIC	CKP-TH	0.1	752	1,751	32%	-8%	-3%	285	300	5.8 x	111	105	16.7 x	0.10	0.9 x
235	MEIDENSHA CORP	6508-JP	25.4	1,155	1,275	10%	-36%	47%	1,846	1,975	0.6 x	152	189	6.8 x	17.84	1.4 x
236	NAFCO CO LTD	2790-JP	12.9	384	265	56%	-6%	9%	1,226	-	-	-	-	-	38.96	0.3 x
237	TORISHIMA PUMP	6363-JP	16.9	492	430	31%	-24%	16%	522	568	0.8 x	55	62	6.9 x	13.08	1.3 x
238	NORTHWEST PIPE	NWPX-US	53.3	528	698	4%	-52%	76%	444	493	1.4 x	51	69	10.0 x	36.53	1.5 x
239	TOKYO ENERGY	1945-JP	6.7	236	228	45%	-6%	-5%	569	-	-	-	-	-	13.23	0.5 x
240	LITHIUM IONIC	LTH-CA	0.5	69	66	200%	-35%	-65%	-	0	-	-	(17)	-	0.02	26.9 x
241	GIA LAI ELECTRIC.	GEG-VN	0.4	152	602	52%	-3%	-16%	-	99	6.1 x	-	70	8.6 x	0.42	1.0 x
242	INDIAN HUME PIPE	504741-IN	4.6	242	290	59%	-39%	58%	166	171	1.7 x	21	21	14.0 x	1.95	2.4 x
243	DAIDO METAL	7245-JP	3.1	146	444	58%	-1%	-21%	823	-	-	100	-	-	10.11	0.3 x

244	DAT PHUONG	DPG-VN	2.0	129	209	20%	-25%	25%	-	182	1.1 x	-	28	7.5 x	1.16	1.8 x
245	REACH SUBSEA	REACH-NO	0.8	215	363	25%	-53%	79%	184	238	1.5 x	88	103	3.5 x	0.34	2.3 x
246	INIZIATIVE	IB-IT	14.7	77	194	14%	-5%	-10%	27	32	6.0 x	19	22	8.7 x	15.19	1.0 x
247	IMAGINEER CO	4644-JP	6.4	69	31	17%	-4%	0%	38	-	-	-	-	-	7.98	0.8 x
248	SYNERTEC CORP	SOP-AU	0.0	24	17	185%	-7%	-55%	13	15	1.2 x	(4)	(1)	-	0.02	2.5 x

								Price Performance		Sales			EBITDA			Book Value	
			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set																
Nuclear		Ticker		235,405	416,252			49%	93,524	93,322	4.5 x	26,976	28,684	14.5 x		3.0 x
249	CONSTELLATION	CEG-US	224.3	70,147	79,244	29%	-51%	92%	24,918	22,648	3.5 x	4,025	4,665	17.0 x	40.19	5.6 x
250	PUBLIC SVC	PEG-US	89.0	44,337	65,756	4%	-36%	46%	11,237	10,226	6.4 x	4,928	4,133	15.9 x	32.32	2.8 x
251	ENTERGY CORP NEW	ETR-US	149.1	31,973	59,701	5%	-36%	47%	12,643	12,753	4.7 x	4,590	4,933	12.1 x	70.11	2.1 x
252	CHINA NATL NUCLE.P	601985-CN	1.4	25,905	86,720	26%	-30%	30%	10,333	10,784	8.0 x	6,122	6,810	12.7 x	0.71	1.9 x
253	CAMECO CORP	CCJ-US	53.6	23,322	24,090	10%	-34%	24%	1,922	2,169	11.1 x	617	982	24.5 x	10.56	5.1 x
254	BWX TECHNOLOGIES	BWXT-US	126.3	11,545	12,705	8%	-41%	65%	2,496	2,683	4.7 x	472	500	25.4 x	11.58	10.9 x
255	CHINA NUCLEAR ENGI	601611-CN	1.2	3,748	16,613	11%	-32%	27%	15,105	16,185	1.0 x	1,104	1,242	13.4 x	0.95	1.3 x
