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The response to the Coronavirus epidemic

Investing to improve waste management

Opinion Paper

Covid-19 cases now exceed 90,000 with over 3,000 deaths and the majority of these occurring in mainland China. Although the situation continues to improve in China with reduction of new cases, we are seeing some countries with new outbreaks that expands the footprint and may extend the duration and thus uncertainty of the epidemic. Compared to the 2003 SARS epidemic which, in total, affected 8,000 and claimed the lives of almost 800 people, all within China; Covid-19 has a much lower death rate currently but the number of affected continues to grow and is expanding internationally, and the percentage of deaths may increase as the number of infected is contained.

There are likely parallels between what happened with SARS in 2003 and with the current Covid-19, although the economic impact globally is far more significant. Events that unfolded subsequent to SARS were increased vigilance on sanitation by the Chinese government, focus on healthcare and new regulations to enforce compliance in health administration, waste treatment and policies to help contain contagious diseases.

As long term investors we believe in investing where there is demand and critical need and long-term drivers of growth. Such situations vary in magnitude; however, we believe that this recent crisis will increase emphasis in the area of health and waste sanitation systems in China. Impact investments in this area may provide strong, measurable results because of the surge in demand as well as financing from the government to accelerate the pace of adoption.

Inevitably, the Covid-19 epidemic in China is putting ever more focus on the need to address sanitation and regulatory enforcements through proper waste treatment, as well as to upgrade and improve health services. We see indications that the Chinese government is doubling down on enforcing regulatory compliance of sanitation for the sake of public health.

The first liquidity injections and interest-rate cuts have been delivered in China along with tax cuts, government aid and other fiscal as well as regulatory measures, as was done to address the SARS crisis 17 years ago[1]. With the government strengthening regulations and enforcement regarding the quality of food, as well as the proper treatment of sewage and industrial waste, the need for Chinese clean energy and environmental investments should increase.

This increased need to address waste and pollution reflects the requirement to combat the consequences of lax regulation and the delay, and possibly complacency by industrial companies, to prioritize the importance of reducing contamination and pollution. Indeed we witnessed the clear changes that happened subsequent to the SARS epidemic where more resources and services were put in place for city sanitation, waste management and hospital waste treatment, which improved visibly not only in China, but also in Hong Kong.

[1] Institute of Medicine (2004). Learning from SARS. Preparing for the next disease outlook

We can therefore see a natural correlation between what happened in 2003 with SARS and what will likely happen this time. First, there was a “blip” in terms of an economic downturn during SARS which persisted for around three months, and then soon after, the economy recovered quickly and in force. The anomaly of the “blip” reduced China’s GDP by one percentage point in 2003, but soon after GDP growth recovered quickly returning to its normal growth path[2].

Given the scale of this crisis, the projected 5.8% GDP growth forecast in 2020 is likely to be hit by at least one percentage point if not more depending on how long this epidemic continues. The spillover effects on the global economy today are also likely to be greater than occurred in 2003 due to the significant integration of the Chinese economy with the rest of the world and the size of China’s economy. Today, China represents close to 30% of world’s GDP growth and 19% of world GDP. In 2003, China represented just 4% of world GDP[3].

Our current expectation is that economic recovery will start to take hold from April when the epidemic will hopefully have turned the corner helped by warmer weather that normally diminishes the potency of viruses and should result in the number of cases starting to drop noticeably. At this point we assume that businesses in the areas of city sanitation, waste management and hospital waste treatment will be supported by more readily available financing of projects driven by the government focus on addressing health related services and systems.[4] As a result, businesses in such green industry activities are likely to recover as soon as staff can return back to work. Already the government is loosening the lending policies for these companies in order to more quickly scale and expand the scope and size of the projects they are working on.[5] China’s waste market grew at over 11% CAGR over the last five years, and is expected to continue to grow at 7.6% over the next five years.[6]

According to the World Economic Forum report[7], by 2030, China’s volume of waste is projected to be double America's volume of municipal solid waste. However, the intensity and density of the cities’ population will create substantial demand in concentrated areas for the treatment of the waste produced.

A key focus for China to reduce the accrual of waste has been to reuse and recycle industrial waste. In 2015, approximately 65% of all the solid industrial waste in China was reused, yet the goal of the "Made in China 2025" plan was to increase the recycling rate by up to 79% by 2025 according to industry reports from Mordor Intelligence[8].

To that end, the government is encouraging financing of projects by lenders to build out infrastructures to address waste treatment. To a large extent the recycling, reuse and treatment of waste is driven by the need to address where to dispose of the waste. This is predominantly driven by the “cost of disposal” and the health hazards of piling up waste, as opposed to just the economics of the value of the by-products generated by the recycled or treated waste.

