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THE VALUE LINE®

Climate Change Investing Service

Value Line®

STOCK SELECTION SERVICE

IN THIS ISSUE

Welcome to the sixteenth issue of *The Value Line Climate Change Investing Service*. This publication, designed for the climate-conscious, profit-oriented investor, seeks to provide key climate news and analysis alongside a managed portfolio of twenty stocks, chosen by our analysts, which stand to benefit from responses to climate change. Selections are vetted based not only on time-tested financial measures, but also the potential impact of climate change and measures taken to combat it on their business. Our selections fall into two main groups: businesses that are focused on providing environmental solutions, and those that are likely to thrive in a changing climate. Every issue features new updates to our portfolio.

In order to help put our selections into context, subscribers will also receive concise reports covering pertinent scientific and economic developments, along with analysis of how these developments could impact their investments.

THE PROS AND CONS OF DESALINATION

By Nathaniel Eakman

Summer is in full swing, and for many across the south and central United States, it's shaping up to be one of—if not the—hottest seasons in history. If this summer does manage to take the title, it may not hold it for long—the previous record was set just last year, and as global warming progresses, this summer certainly won't be the hottest that it gets. As temperatures continue to rise, many are worried about how this might affect the world's supply of potable water and about what might be done to supplement it in the face of heat and drought. One commonly touted solution is desalination—the process of removing salt from water in order to make it safe for drinking. Such technology is already widely used; in the United Arab Emirates, for example, 42% of the country's potable water is produced via desalination. However, desalination is not without its costs. For one, the process is extremely energy intensive. Returning to the example of the UAE, the federation's desalination efforts are responsible for more than 20% of its CO_2 emissions. Desalination can also be destructive to wildlife, as the intake valves that suck in seawater for processing also pull in fish and other marine life, which are subsequently killed. Furthermore, the brine that is left over as a waste product after the salt is removed from the newly-drinkable water is commonly dumped back into the ocean, destroying habitats as it alters the chemical balance of the water. Despite these drawbacks, however, the fundamental problem remains, with one study published in the journal *Science of the Total Environment* projecting that nearly half of the world's nations will be experiencing water shortages by 2050. Thus, the question becomes not whether desalination is an option—as it may be not only an option, but a necessity—but whether it can be made sustainable.

To answer that question, we will begin by laying out the methods currently used for desalination. Broadly, there are two main categories: thermal processes and membrane processes. Thermal desalination is achieved by boiling water to vapor, thereby separating it from salt and other impurities. This process can be simple—as with solar distillation, which uses sunlight to heat and evaporate water—or highly complex. In the case of multi-stage flash distillation, for example, water is heated and compressed, then passed through a series of decreasingly pressurized chambers, causing it to rapidly boil and vaporize as it is allowed to expand. In any version, though, the end result is the same: pure water is boiled away, condensed, and collected. Membrane-based processes, meanwhile, filter water in order to remove salt and impurities. Some, such as electrodialysis, exploit the ionic charge of salt molecules and other impurities in order to draw them through membranes, separating them from pure water. Others, like reverse osmosis, use pressure to force water through a membrane, sifting out unwanted particles.

All of the methods have different drawbacks. Solar distillation is environmentally sustainable, but also slow and difficult to use at scale. Other thermal methods consume tremendous amounts of energy due to the high efficiency with which water stores heat. Electrodialysis membranes are expensive and require frequent replacement, and reverse osmosis requires that water be pretreated with chemicals and produces a great deal of waste brine. Many methods also require that water be treated again after purification, to re-add beneficial minerals that were stripped out along with salt, and all potentially damage wildlife at the points where their feed water is taken in.

Given these problems, two broad solutions emerge beyond the basic step of repairing and improving water systems so as to eliminate waste and leakage. Desalination can be made sustainable either indirectly, through improvements to electrical generation in order to reduce the impact of energy-intensive processes, or directly, by developing better methods of capturing sunlight for solar distillation More incremental steps toward sustainability may be able to be realized by reducing the costs of electrodialysis, better disposing of wastewater, and improving seawater intakes. While opportunities to invest in direct improvements to desalination are currently limited, several companies in our portfolio offer exposure to the sort of broad improvements that support sustainable desalination indirectly. In particular, wind turbine manufacturer TPI Composites is a player in the shift to sustainable energy, while Mueller Water Products offers a range of technologies useful for managing water systems and detecting leaks.