256	CGN POWER CO LTD	1816-HK	0.4	3,929	50,705	33%	-34%	35%	11,422	11,961	4.2 x	4,911	5,256	9.6 x	0.33	1.1 x
257	NEXGEN ENERGY LTD	NXE-US	7.4	4,170	4,092	20%	-33%	5%	2	3	1,366.6 x	(52)	(30)	-	1.59	4.6 x
258	URANIUM ENERGY	UEC-US	7.4	3,053	2,889	17%	-45%	16%	0	124	23.3 x	(41)	13	216.6 x	1.90	3.9 x
259	LANZHOU LS HEAVY	603169-CN	0.8	994	1,560	18%	-29%	-12%	713	823	1.9 x	63	72	21.5 x	0.35	2.2 x
260	DENISON MINES	DNN-US	2.1	1,866	1,772	18%	-33%	18%	1	4	445.2 x	68	(48)	-	0.49	4.3 x
261	ENERGY FUELS INC	UUUU-US	6.6	1,305	927	31%	-37%	-8%	38	71	13.0 x	(27)	(18)	-	2.26	2.9 x
262	SINOSEAL HOLDING	300470-CN	5.0	1,045	897	27%	-20%	-4%	189	212	4.2 x	60	68	13.2 x	1.76	2.8 x
263	BEIJER ALMA AB	BEIA.B-SE	15.7	845	1,218	39%	-4%	-17%	658	647	1.9 x	120	122	10.0 x	6.67	2.4 x
264	JIANGSU SHENTONG	002438-CN	1.8	919	1,025	13%	-39%	8%	294	327	3.1 x	68	80	12.9 x	0.95	1.9 x

265	CENTRUS ENERGY	LEU-US	70.2	1,100	1,065	69%	-52%	29%	320	397	2.7 x	62	41	25.7 x	4.66	15.1 x
266	EAGLE INDUSTRY	6486-JP	12.7	631	692	18%	-15%	22%	1,068	-	-	-	-	-	16.38	0.8 x
267	TAIHEI DENGYO	1968-JP	32.8	685	443	21%	-23%	7%	830	903	0.5 x	-	-	-	33.82	1.0 x
268	NUSCALE PWR	SMR-US	23.0	2,326	2,073	20%	-92%	599 %	23	17	125.7 x	(147)	(139)	-	1.64	14.1 x
269	FISSION URANIUM	FCUUF	0.5	463	356	87%	-7%	-34%	0	0	-	(9)	(15)	-	0.47	1.1 x
270	UR-ENERGY INC	URG	1.3	455	394	61%	-23%	-19%	18	32	12.3 x	(16)	(48)	-	0.42	3.0 x
271	SUNG KWANG BEND	014620-KR	11.0	314	193	15%	-34%	24%	187	174	1.1 x	39	43	4.5 x	13.99	0.8 x
272	WOOJIN INC	105840-KR	5.7	115	124	45%	-9%	-20%	96	100	1.2 x	14	15	8.3 x	6.44	0.9 x
273	STUDSVIK	SVIK-SE	11.1	91	100	30%	-7%	-14%	79	80	1.2 x	6	6	17.1 x	4.42	2.5 x
274	CHINA NUCLEAR	611-HK	0.0	88	895	52%	-30%	33%	-	-	-	-	-	-	0.12	0.4 x
275	TVE CO LTD	6466-JP	13.9	34	(3)	34%	-14%	-2%	72	-	-	-	-	-	30.92	0.4 x

								Price Performance		Sales			EBITDA		Book Value	
			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set																
Smart Infrastructure		Ticker		408,178	488,596			8%	219,026	220,402	2.2 x	36,062	35,333	13.8 x		2.9 x
276	**SIEMENS AG**	**SIE-DE**	197.4	157,941	208,063	5%	-19%	7%	80,304	84,086	2.5 x	14,075	15,230	13.7 x	68.46	2.9 x
277	**ABB LTD**	**ABB**	56.1	104,457	107,567	6%	-32%	28%	32,235	32,899	3.3 x	5,825	6,286	17.1 x	7.64	7.4 x
