

Mine your waste

Investors need to give full consideration to sustainability trends in a resource-constrained world. Waste management offers an attractive long-term investment opportunity.

It may be a truism to say we are living in a resource-constrained world. Recent spikes in commodity prices may hint at future developments. However, few institutional investors take long-term sustainability trends such as scarcity of resources and energy or climate change into full consideration in their investment approach. At SAM we believe this is not smart. One point is indisputable: sustainability trends such as climate change, reliability of energy supplies and scarcity of resources will be defining issues in decades to come.

Sustainability investing therefore means integrating economic, environmental and social factors into traditional financial analysis in order to benefit from opportunities presented by sustainability trends, and managing the associated risks, leading to a superior long-term risk/return profile. Given these sustainability trends, in SAM's view

waste management represents an attractive long-term investment opportunity.

THE WASTE MANAGEMENT VALUE CHAIN

When investing in the waste management industry, it is useful to keep the value chain in mind in order to better understand the dynamics driving the different stages and select companies operating in the most attractive areas. It is also possible to improve positioning of the principle technologies that are in use and required to be competitive when bidding for new projects. Technologies evolve constantly to meet the environmental requirement of modern waste management solutions and stricter regulations, which also creates investment opportunities on the equipment side. There are waste management companies that are active along the whole value chain and many other smaller companies focusing just on certain activities or technologies.



The market for municipal waste collection is very fragmented.
Source: Shutterstock

The waste value chain is usually broken down into two main categories: collection and disposal. Collection is further divided into municipal and industrial, according to the client typology. Waste is usually sorted in centralized transfer stations, although some systems favor separated collection. The disposal category includes all the technologies for the treatment and final disposal of the many waste types. The efficiency of each disposal technology depends on the type of waste treated.

The collection aspects of the value chain have similar characteristics to a traditional utility service: long-term contracts, price negotiation with public authorities and a developed regulatory framework. A large proportion of collection is still provided by municipalities, although the trend of outsourcing to private companies still exists. In Continental Europe, the public sector still has a strong presence, especially for municipal waste collection. Private companies have a greater presence in industrial collection. Firms are more inclined to select one-stop solutions for their waste disposal by outsourcing to private waste management companies.

The market, especially in collection, is very fragmented with many small and local players. The entry barriers to the collection market are low as the infrastructure required is not huge. Operating margins are also generally lower than for the disposal portion of the chain. Volumes are more

stable for municipal collection as waste production is less sensitive to economic growth than industrial collection, where the correlation with industrial production is very strong. On the other hand, demographic trends are more relevant to the municipal waste market.

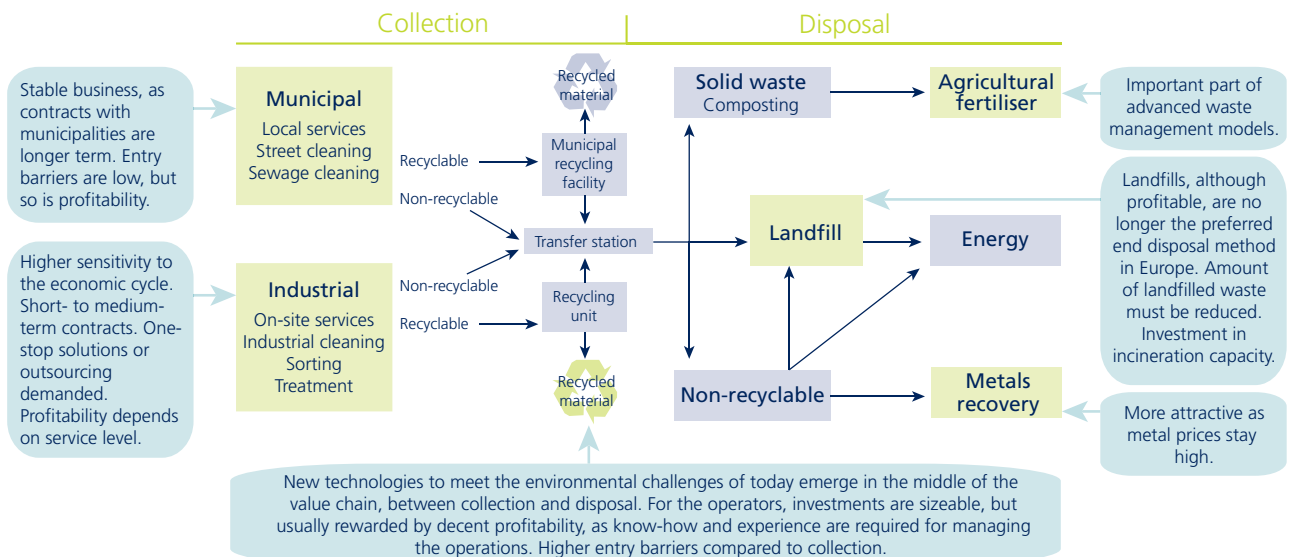
From the investment perspective, the collection portion on its own offers little interest, given the competitive landscape and the low level of technological expertise required. On the other hand, it is an important area for integrated waste management companies operating over the whole value chain as it provides the raw material to supply treatment and disposal facilities.