On the following pages, you'll find The Value Line Climate Change Investing Portfolio. In addition to our 20 selections, chosen by specialized analysts within the Value Line Research Department, we provide in-depth commentary and analysis explaining our underlying reasoning. We will also regularly highlight specific stocks that merit special attention by investors seeking to build and maintain a climate-conscious portfolio. As this is an actively managed portfolio, we will be rather aggressive when it comes to making trades; if individual components no longer merit inclusion, such as if a company experiences operational problems or their equity valuation becomes extended, we will quickly recommend that the position be exited and the resulting funds allocated to our new selection. In order to receive updates in the timeliest possible fashion, we encourage all subscribers to provide their email addresses.

For subscribers interested in jumping right in, we suggest investing an equal-dollar amount in each of the 20 stocks listed in the portfolio table on the following page. Should individual components come to make up an outsized or undersized position within the overall group, we will discuss rebalancing as the need arises. Above all, our goal is to build and maintain a profitable portfolio of stocks whose underlying companies stand to benefit from responses to the changing environment.

THE VALUE LINE CLIMATE CHANGE INVESTING PORTFOLIO

Company	Ticker	Our Rec.	Industry	Market Cap (Mil. $)	Stock Price	Dividend Yield	Current P/E	Inception Date
Air Products & Chem.	APD	Buy	CHEMDIV	55,971.07	233.37	2.57	22.62	11/8/2021
Crown Holdings	CCK	Buy	PACKAGE	13,085.95	93.25	0.83	11.76	6/14/2022
Edgewell Personal Care	EPC	Hold	HOUSEPRD	1,900.52	33.01	1.67	12.83	3/8/2021
Enphase Energy	ENPH	Buy	POWER	27,635.55	174.94	0	87.67	2/1/2022
Essential Utilities	WTRG	Buy	WATER	11,866.30	41.5	2.4	23.53	3/8/2021
First Solar, Inc.	FSLR	Hold	POWER	7,640.94	62.9	0	256.12	3/8/2021
Ford Motor	F	Buy	AUTO	55,973.61	11.46	2.96	17.53	1/4/2022
General Eletric	GE	Buy	DIVERSIF	84,927.31	65.32	0.41	20.94	4/11/2022
Lindsay Corp.	LNN	Buy	MACHINE	1,431.86	116.97	1.01	20.15	5/11/2022
Lowe's Cos.	LOW	Buy	BUILDSUP	125,477.40	172.1	2.18	13.21	3/8/2021
Mueller Water Prod.	MWA	Hold	MACHINE	1,930.93	10.94	1.87	16.55	3/8/2021
Nikola Corp.	NKLA	Buy	HEAVYTRK	2,936.78	5.25	0		6/7/2021
NRG Energy	NRG	Buy	POWER	10,917.82	37.83	3.07	2.6	3/8/2021
Ormat Technologies	ORA	Buy	POWER	4,650.05	74.94	0.58	56.67	3/8/2021
Owens Corning	OC	Hold	BUILDING	9,278.30	78.1	1.48	7.88	3/8/2021
Pentair plc	PNR	Hold	DIVERSIF	8,248.50	44.19	1.68	12.96	3/8/2021
Tesla, Inc.	TSLA	Buy	AUTO	751,721.60	657.53	0	67.86	2/1/2022
TPI Composites	TPIC	Buy	POWER	571.54	13.06	0		9/7/2021
Trane Technologies plc	TT	Buy	MACHINE	32,242.28	123.38	1.94	18.26	8/23/2021
Waste Management	WM	Hold	ENVIRONM	65,208.17	146.17	1.66	26.88	3/8/2021

P/E (Price to Earnings Ratio) is blank for stocks with losses.

