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Sustainable Infrastructure: The Case for Middle Market Solutions

There is a great and growing need to finance middle market infrastructure projects that solve waste, wastewater, water and energy problems for municipal, utility and business customers in communities across the country.

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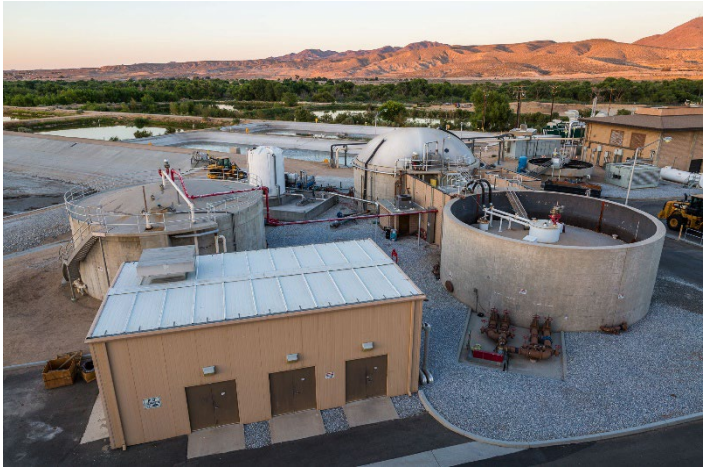
American Society of Civil Engineers ("ASCE") gave poor grades to America's waste (C+), wastewater (D+), water (C-), and energy (D+) infrastructure in its 2025 "Infrastructure Report Card", as part of its overall C grade of American Infrastructure.[1] Despite the $580 billion in funds from the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA), the latest ASCE grade indicates a pervasive need for better infrastructure.[2] ASCE's 2024 report "Bridging the Gap" estimates the funding gap in wastewater, water and energy infrastructure alone will still increase to more than $1.7 trillion by 2033.[3]



SoCal Biomethane is a middle market waste-to-energy project in an Opportunity Zone in Southern California.

Much of this investment is required to repair or replace outdated infrastructure that was originally constructed during the major public building programs of the mid-20th century, such as facilities constructed under the Public Works Administration and Works Progress Administration during the 1930s and 1940s. Accelerating demands related to the Energy Transition, the AI Revolution and other global trends, have also significantly transformed the country's infrastructure needs.

In the past few years, the adoption of AI to everyday lives has led to forecasts of a significant rise in data center energy load demand. AI applications consume substantially more electricity compared to traditional data processing tasks. For instance, a single AI task can require nearly ten times the electricity of a Google search[4]. Therefore, the data center share of US power consumption may increase from 4% to 9% by the end of the decade[5]. Failure to address these power needs can result in grid instability for local utilities, as well as restricted growth, higher costs and downtime risks for data centers. Battery Energy Storage Systems (BESS) offer a solution to these issues. By balancing supply and demand, BESS can stabilize the grid and support its reliability. For data centers, BESS can significantly reduce energy costs by participating in grid services and performing peak shaving to lower or eliminate expensive demand charges (the incremental charges to utility customers for drawing power from the grid during peak-demand hours.) North Sky's current investments with BESS developers highlight the critical intersection between AI advancements and energy infrastructure.

Additionally, demographic trends such as population growth and internal migrations have highlighted the strain on aging and capacity-constrained municipal infrastructure. For example, substantial investment in municipal wastewater-treatment facilities followed the passage of the Clean Water Act in 1972, but at the time the U.S. urban population had been stagnant at approximately 74% of the total population for more than a decade and this factored into capacity planning decisions.[6] Many of the wastewater treatment systems built during that time were designed for an average lifespan of 40 to 50 years, and are coming to the end of their lives right as the U.S. urban population has boosted to 80% of the total.[7] This is occurring as the U.S. has been "chronically underinvesting" in these systems, placing added pressure on increasingly budget-constrained state and local governments, as their Covid-related federal relief funds have been exhausted

Underinvestment and deferred or inadequate maintenance is not the only challenge facing America's environmental infrastructure system, nor the only associated opportunity for middle-market investors. Landfills account for 17% of U.S. methane emissions, which represented approximately 14% of total U.S. greenhouse gas emissions in 2022.[8] The EPA estimates that the comparative impact of methane is "28 times greater than CO_2," underscoring the need to address these emissions.[9] Much of this waste methane can be captured and processed into RNG as in North Sky's SoCal Biomethane Project in California, or converted directly into electricity such as in North Sky's prior LRI project in Washington state. Today, the EPA estimates that there are over 400 additional landfills that meet the standard for a future waste-to-energy facility.[10] This may suggest an opportunity for a large investor, but any given landfill gas project tends to be fairly small and requires limited capex to execute. For instance, North Sky's Project Golden Bear investment required less than $40 million in total capital expenditures. These characteristics make RNG projects a distinctly middle market opportunity. New

infrastructure will be needed to receive diverted organic waste that previously would have been landfilled and, as with landfill gas, this represents a distinctly middle- market opportunity given many such projects will likely be located at existing municipal waste management facilities and will utilize existing logistics networks. An overly large waste-processing facility runs the risk of having to source feedstock waste from far distances, increasing supply risk and transportation costs.

In recent years, growing awareness and concern about landfill capacity and methane production have led an increasing number of states to tighten regulations around what can be landfilled. Many of these regulations also mandate that organic waste, in particular, is to be diverted to other uses. For example, Rhode Island, where North Sky's Rhode Island Bioenergy Facility is located, has passed its Organic Diversion Law mandating that producers of large volumes of food waste must divert anything over 104 tons per year. New York, Massachusetts, Connecticut, California and Vermont have similar regulations in place, as do several large municipalities such as Portland, Oregon and Austin, Texas. Other states have bills working through their legislative processes. New infrastructure is needed to receive the diverted organic waste and, again, this represents a distinctly middle market opportunity given many such projects will likely be located at existing municipal waste management facilities and will utilize existing logistics networks. An overly large waste-processing facility runs the risk of having to source feedstock waste from far distances, increasing supply and transportation cost risk.

Such state and municipal waste mandates, as well as significant energy load demand, are driving a need for new infrastructure that harnesses agricultural, landfill and liquid waste to produce renewable fuels, clean power and recycled materials. North Sky believes successful waste-to-value or -energy projects will establish competitive barriers by solving a local or regional waste disposal problem; whereas, projects siphoning waste from other beneficial uses will continue to face challenges and are more easily supplanted by competitors. Additionally, North Sky believes small-scale energy storage projects will be critical in supporting energy load growth and will be the backbone to the AI revolution. Ultimately, North Sky believes such market dynamics are ideal for a middle market infrastructure approach.

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