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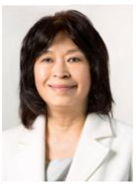

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[2] National Bureau of Statistics of China (February 2020)

[3] IMF-World Bank (October 2019) World Economic Outlook database

[4] Source: Reuters interview Zhong Nanshan, Feb 2020

[5] Deutsche Bank Research (January 2020). Coronavirus Update: policy messages from the top

[6] Morodor Intelligence (2019). China waste management market 2020-2025

[7] WEF (December 2019). The Global Risks Report 2020

[8] Morodor Intelligence (2019). China waste management market 2020-2025

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Emerging Markets - Exposure to emerging markets generally entails greater risks than exposure to well-developed markets, including potentially significant legal, economic and political risks. The prices of emerging market exchange rates, securities and other assets are often highly volatile. Movements in such prices are influenced by, among other things, interest rates, changing market supply and demand, external market forces (particularly in relation to major trading partners), trade, fiscal, monetary programmes, policies of governments, and international political and economic events and policies.

RISKS RELATED TO INVESTMENTS IN THE CLEAN TECHNOLOGY INDUSTRY

Uncertainty of the Clean Technology Market

The market for clean technology products is emerging and rapidly evolving, and its future success is uncertain. If clean technology proves unsuitable for widespread commercial deployment or if demand for clean technology products fails to develop sufficiently, the Portfolio Companies [a] could be unable to generate enough revenue to achieve and sustain profitability. In addition, demand for clean technology products may not develop or may develop more slowly than anticipated. Many factors will influence the widespread adoption of clean technology and demand for clean technology products including the cost effectiveness, performance and reliability of clean technology and availability of government subsidies and incentives.

Resources

The performance of certain Portfolio Investments of CEEF may be substantially dependent upon prevailing prices of oil and natural gas. As energy derived from fossil fuels and other non-low carbon sources becomes more expensive, the value of low carbon energy and low carbon energy technology increases as well. Conversely, if new oil, coal or natural gas deposits or other non-low carbon sources are found, if the cost of producing energy from these non-low carbon sources decreases significantly for other reasons or if the prices of oil and natural gas falls, the attractiveness of low carbon energy sources may decrease, thus adversely affecting the rate of return of the Fund. Historically, the markets for oil and natural gas have been volatile and such markets are likely to continue to be volatile in the future. Prices for oil and natural gas are subject to wide fluctuations in response to relatively minor changes in the supply of and demand for oil and natural gas, market uncertainty and a variety of additional factors that are beyond the control of the Fund.

Decreased Demand for Energy as a consequence of the Global Economic Slowdown

Recent developments in the global financial markets have resulted in a slowdown in global economic activity and growth which has resulted in a decreased demand in energy resources. As the demand for energy decreases, the demand for both fossil based fuel sources and renewable sources of energy will decrease, impacting the profitability of renewable energy technologies and businesses and as a result the profitability of the Fund if it were to make investments in such technologies and businesses.

Environmental Regulation

Environmental laws, regulations and regulatory initiatives play a significant role in the clean technology industry and can have a substantial impact on investments in this industry. The Manager will seek to evaluate carefully the expected impact of environmental compliance on all potential Portfolio Investments. The Fund may invest in companies that are subject to changing and increasingly

stringent environmental and health and safety laws, regulations and permit requirements. There can be no guarantee that all costs and risks regarding compliance with environmental laws and regulations can be identified. New and more stringent environmental and health and safety laws, regulations and permit requirements or stricter interpretations of current laws or regulations could impose substantial additional costs on the Portfolio Investments or potential Portfolio Investments. Compliance with such current or future environmental requirements does not ensure that the operations of the Portfolio Companies will not adversely affect the environment or the people or that such Portfolio Companies will not be required to incur additional unforeseen environmental expenditures. Moreover, failure to comply with any such requirements could have a material adverse effect on Portfolio Companies and there can be no assurance that Portfolio Companies will at all times comply with all applicable environmental laws, regulations and permit requirements. Past practices or future operations of such Portfolio Companies may also result in personal injury or property damage claims.
Under certain circumstances, environmental authorities and other parties may seek to impose personal liabilities on the limited partners of a partnership (such as the Fund) subject to environmental liability.

Reduction of Governmental Support for Clean Technology

Clean technology projects often enjoy wide support from national, state and local governments and regulatory agencies designed to finance development of clean technology, such as tax credits, various low carbon portfolio standard requirements, low carbon energy credits and utility programs, such as system benefits charge and customer choice programs. The combined effect of these programs is to subsidize in part the development, ownership and operation of clean technology projects, particularly in an environment where the low cost of fossil fuel may otherwise make the cost of producing energy from low carbon sources uneconomic. Any reduction in or elimination of these programs may have an adverse effect on development of clean energy resources and the Fund's Portfolio Investments.

(a) A Portfolio Company is a company or entity in which CEEF will hold an investment