278	**STMICROELECTRONICS**	**STMPA-FR**	25.4	22,973	19,628	102%	-5%	-49%	17,286	13,242	1.5 x	6,154	3,348	5.9 x	18.95	1.3 x
279	**SIEMENS INDIA LTD**	**500550-IN**	79.7	28,370	27,481	21%	-47%	65%	2,346	2,583	10.6 x	289	357	76.9 x	4.65	17.1 x
280	**EVE ENERGY**	**300014-CN**	6.8	12,603	16,864	22%	-38%	15%	6,736	7,001	2.4 x	853	979	17.2 x	2.52	2.7 x
281	**WESCO INTL INC**	**WCC-US**	204.3	10,009	15,142	5%	-35%	17%	22,385	21,732	0.7 x	1,705	1,513	10.0 x	102.90	2.0 x
282	**SENSATA TECH.**	**ST-US**	31.8	4,761	7,638	36%	-3%	-15%	4,054	3,915	2.0 x	907	880	8.7 x	19.71	1.6 x
283	**ACUITY BRANDS INC**	**AYI**	325.9	10,057	9,764	4%	-46%	59%	3,841	4,067	2.4 x	675	733	13.3 x	77.23	4.2 x
284	**AGL ENERGY**	**AGL-AU**	6.9	4,651	5,709	22%	-27%	7%	8,993	8,872	0.6 x	1,467	1,345	4.2 x	5.29	1.3 x
285	**ADVANCED ENERGY**	**AEIS**	109.5	4,123	4,158	10%	-19%	0%	1,660	1,461	2.8 x	258	184	22.6 x	30.91	3.5 x
286	**SHARP CORP**	**6753-JP**	6.5	4,217	6,781	19%	-23%	-9%	14,949	15,027	0.5 x	354	428	15.9 x	1.32	4.9 x
287	**HYUNDAI AUTOEVER**	**307950-KR**	91.4	2,506	2,167	83%	-4%	-44%	2,294	2,569	0.8 x	234	255	8.5 x	44.00	2.1 x
288	**ITRON INC**	**ITRI-US**	114.9	5,181	5,541	9%	-43%	52%	2,174	2,430	2.3 x	226	314	17.6 x	29.95	3.8 x
289	**VERRA MOBILITY**	**VRRM**	23.4	3,860	4,804	32%	-16%	2%	817	878	5.5 x	372	402	12.0 x	2.95	7.9 x
290	**BEIJING E-HUALU**	**300212-CN**	3.7	2,653	3,468	61%	-47%	-17%	106	116	29.9 x	(157)	60	58.0 x	0.58	6.3 x
291	**IREN SPA**	**IRE-IT**	2.0	2,616	8,393	16%	-10%	-6%	6,988	6,750	1.2 x	1,293	1,321	6.4 x	2.38	0.8 x

292	HANNON ARMSTRONG	HASI	27.2	3,225	7,219	34%	-20%	-1%	320	361	20.0 x	247	238	30.3 x	19.11	1.4 x
293	FIBOCOM WIRELESS	300638-CN	2.5	1,885	1,957	23%	-43%	-8%	1,065	1,140	1.7 x	137	119	16.4 x	0.65	3.8 x
294	KEC INTERNATIONAL	532714-IN	11.9	3,180	3,622	7%	-43%	69%	2,384	2,702	1.3 x	146	199	18.2 x	2.26	5.3 x
295	TKH GROUP NV	TWEKA-NL	35.4	1,495	2,061	37%	-4%	-14%	2,006	1,844	1.1 x	304	288	7.1 x	23.92	1.5 x
296	HEXING ELECTRICAL	603556-CN	5.3	2,590	2,143	45%	-38%	30%	580	717	3.0 x	147	191	11.2 x	1.99	2.7 x
297	NV5 GLOBAL INC	NVEE-US	22.0	1,429	1,673	31%	-2%	-21%	862	942	1.8 x	137	151	11.1 x	12.63	1.7 x
298	TAIWAN SECOM CO	9917-TW	4.1	1,848	1,876	14%	-11%	9%	-	-	-	-	-	-	0.87	4.7 x
299	TOPCON CORPORATION	7732-JP	9.7	1,052	1,466	34%	-14%	-7%	1,388	1,457	1.0 x	143	165	8.9 x	6.38	1.5 x