LEGAL FRAMEWORK GETS TOUGHER

More stringent requirements for recycling and separation of waste increase the importance of intelligent transfer stations where, instead of just being stored and then transferred to the final disposal place, waste is mechanically sorted, recycled where possible and partially treated using technologies such as mechanical biological treatment (MBT).

It is in the area between collection and disposal that the most innovative technologies emerge, motivated by the need to improve the quality of the input materials for disposal facilities (incineration, landfill, composting) to increase the efficiency of the final treatment as well as the propor-

Figure 1: The Waste Value Chain
 Source: SAM



tion of waste that is recycled. Another driver is to replace manual sorting with mechanical sorting, for both efficiency and safety reasons. The majority of the newest waste management solutions include an advanced sorting station. Given the higher level of expertise and technology as well as the sizeable investments required, margins are usually higher than for the collection business and the competitive pressure is lower.

In the disposal part of the value chain, waste is treated using the most appropriate technology. Scarcity of space, stricter environmental regulations and the availability of alternative technologies make it less attractive simply to put all waste in a landfill. Organic waste is usually processed using biological treatment solutions such as controlled decomposition. Sorting, drying and composting of the organic portion of the waste helps dramatically reduce the quantity of waste to be landfilled or incinerated. Additionally, landfill gate fees in Europe are rising to meet the landfill diversion targets set by the European Union. The fraction of waste that remains after recycling and biological treatment is usually used to produce energy (thermal, for industrial applications, heating or electricity) in waste-to-energy plants or put in a landfill.

Waste-to-energy is becoming more attractive as the technology is now more affordable and all issues relating to

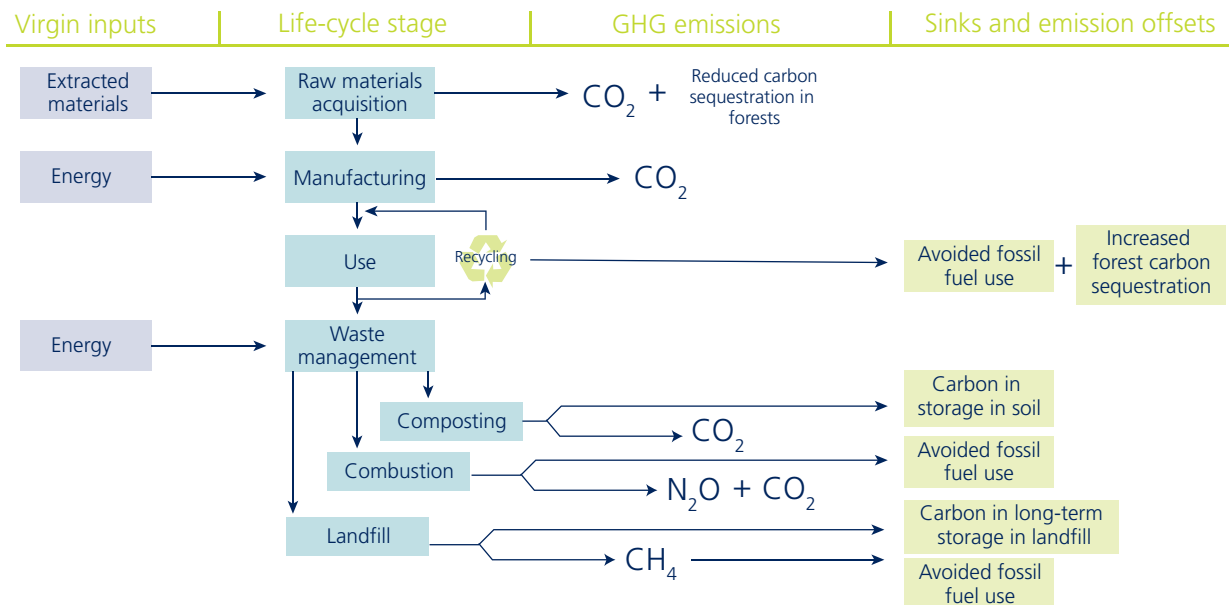
emissions in the air have been solved. Incinerators require a lot of initial investment for approval and construction: once the plant is running, returns on investment are above average within the value chain.

