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BBGI CLEAN ENERGY 100 USD INDEX AND STRATEGY

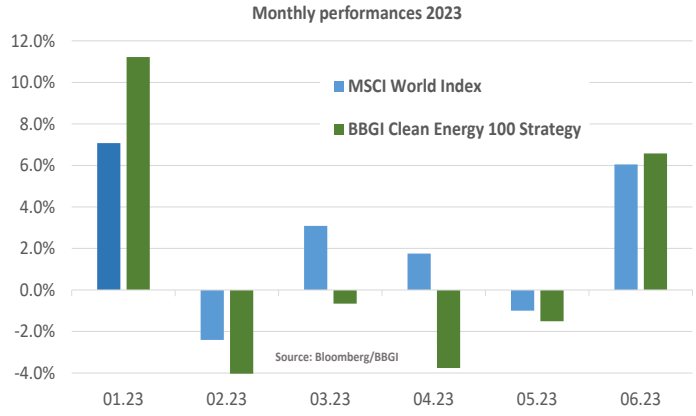
A BBGI Exclusivity since 1999

June 2023

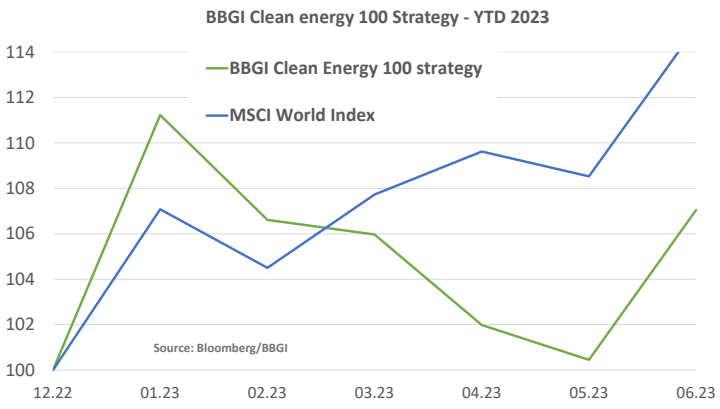
Annualized performance of +10.96% since 1999

Clean Energy strategy halts downward trend

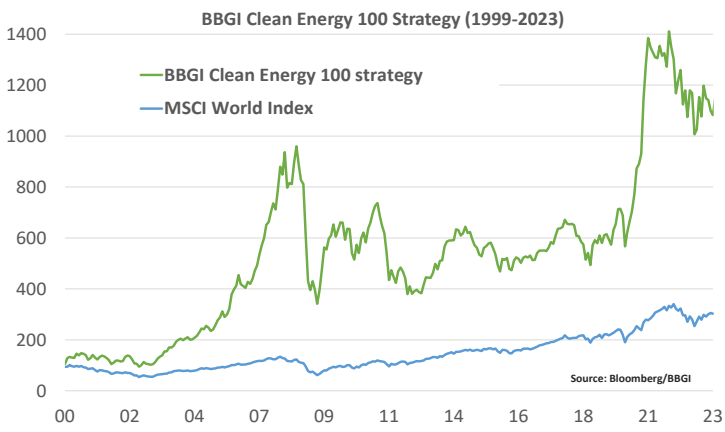
	June	YTD
BBGI Clean Energy 100 strategy:	**+6.58%**	**+7.05%**
BBGI Solar Sector:	**+4.04%**	**+4.44%**
BBGI Wind Sector:	**+3.29%**	**+6.17%**
BBGI Biofuel Sector:	**+14.16%**	**-3.48%**
BBGI Energy efficiency Sector:	**+7.63%**	**10.69%**



The Clean Energy 100 strategy interrupted its downward trend in June and jumped +6.58%. Indeed, this month all the segments that make up our strategy are moving into positive territory. The Biofuel industry, which had suffered the most during the first half of the year due to a strong oversupply caused by the correction in crude oil prices, posted an excellent performance of +14.16% in June. The photovoltaic sector also rebounded, gaining +4.04%. Wind energy is also in the green, advancing by +3.29%. The energy efficiency segment was also in positive territory in June, advancing by +7.63%. In the photovoltaic industry, First Solar and Enphase are the two companies still on track to see their 2023 EBITDA margin exceed 30%, a trend that could well continue into 2024. More generally, the US companies in our strategy should see a marked improvement in margins over the coming year.