300	ALFEN NV	ALFEN-NL	13.1	284	368	436%	-7%	-80%	541	513	0.7 x	60	28	13.1 x	8.39	1.6 x
301	COSCO SHIPPING	002401-CN	2.3	858	664	31%	-26%	-9%	245	-	-	-	-	-	0.64	3.6 x
302	KAZAKHSTAN ELEC.	KEGC-KZ	2.9	804	995	19%	-1%	-10%	560	-	-	245	-	-	5.29	0.6 x
303	PENTAMASTER CORP	7160-MY	0.8	586	535	39%	-5%	-15%	145	151	3.5 x	29	32	16.7 x	0.25	3.4 x
304	SHANGHAI FUDAN	1385-HK	1.9	545	1,739	72%	-42%	6%	491	515	3.4 x	143	136	12.7 x	0.99	1.9 x
305	JIAYUAN SCIENCE	301117-CN	4.6	429	366	114%	-38%	-40%	31	35	10.6 x	(1)	3	105.0 x	2.00	2.3 x
306	HANGZHOU EZVIZ	688475-CN	4.5	1,838	3,070	28%	-25%	0%	669	758	4.0 x	98	85	36.1 x	0.96	4.7 x
307	SHENZHEN LONGTECH	300916-CN	4.1	590	482	27%	-60%	18%	-	-	-	-	-	-	1.25	3.3 x
308	SHIJIAZHUANG KELIN	603050-CN	3.1	836	1,012	37%	-53%	45%	-	-	-	-	-	-	0.84	3.6 x
309	FARO TECHNOLOGIES	FARO	25.1	474	460	12%	-46%	11%	359	340	1.4 x	12	36	12.9 x	13.51	1.9 x
310	AMERICAN SUPERCOND.	AMSC	30.1	1,187	1,108	26%	-72%	170 %	146	211	5.3 x	(4)	6	177.8 x	4.70	6.4 x

311	JIANGSU TONGXIN.	301339-CN	2.9	347	796	29%	-46%	8%	103	127	6.3 x	38	-	-	0.92	3.1 x
312	BILLION ELECTRONIC	3027-TW	1.1	121	117	49%	-12%	-24%	-	-	-	-	-	-	0.57	1.8 x
313	ENERGY S.P.A	ENY-IT	0.9	49	61	202%	-20%	-57%	69	40	1.5 x	11	(8)	-	1.15	0.8 x
314	DRAGONFLY ENERGY	DFLI-US	0.5	31	75	198%	-33%	-9%	64	58	1.3 x	(17)	(20)	-	(0.00)	-103.7 x
315	INVINITY ENERGY SY	IES-GB	0.2	83	(21)	145%	-41%	-57%	28	16	-1.3 x	(27)	(27)	-	0.45	0.4 x
316	POWERFLEET INC	PWFL	6.0	786	761	12%	-63%	74%	134	352	2.2 x	7	71	10.7 x	4.18	1.4 x
317	CEPTON INC	CPTN-US	3.1	50	103	67%	-24%	-1%	13	19	5.3 x	(41)	(24)	-	(3.24)	-1.0 x
318	INSEEGO CORP	INSG	11.9	178	279	74%	-86%	440%	196	199	1.4 x	17	21	13.0 x	(6.78)	-1.8 x
319	ARQ INC	ADES	6.9	290	292	20%	-66%	131%	99	111	2.6 x	(3)	7	42.9 x	5.19	1.3 x
320	ORION ENERGY SYS	OESX	0.9	28	38	79%	-5%	-1%	91	99	0.4 x	(7)	0	-	0.48	1.8 x
321	MERUS POWER OYJ	MERUS-FI	4.3	33	29	47%	-11%	-4%	-	32	0.9 x	-	(1)	-	1.11	3.9 x
322	FERROAMP AB	FERRO-SE	0.4	11	19	267%	-9%	-57%	34	25	0.8 x	(8)	(3)	-	0.31	1.2 x
323	TANTALUS SYSTEMS	GRID-CA	1.2	60	64	23%	-56%	100%	42	44	1.5 x	(0)	(0)	-	0.12	10.0 x

						Price Performance			Sales			EBITDA			Book Value	
			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/EBITDA	Book/ Share	P/ Book
