While the basic processes involved in anaerobic digestion of waste are described in Chapter 9.4 and the main digestion technologies are presented in Chapter 9.5, this chapter focuses on mass balances, gas production and energy aspects, environmental emissions and unit process inventories. Understanding these issues and being able to account for them is a prerequisite in digestion engineering and for establishing and running a successful anaerobic digestion facility. Of specific importance is the final use of the digestate. Use in agriculture as a fertilizer is described in Chapter 9.10 and use after composting of the digestate as a soil amendment product is analogous to issues presented in Chapter 9.9 for compost.