

## Municipal Wastewater

Methane is produced when the organic material in municipal and industrial wastewater decomposes anaerobically. Varying amounts of methane are emitted during the collection, handling, and treatment of wastewater depending on methods employed. Most developed countries rely on centralized aerobic wastewater treatment systems to manage their municipal wastewater; these systems generate large quantities of sludge that are often treated in anaerobic digesters, which produce biogas that can range from 60 to 70 percent methane and 30 to 45 percent CO<sub>2</sub> on a dry basis.<sup>22</sup> However, in developing countries with little or no wastewater collection and treatment, anaerobic systems such as latrines, open sewers, and lagoons are prevalent and yield considerable methane emissions.



Wastewater accounts for more than 6 percent (approximately 450 MMTCO<sub>2</sub>E) of the estimated global anthropogenic methane emissions. China, Indonesia, Mexico, Nigeria, and the United States are the world's largest emitters in this sector.<sup>23</sup> Total estimated methane emissions from municipal wastewater sources are expected to increase by nearly 10 percent in the next 10 years.<sup>24</sup>

EPA is still exploring how best to engage in this sector and envisions that GMI might play a catalytic role in supporting the analysis and documentation of technical and economical options for methane emission reductions from the wastewater sector. EPA will begin supporting information-sharing and will add this sector to its annual GMI grant solicitation; however, EPA does not anticipate major investment of time or funding until the Steering Committee—with the support of additional developed countries—recommends a more directed strategy for this sector.



<sup>22</sup> *Evaluation of Combined Heat and Power Technologies for Wastewater Treatment Facilities* (EPA 832-R-10-006, December 2010), [www.cwwga.org/documentlibrary/121\\_EvaluationCHPTechnologiespreliminary\[1\].pdf](http://www.cwwga.org/documentlibrary/121_EvaluationCHPTechnologiespreliminary[1].pdf).

<sup>23</sup> U.S. EPA, 2011.

<sup>24</sup> *Idem*.

## Wastewater Timeline Within GMI

Recognizing the interrelationships of the topic of wastewater within both the Landfill and Agriculture Subcommittees, the Steering Committee initially established a Wastewater Task Force under the Methane to Markets Partnership in 2009 to explore interest among Partner Countries and determine how wastewater could best be incorporated within the Partnership. In 2010, the Steering Committee formally added wastewater as a focus area within the TOR; however, it did not decide on a structure or process to incorporate wastewater within GMI. The Wastewater Task Force was charged with developing a set of options on the focus area's structure and preparing recommendations for the Steering Committee's review.

The task force held its first meeting in November 2010 in Venice, Italy, in conjunction with the Landfill and Agriculture Subcommittee meetings. The meeting included presentations from wastewater experts from Brazil and the Netherlands that focused on the current state of wastewater biogas capture and utilization projects in Latin America and Europe. These presentations helped to frame discussions about the most effective way to focus GMI's efforts in this area, overcome obstacles to implementing projects, encourage greater participation, and leverage existing financial sources or Clean Development Mechanism funding. During the Venice meeting, the task force decided to focus only on municipal wastewater as a potential GMI sector. The Wastewater Task Force also discussed possible technical and financial support opportunities, such as preparing studies, raising awareness, conducting demonstration and pilot projects, and developing a best practices manual.