Peer Set																
Solar		Ticker		85,585	124,549			-30%	79,887	69,014	1.8 x	9,848	7,253	17.2 x		1.5 x
324	FIRST SOLAR INC	FSLR-US	190.5	20,389	19,262	61%	-29%	11%	3,319	4,211	4.6 x	1,167	1,927	10.0 x	70.93	2.7 x
325	ENPHASE ENERGY	ENPH-US	59.5	8,042	7,715	138%	-2%	-55%	2,291	1,335	5.8 x	752	382	20.2 x	6.89	8.6 x
326	JA SOLAR TECH.	002459-CN	2.3	7,506	11,169	43%	-45%	-22%	11,262	10,528	1.1 x	1,691	712	15.7 x	1.36	1.7 x
327	XINJIANG DAQO	688303-CN	3.7	8,000	7,072	45%	-37%	-10%	2,259	1,153	6.1 x	1,051	42	169.3 x	2.76	1.4 x
328	TRINA SOLAR	688599-CN	3.3	7,173	13,062	31%	-36%	-17%	15,649	12,466	1.0 x	1,352	740	17.7 x	1.89	1.7 x
329	SUZHOU MAXWELL	300751-CN	18.1	3,497	4,922	12%	-46%	-1%	1,116	1,578	3.1 x	136	171	28.8 x	3.75	4.8 x
330	ARRAY TECH.	ARRY-US	6.9	1,041	1,818	194%	-19%	-59%	1,577	916	2.0 x	288	179	10.2 x	0.42	16.1 x
331	HENGDIAN GROUP	002056-CN	1.9	3,066	2,713	20%	-21%	1%	2,742	3,033	0.9 x	418	411	6.6 x	0.80	2.4 x
332	SUNRUN INC	RUN-US	9.9	2,219	14,956	125%	-7%	-50%	2,260	2,060	7.3 x	(1,427)	60	250.4 x	23.55	0.4 x
333	SHOALS TECH.	SHLS-US	4.6	760	904	284%	-9%	-71%	489	392	2.3 x	173	98	9.2 x	3.27	1.4 x
334	RISEN ENERGY	300118-CN	1.9	2,130	4,498	38%	-34%	-24%	-	-	-	-	-	-	1.66	1.1 x
335	DAQO NEW ENERGY	DQ-US	19.3	1,271	1,633	60%	-29%	-27%	2,309	1,044	1.6 x	942	(105)	-	71.62	0.3 x
336	CECEP SOLAR ENERGY	000591-CN	0.7	2,473	5,279	18%	-19%	-13%	1,318	1,141	4.6 x	-	-	-	0.85	0.8 x
337	NEXTRACKER INC	NXT-US	36.8	5,286	4,976	69%	-16%	-21%	2,500	2,853	1.7 x	521	639	7.8 x	8.81	4.2 x
338	WUHAN DR LASER	300776-CN	10.6	2,897	2,639	17%	-52%	25%	223	291	9.1 x	72	93	28.3 x	1.64	6.5 x
339	CANADIAN SOLAR	CSIQ	11.0	727	4,680	144%	-1%	-58%	7,614	6,821	0.7 x	719	656	7.1 x	40.15	0.3 x

340	JINKOSOLAR HLDG	JKS-US	20.9	1,111	6,598	84%	-20%	-42%	16,716	13,345	0.5 x	1,626	985	6.7 x	55.60	0.4 x
341	JOLYWOOD	300393-CN	1.0	1,109	2,191	57%	-31%	-30%	-	-	-	-	-	-	0.51	2.0 x
342	JIANGSU SHUANGXING	002585-CN	0.8	902	1,183	74%	-26%	-31%	698	812	1.5 x	53	65	18.3 x	1.11	0.7 x
343	BRAVIDA HOLDING AB	BRAV-SE	7.1	1,450	1,834	32%	-15%	-12%	2,814	2,708	0.7 x	222	200	9.1 x	3.73	1.9 x
344	SUNPOWER CORP	SPWR-US	0.0	0		######	-99%	-100%	1,749	-	-!	(84)	-	-	2.41	0.0 x
345	DAEJOO ELECTRONIC	078600-KR	59.1	914	1,030	101%	-14%	-9%	138	163	6.3 x	11	31	33.7 x	8.20	7.2 x