Landfills are still quite profitable and offer a good return on investment. Landfilling is still the most widespread end-disposal solution for countries with weak environmental legislation and high availability of cheap land. Densely populated areas with strict environmental standards tend to recycle more, compost organic waste and incinerate the residual waste. On the other hand, within Europe, the volume of waste diverted to landfills is expected to continue to shrink, as newer, environmentally friendly technologies like MBT, composting and incineration attract additional investments.

WASTE MANAGEMENT AS CLIMATE CHANGE MITIGATION

Every waste treatment technology causes some emissions into the air or soil: landfills are often highlighted as causing a lot of pollution from methane released into the air and soil contamination from the leachate. Newer landfills are fitted with landfill gas capture systems, and the leachate is collected and treated before release. Collected landfill gas can be used to produce energy, reducing the demand for fossil fuels. Environmental problems associated with waste incineration are mainly linked to emissions into the air (flue gases and particulates) and disposal

Figure 2: Waste Management Value chain from the Greenhouse Gas Emissions Perspective
 Source: SAM



of the ashes. Air emissions of pollutants is reduced through filtration and optimization of the combustion process. Ashes are treated as any other hazardous waste, since they often contain high concentrations of heavy metals such as lead, cadmium, copper and zinc. The heat produced by incineration is distributed directly or used to generate electricity, thereby helping to reduce the consumption of fossil fuels. Demand for raw materials is reduced considerably by increasing recycling and reuse.

CONCLUSION

Waste is a precious source of raw materials and energy. The most advanced, sustainable waste management strategies focus on the application of appropriate treatment for each waste category, aimed at maximizing the

rate of material recovery and reducing the impact on the environment. The most recent legislative changes in Europe aim to divert untreated waste streams from landfills towards more sustainable waste management technologies. Furthermore, the focus of waste management strategies takes account of the impact on climate change, the convergence of the waste and energy industries and the move towards higher levels of recycling. Given the endurance of these sustainability trends the waste management sector offers interesting long-term investment opportunities.



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Non polluting facility which is producing gas based on organic waste materials.
Source: Shutterstock

SAM – CREATING SUSTAINABLE VALUE

SAM was founded in 1995 as one of the world's first asset management company for sustainability investments. Today, the company ranks among the globally leading managers of sustainable investments and theme-based funds in the areas of water, climate and clean energy. Its worldwide clientele comprises banks, insurance companies, pension funds, family offices and private investors.

SAM has a comprehensive portfolio of theme-based products in the areas of new energy sources, water, new materials, healthy living and climate. In addition, it offers institutional investors a broad range of various investment solutions. SAM affords investors a great sense of responsibility and transparency in terms of their investments.

SAM evaluates and analyzes leading companies on the basis of industry-specific sustainability criteria considering economic, environmental and social dimensions. Integrating those future-oriented investment criteria into the company valuation and investment process represents the foundation of its investment philosophy. SAM's know-how is based on its proprietary, independent research approach and an active, international sustainability network.

Together with Dow Jones Indexes and STOXX, SAM has launched an entire family of sustainability indices to measure the performance of companies that hold a top position in their industry in terms of sustainability. Within the framework of this collaboration, SAM has compiled the world's largest sustainability database and analyzes annually more than 1,000 exchange-listed companies for the added value they generate in terms of economic, environmental and social criteria.

SAM and Robeco, a member of the Dutch Rabobank Group (S&P AAA), have entered into a strategic alliance in order to establish for product development, innovation and distribution purposes the world's leading platform for sustainability investments. SAM is headquartered in Zurich (Switzerland) and is present in Europe, Australia, the USA and Canada.

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