

Problem: Cape Cod's MSW, collected at 15 transfer stations, is 30% organic material by weight. If the organics can be cost-effectively diverted, market-competitive green fuel can be produced.

Solution Target: Develop a county-wide collection program to minimize source contamination. Modify and install a BiogasTiger AD to reliably handle up to 50% contamination prepared feeds.

Yarmouth, MA has led the way for Barnstable County in identifying readily available pre-consumer, commercial, and wastewater organics on Cape Cod and has pursued a plan to roll out a phased implementation strategy, starting this year, with a privately-owned biosolids anaerobic digestion ("AD") facility. Now, buttressed by a recent MSW report prepared for the Cape Cod Commission – the regional land use planning, economic development, and regulatory agency that serves the citizens and 15 towns of Barnstable County – it is clear that in excess of 30K tons per year of non-biosolids organics is available for an expanded AD facility in Yarmouth. <https://www.capecodcommission.org/our-work/solid-and-hazardous-waste>

State of Industry - Despite the best efforts of any municipal diversion program, contamination inevitably comingled with organics diverted from MSW waste streams will make such an effort a challenging technical design space. While pre-consumer and commercial wastes (e.g. grocery spoils) usually have less than 10% contamination and can be depackaged by equipment like Scott Equipment's Thor Turbo Separator to supply a low-contaminant feed to a digester, solving for the MSW organics challenge to date has required robust and costly equipment that only makes sense when deployed at large scale to satisfy regional demand. Such planning and investment is often not manageable for smaller municipalities unless they are doing so as part of a large regional plan, which likely requires an en masse regional organics diversion program roll-out coordinated to coincide with the construction of an extremely pricey cost-plus facility.

The Yarmouth team is proposing a smaller-scale, lower-cost approach to this chicken and egg conundrum, supported in its first deployment by the fact that it will be collocated with a soon-to-exist biosolids AD facility with balance-of-plant economies of scale on the project's side.

BiogasTiger ("BGT") - Developed by FWE GmbH, BGT is a prefabricated, containerized, plug-and-play, autonomous, plug flow AD toolkit. It is a proven but as-yet-to-be commercialized scalable waste management solution. FWE is working with Howell Laboratories, Inc. to bring the BGT platform to the US. The BGT can be deployed a) to rural settings to manage agricultural wastes and produce fuel and fertilizer to support the farm; b) in urban settings to reduce trucking of garbage in and around disadvantaged communities while also producing clean renewable electricity, fuel, and or heat; c) at wastewater treatment plants of all sizes looking to address skyrocketing management costs associated with PFAS-laden biosolids; and d) everywhere else in between. The BGT is a versatile solution for a wide range of feeds.