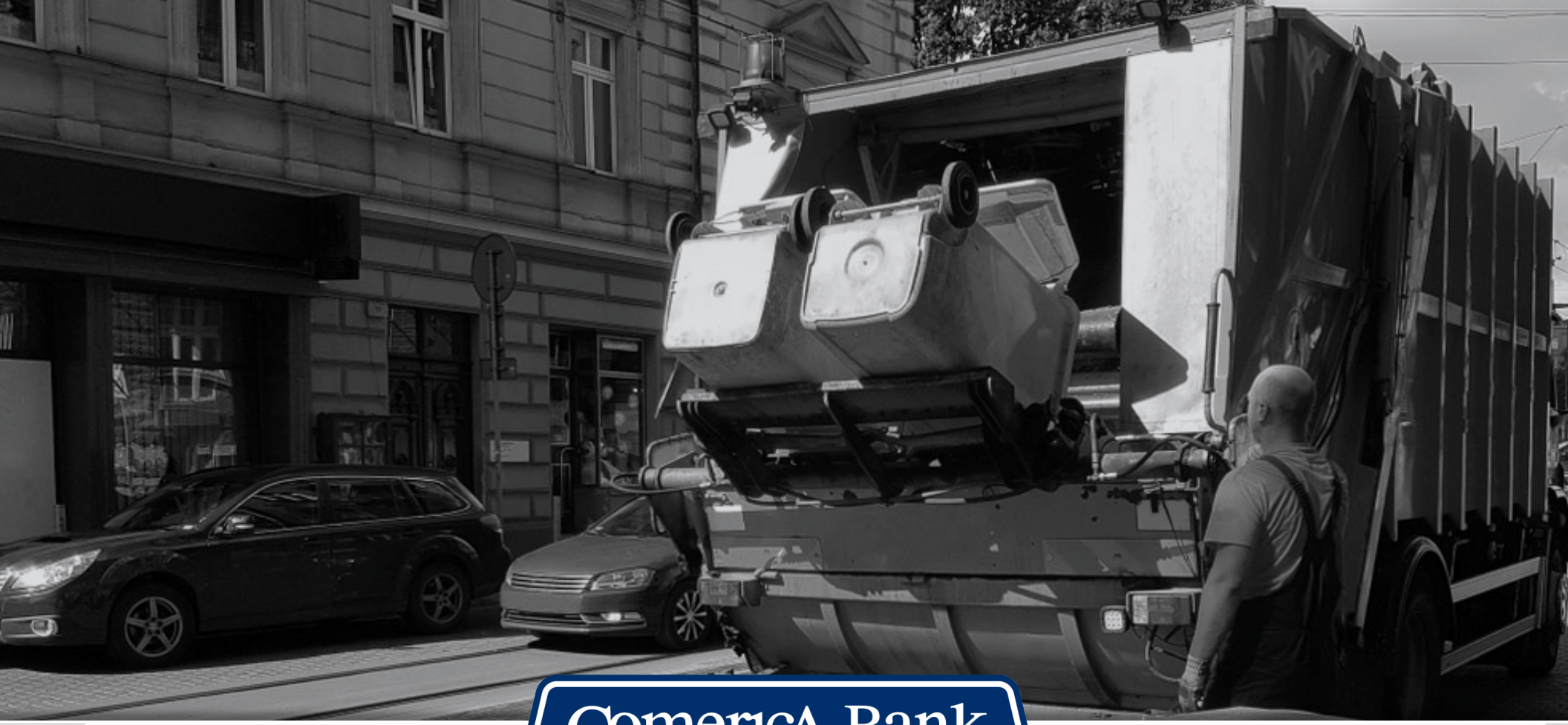

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Environmental Services at a Crossroads

Contents

Introduction

On one hand, organizations are contending with high costs for new equipment and services that, combined with a tenuous regulatory environment, create major challenges in terms of innovation.

On the other, businesses have the opportunity to grow in response to growing consumer interest in sustainability and the increasingly mainstream nature of recycling and similar waste management opportunities.