PORTFOLIO HIGHLIGHTS

The Climate Change Investing Service Portfolio has outperformed during the broader market selloff since our report last month. The group of 20 stocks declined a modest 1.1% compared to a 6.5% decline for the S&P 500 during the same period. Two stocks were up more than 25%, although one, the wind turbine blade manufacturer TPI Composites (TPIC), was rebounding from a recent low. Meanwhile, Enphase Energy (ENPH) was up 28% on expectations that it may make inroads into the European solar market as replacements for Russian fossil fuels take on greater importance in the region. It is worth noting that almost three quarters of the companies in the portfolio performed better than the market during the decline over the last month, and more than a quarter of the stocks were up in absolute terms. On the negative side, Beyond Meat (BYND) continued to weigh on results and was down another 15%, as shares without near-term profitability remain a focus of investor risk reduction efforts. Our second largest percentage loss came from Tesla (TSLA), as share sales by founder Elon Musk to fund his Twitter (TWTR) offer and pandemic-related plant closures in China hurt results. The stock price of the electric vehicle maker was down almost 10% in the period.

PORTFOLIO CHANGES

This month we are adding aluminum beverage can and food can maker Crown Holdings (CCK) to the portfolio. The beverage can market has been capacity constrained lately as a broad shift from plastic bottles around the globe has added to what was already growing demand. Aluminum cans are much more environmentally friendly compared to plastic and have several positive attributes over the latter at present. We expect demand for aluminum beverage containers to increase almost 10% in the year ahead.

Plastic packaging for both beverages and food is facing several headwinds. First, plastic is made using resin, which comes from fossil-fuel derived petrochemicals, the price of which has soared along with the price of oil and natural gas inputs. In addition, resin is also capacity constrained. While the cost of tin plate used in cans has doubled during the past 12 months and aluminum is up 75%, the price of resin has risen even more sharply, giving a cost advantage to the metal containers. Second, 90% of today's aluminum cans are recyclable, and Crown has a goal of 100% of its output not reaching landfills. Plastic is not biodegradable, and many countries are passing regulations that require sustainability and limit plastic usage. Corporate customers are also adopting more environmentally friendly goals to lower carbon footprints as well. While the shift from plastic is well underway today, the planning of new production facilities is often a multiyear process and as we look forward, we expect the transition to accelerate over the next year or two.

Management has handled the challenging inflationary conditions very well. Many raw material cost increases are contractually passed through to customers, so there is no squeeze on profitability from soaring commodities. In addition, due to the tight capacity constraints in almost all the regions of the globe, price increases beyond the rising cost of labor and shipping have not yet been met with any

pushback from customers. In fact, most of the firms that Crown supplies are more concerned about securing availability of packaging than cost pressures at the moment. Most finished products package essential goods or consumer staples, and as a result there has been virtually no decline in demand from the rising prices. We also think the business should hold up well if there is an economic slowdown given its defensive characteristics.

Another favorable attribute of Crown Holdings is that it manufactures the equipment used to produce packaging materials and containers. In fact, this accounted for almost 25% of operating profits last quarter on a 20% increase in sales. Given that capital spending budgets in the industry are up sharply, we think this unit will see solid demand for at least the next couple of years.

All told, we forecast earnings per share for CCK to increase a healthy 8% this year and accelerate to 12% next year, regardless of any slowdown in the economy. The shares are trading at only 12 times our 2022 estimate. The stock is ranked Highest (1) for Timeliness in the year ahead and has over a 20% return to the midpoint of our 18-month Target Price Range.

To make room for Crown Holdings, we are going to sell Beyond Meat (BYND), which has failed to recover after its long-running drop. While it is the only pure play in artificial protein, its new products have tended to fade after early promise. We will sell and wait for other publicly held entrants in this space to emerge down the road. While we like Beyond's distribution through large fast food and grocery chains and believe that the plant-based protein market will continue to grow, profitability remains elusive, with most sales growth coming from new products, as most products that are more than a year old have seen revenues fall year over year. That signals that customers have not become enamored with any of the company's offerings, whether it be plant-based chicken nuggets at KFC or the Beyond burger at McDonalds. Given the continued losses we project out through 2023 and its Below Average Safety rank, we think it best in the current environment to concentrate on more defensive and less speculative issues.

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