346	WONIK IPS CO LTD	240810-KR	16.3	800	713	103%	-3%	-38%	514	537	1.3 x	20	42	17.0 x	12.79	1.3 x
347	UNITED RENEWABLE	3576-TW	0.3	516	759	57%	-3%	-34%	-	-	-	-	-	-	0.22	1.4 x
348	MAXEON SOLAR	MAXN-US	10.0	153	322	7716%	-50%	-99%	1,125	605	0.5 x	4	(135)	-	(48.34)	-0.2 x
349	HUBEI HUITIAN NEW	300041-CN	1.3	702	913	29%	-25%	-8%	539	566	1.6 x	63	55	16.5 x	0.76	1.6 x
350	ABALANCE CORP	3856-JP	5.0	90	340	441%	-5%	-78%	1,402	-	-	-	-	-	8.21	0.6 x
351	JIANGSU YUXING	300305-CN	0.8	316	381	75%	-25%	-38%	233	-	-	23	-	-	0.95	0.9 x
352	TES CO LTD	095610-KR	10.6	210	99	123%	-5%	-23%	110	151	0.7 x	0	18	5.6 x	12.87	0.8 x
353	THAI SOLAR ENERGY	TSE-TH	0.0	55	162	155%	-3%	-47%	-	-	-	-	-	-	0.05	0.5 x
354	OTOVO ASA	OTOVO-NO	0.1	28	26	271%	-11%	-70%	102	62	0.4 x	(31)	(28)	-	0.18	0.6 x
355	CHUGAI RO CO LTD	1964-JP	18.0	141	135	29%	-22%	16%	186	-	-	-	-	-	23.38	0.8 x
356	SUZHOU DELPHI	688170-CN	3.6	290	320	94%	-27%	-34%	80	103	3.1 x	6	(2)	-	1.70	2.1 x
357	NPC INC.	6255-JP	5.6	124	86	64%	-26%	9%	72	78	1.1 x	18	18	4.9 x	2.95	1.9 x
358	INTEVAC INC	IVAC-US	2.6	70	12	77%	-5%	-40%	53	63	0.2 x	-	-	-	4.17	0.6 x

359	GANTAN BEAUTY	5935-JP	13.4	52	55	36%	-30%	24%	92	-	-	-	-	-	9.80	1.4 x
360	SOLARMAX TECH.	SMXT	1.0	43	70	1571%	-37%	-!	-	-	-	-	-	-	(0.24)	-3.9 x
361	SUPER TOOL	5990-JP	13.1	31	22	12%	-4%	-3%	37	-	-	-	-	-	30.06	0.4 x

						Price Performance			Sales				EBITDA		Book Value	
			Price	Mkt Cap ($ Mns)	Ent Val ($ Mns)	% to High	% to Low	% YTD	FY0	FY1	EV/Sales	FY0	FY1	EV/ EBITDA	Book/ Share	P/ Book
Peer Set																
Wind		Ticker		567,238	857,909			23%	213,017	189,100	4.5 x	55,371	62,357	13.8 x		2.1 x
362	NEXTERA ENERGY	NEE-US	76.4	157,006	247,803	13%	-29%	26%	28,114	27,005	9.2 x	14,758	16,076	15.4 x	24.34	3.1 x
363	GE AEROSPACE	GE-US	176.9	191,490	197,117	10%	-33%	39%	64,565	35,395	5.6 x	7,814	8,248	23.9 x	17.44	10.1 x
364	IBERDROLA SA	IBDRY-US	56.4	89,776	155,482	10%	-20%	11%	53,333	52,965	2.9 x	15,639	17,371	9.0 x	32.61	1.7 x
365	DOMINION ENERGY	D-US	57.6	48,410	91,152	8%	-24%	23%	14,393	15,342	5.9 x	6,420	7,018	13.0 x	31.17	1.8 x
366	EVERSOURCE ENERGY	ES-US	61.9	22,662	51,584	12%	-16%	0%	11,911	12,477	4.1 x	3,603	4,198	12.3 x	41.34	1.5 x
367	AVANGRID INC	AGR-US	36.0	13,917	28,689	5%	-17%	11%	8,309	8,486	3.4 x	2,222	3,257	8.8 x	51.06	0.7 x