At the same time, wind turbine manufacturers should see an improvement in their profit outlook. In fact, steel prices have fallen sharply since Russia and Ukraine entered the war, with the cost of a ton having retracted by -50% since the peak in 2022. This mechanism, coupled with a +20% rise in turbine prices in recent years, should boost the profitability of companies active in the sector, such as Vestas and Nordex. The valuations of wind energy companies are currently well below those of other renewable energy sectors, which could represent an attractive return expectation within this industry.



The systematic diversified strategy of the BBGI Clean Energy 100 Index has produced an annualized return of +10.96% since 1999 against +5.08% against

Comments by sector:

Solar : +4.04%

Polysilicon production capacity is set to increase by +50% during the year, depending on the number of factories currently under construction. If all the announced projects go ahead, the total could almost triple. Although demand for solar energy is growing rapidly, we believe this growth will create an oversupply, which is a bearish signal for prices. Most producers have variable costs estimated at less than $10 per kilogram, which could be a floor for prices. While the drop in polysilicon prices is good news for most players in the solar industry, it could reduce margins for raw material producers, including GCL Technology, Daqo, Xinte, Wacker Chemie and OCI. Indeed, Wacker Chemie's profitability could falter as polysilicon prices approach their pre-pandemic lows. Against the backdrop of the recent decline in raw materials prices, Wacker Chemie's Ebitda margin contracted to 15% in the second quarter, compared with around 28% a year ago, and our scenario analysis suggests that full-year figures could be similar. Total sales revenue fell by around -20% to 1.75 billion euros in Q2, reflecting a drop in sales price and certainly not in quantity, as demand for solar energy is set to grow by +30% by 2023.

Biofuel: +14.16%

Margins on renewable diesel are under pressure due to the saturation of renewable credits and the contraction of diesel prices, which are weighing on project profitability. Our analysis indicates that projects generate an internal rate of return of around 30% at $1.50-1.75 per gallon gross margin, depending on investment costs, but can fall below 10% below $1.25 per gallon. The launch of numerous new projects is putting additional pressure on margins, which could call into question final investment decisions on current projects. Input costs are set to rise as the production of renewable diesel increases, and the scope for expanding the choice of feedstocks for existing processing technologies is limited. Each gallon of hydrotreated oil requires around 8 pounds of grease. To reach a capacity of 345,000 barrels per day in the United States, over 42 billion pounds of raw materials would be needed. According to our calculations, this would consume almost the entire US supply of raw materials from 2021 onwards, and account for around 7% of IAE's projections for global availability of fats, oils and lubricants in 2027. Premiums on waste and residues are likely to rise, as vegetable oils account for around 85% of the world's available fats.

Energy Efficiency: +7.63%

This month's top performer in our energy efficiency segment is the American company **Plug Power**. Its aim is to create a hydrogen ecosystem, from production and storage to delivery to the customer. They have created the first economically viable market for H2 and fuel cells. The company has deployed over 60,000 fuel cells and 180 recharging stations, more than any other company in the world. In June, the European Commission awarded $21.8 million to a consortium of companies including Plug Power to create the first offshore hydrogen production platform. Plug Power will produce a 10MW electrolyzer for the HOPE (Hydrogen offshore production Europe) project. The project will produce up to 4 tonnes of hydrogen per day in the North Sea near Belgium, which will then be transported to the mainland by pipeline. The electricity used will come from power purchase agreements, which will certify that it comes from renewable energy, and the water will be pumped from the sea and then desalinated. The hydrogen produced will supply small industries in Belgium, northern France and the southern Netherlands. Plug power's share price soared by 24% in June.

Wind: +3.29%

With steel prices having fallen sharply, we expect wind turbine manufacturers' profitability to improve in the medium term. At the same time, turbine manufacturers have managed to pass on some of the increased cost of production to consumers by raising the selling price by +20% from the 2019 low point. Looking ahead to 2023-2025, we expect sales prices to remain high, as many orders have already been priced contractually. However, in the medium term, the trend could be back towards lower prices. In addition, wind turbine manufacturers' margins could be boosted by the expansion of service activities, which tend to be more lucrative. The Vestas unit, for example, recorded an operating margin of 21.4% in 2022 despite a loss at corporate level. Nordex and Chinese manufacturer Goldwind reported similar margins for their service divisions last year, and service revenues grew at a strong double-digit pace for most manufacturers.