This leaves businesses with a difficult decision: Drive rapid innovation and risk high capital costs, or enact iterative modernization and risk falling behind fast-moving competitors. Which is right for your business?

Either way, strategic funding can help you adapt to the pressures impacting the environmental services sector.

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Pressure points in waste management

The global waste management industry is in a fairly strong position. Allied Market Research found that the sector:

- Was valued at $285 billion in 2016.
- Will expand at a compound annual growth rate of 6.2 percent from 2017 to 2023.
- Will be valued at approximately $435 billion by 2023.

The growth opportunity is real, but it comes in response to new challenges in the sector. According to the research firm, these issues include:

- Global economic growth is leading to increased consumption.
- Increased adoption of recycling and similar modern waste management services.
- Interest in emerging technologies and practices for waste collection and environmentally efficient disposal.

As market expansion is being driven by emerging capabilities, organizations that fail to adapt could find themselves falling behind and struggling to catch up.

Waste-to-energy demand on the rise

Increased interest in sustainable practices is one of the driving forces of today's environmental services sector. The result is a heightened demand for waste-to-energy conversion services, a trend that is rapidly disrupting the entire waste management sector.

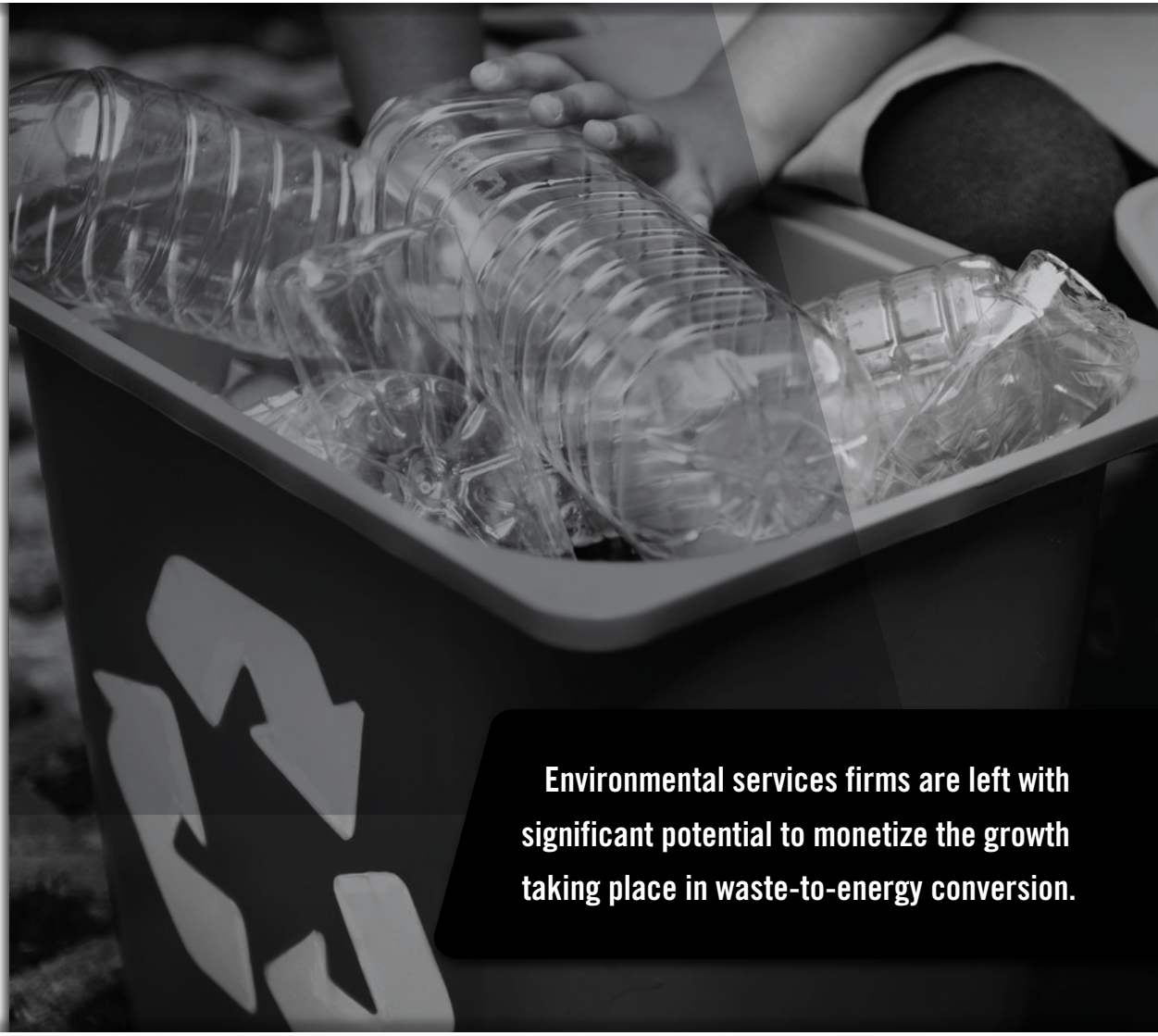
Transparency Market Research found that the global waste-to-energy industry will expand at a compound annual growth rate of 8.1 percent from 2013 to 2019.