368	NORTHLAND POWER	NPI-CA	14.3	3,715	9,237	32%	-5%	-21%	1,654	1,703	5.4 x	918	917	10.1 x	10.99	1.3 x
369	MING YANG SMART	601615-CN	1.7	3,921	5,693	19%	-37%	5%	3,844	4,662	1.2 x	138	361	15.8 x	1.80	1.0 x
370	NEOEN SA	NEOEN-FR	41.5	6,348	10,548	6%	-43%	24%	568	661	15.9 x	514	568	18.6 x	19.47	2.1 x
371	SUZLON ENERGY	532667-IN	0.7	9,180	9,042	52%	-40%	47%	785	1,324	6.8 x	125	210	43.0 x	0.04	17.2 x
372	TITAN WIND ENERGY	002531-CN	1.2	2,152	3,700	59%	-25%	-27%	1,066	1,017	3.6 x	268	297	12.4 x	0.71	1.7 x
373	CECEP WIND-POWER	601016-CN	0.4	2,847	5,822	17%	-20%	4%	708	752	7.7 x	610	584	10.0 x	0.38	1.2 x
374	NORDEX SE	NDX1-DE	12.4	2,942	2,635	41%	-25%	8%	7,023	7,742	0.3 x	2	297	8.9 x	4.49	2.8 x
375	CLEARWAY ENERGY	CWEN-US	27.6	2,283	14,069	12%	-25%	0%	1,314	1,421	9.9 x	1,058	1,173	12.0 x	18.17	1.5 x
376	CS WIND CORP	112610-KR	28.5	1,202	1,998	93%	-3%	-47%	1,128	2,243	0.9 x	133	276	7.3 x	18.90	1.5 x
377	QINGDAO TIANNENG	300569-CN	0.7	734	1,290	43%	-26%	-29%	-	-	-	-	-	-	0.78	0.9 x

378	INOX WIND LTD	539083-IN	2.2	2,933	3,346	39%	-68%	50%	209	544	6.2 x	32	92	36.5 x	0.24	9.2 x
379	WINDEY ENERGY	300772-CN	1.8	1,287	2,097	20%	-48%	22%	2,586	2,955	0.7 x	27	28	74.0 x	1.10	1.7 x
380	ALIMAK GROUP	ALIG-SE	10.8	1,162	1,455	11%	-34%	35%	681	644	2.3 x	128	129	11.3 x	6.35	1.7 x
381	VRL LOGISTICS	539118-IN	6.1	534	655	57%	-4%	-34%	347	382	1.7 x	47	58	11.3 x	1.35	4.5 x
382	JIANGSU HAILI WIND	301155-CN	8.3	734	1,986	29%	-43%	-1%	233	265	7.5 x	17	44	45.0 x	3.53	2.3 x
383	FICONT INDUSTRY	605305-CN	3.7	792	563	26%	-23%	15%	153	199	2.8 x	33	50	11.2 x	1.59	2.3 x
384	EUROGROUP	EGLA-IT	3.1	292	796	67%	-10%	-23%	902	952	0.8 x	173	126	6.3 x	2.82	1.1 x
385	GURIT HOLDING AG	GURN-CH	14.1	66	142	602%	-8%	-85%	520	497	0.3 x	39	31	4.6 x	20.22	0.7 x
386	GOLDWIND SCI&TECH	2208-HK	0.8	594	10,121	27%	-56%	71%	6,952	7,902	1.3 x	714	950	10.7 x	1.19	0.6 x
387	CS BEARING CO LTD	297090-KR	2.8	78	84	215%	-6%	-67%	59	71	1.2 x	2	4	19.4 x	2.34	1.2 x
388	TPI COMPOSITES INC	TPIC-US	2.2	103	685	165%	-12%	-48%	1,451	1,344	0.5 x	(86)	(20)	-	(6.77)	-0.3 x
389	BROADWIND INC	BWEN-US	1.6	34	74	200%	-2%	-44%	203	142	0.5 x	21	12	6.0 x	2.66	0.6 x
390	WINDAR PHOTONICS	WPHO-GB	0.5	44	43	25%	-30%	-11%	5	7	6.2 x	0	1	54.0 x	0.07	8.3 x

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