In 2019, the sector will be valued at $31.8 billion compared to just $18.4 billion in 2012.

Technological shifts are leading the way in this transition. The study found that thermal waste-to-energy solutions are still garnering the largest share of the market, but biological solutions are starting to emerge as serious competition and gaining momentum quickly.

Case in point: Research shows opportunity in conversion

With waste creation expected to rise and consumers becoming more interested in recycling, environmental services firms are left with significant potential to monetize the growth taking place in waste-to-energy conversion. What's more, doing so doesn't require leveraging exotic or rare materials.



Environmental services firms are left with significant potential to monetize the growth taking place in waste-to-energy conversion.

For example, a study performed by the Earth Engineering Center of the City University of New York and funded by the American Chemistry Council, Plastics Industry Association and Canadian Plastics Industry Association found that:

- Huge quantities of non-recycled plastics are available to be converted into valuable gases, particularly methanol or ethanol.
- Increasing the amount of plastic blended with biomass in conversion leads to greater gaseous yields.

Developing waste collection strategies that prevent plastics from going to landfills can empower businesses to increase value from waste-to-energy conversion, but this requires innovation across operations.

Developing waste collection strategies that prevent plastics from going to landfills can empower businesses to increase value from waste-to-energy conversion.

Adjusting capabilities to monetize conversion

Taking advantage of opportunities in waste-to-energy conversion is similar to leveraging the commodities market: Creating value depends on efficiently collecting and sorting materials to maximize profitability once the goods are processed.

Generating revenue through waste-to-energy conversion starts in day-to-day waste collection processes and extends through the chain of operations. A few emerging tactics and technologies that can fuel the necessary innovation include:

- Self-sorting trash receptacles that use machine learning to automatically divide garbage.
- Connected devices that monitor container-fill levels to eliminate unnecessary collection.
- Telematics systems that give drivers and dispatchers real-time data to make better routing and scheduling decisions.

These types of waste collection advances can modernize everyday operations in such a way that organizations are better positioned to enact sustainable, valuable waste-to-energy conversion strategies.

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Change is inevitable, the choice is in how

Modernizing waste management operations to take advantage of waste-to-energy conversion is increasingly critical in a global climate focused on sustainability and efficiency. The key crossroads decision comes in how far to push the envelope and how much risk to take within the market.

Finding the right answer hinges on a deep analysis of your specific market situation, current organizational capabilities existing technical capabilities, and available partnership opportunities in your region.

Identifying the ideal method to modernize is difficult enough - funding that strategy adds another layer of complexity.

At Comerica Bank, we work closely as trusted advisors with our clients. We'll take the time to get to know your business, bring in our own industry expertise, and help you develop a funding strategy built to foster growth while minimizing risk.

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Comerica ranks first nationally among the top 25 U.S. financial holding companies, based on commercial and industrial loans outstanding as a percentage of assets, as of June 30, 2018. Data provided by S&P Global Market Intelligence.