GMI Municipal Wastewater Subcommittee Meeting

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Chris Godlove
United States Co-Chair Wastewater Subcommittee
Global Methane Initiative (GMI)

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Goal of Subcommittee

- Develop, promote, and facilitate strategies for the abatement, recovery, and use of wastewater methane through:
  - Identification of opportunities.
  - Technology and best practice development, demonstration, deployment, and diffusion.
  - Implementation of effective policy frameworks.
  - Identification of ways and means to support investment.
  - Removal of barriers to collaborative project development and implementation.

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Subcommittee Background

- Initially raised/discussed at the January 2009 Steering Committee meeting.
  - Steering Committee tasked ASG with developing a scoping paper to assess the potential for including wastewater in the Partnership.
- ASG presented paper at the September 2009 Steering Committee meeting.
  - Based on findings, the Steering Committee recognized this sector had potential to achieve methane capture and utilization in the near term.
- Wastewater Task Force created in March 2010

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Subcommittee Background (Cont.)

- Wastewater Task Force held two teleconference meetings in July and October 2010, and met in-person in Venice, Italy in November 2010.
- Due to continued strong interest, Steering Committee delegates officially elevated the Wastewater Task Force to the Municipal Wastewater Subcommittee in October 2011 in Krakow, Poland.

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Emissions from Wastewater

- Methane is emitted during the handling and treatment of municipal wastewater, which is comprised of approximately 60% methane and 40% CO_2.
- The organic matter in wastewater produces methane when it decomposes anaerobically.
  - Centralized aerobic wastewater treatment systems (with or without anaerobic sludge digesters) emit small and incidental amounts of methane.
  - Anaerobic systems such as lagoons, open sewers, septic systems, and latrines yield considerable methane emissions.

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Emissions from Wastewater (Cont.)

- Wastewater is the fifth largest source of anthropogenic methane emissions, contributing approximately 4% of total global methane emissions in 2010.
- China, Nigeria, Mexico, the United States, and Indonesia are the largest emitters and combined to account for 60% of the world's methane emissions from wastewater in 2010.
- Global methane emissions from wastewater are expected to grow by approximately 18% between 2010 and 2030.

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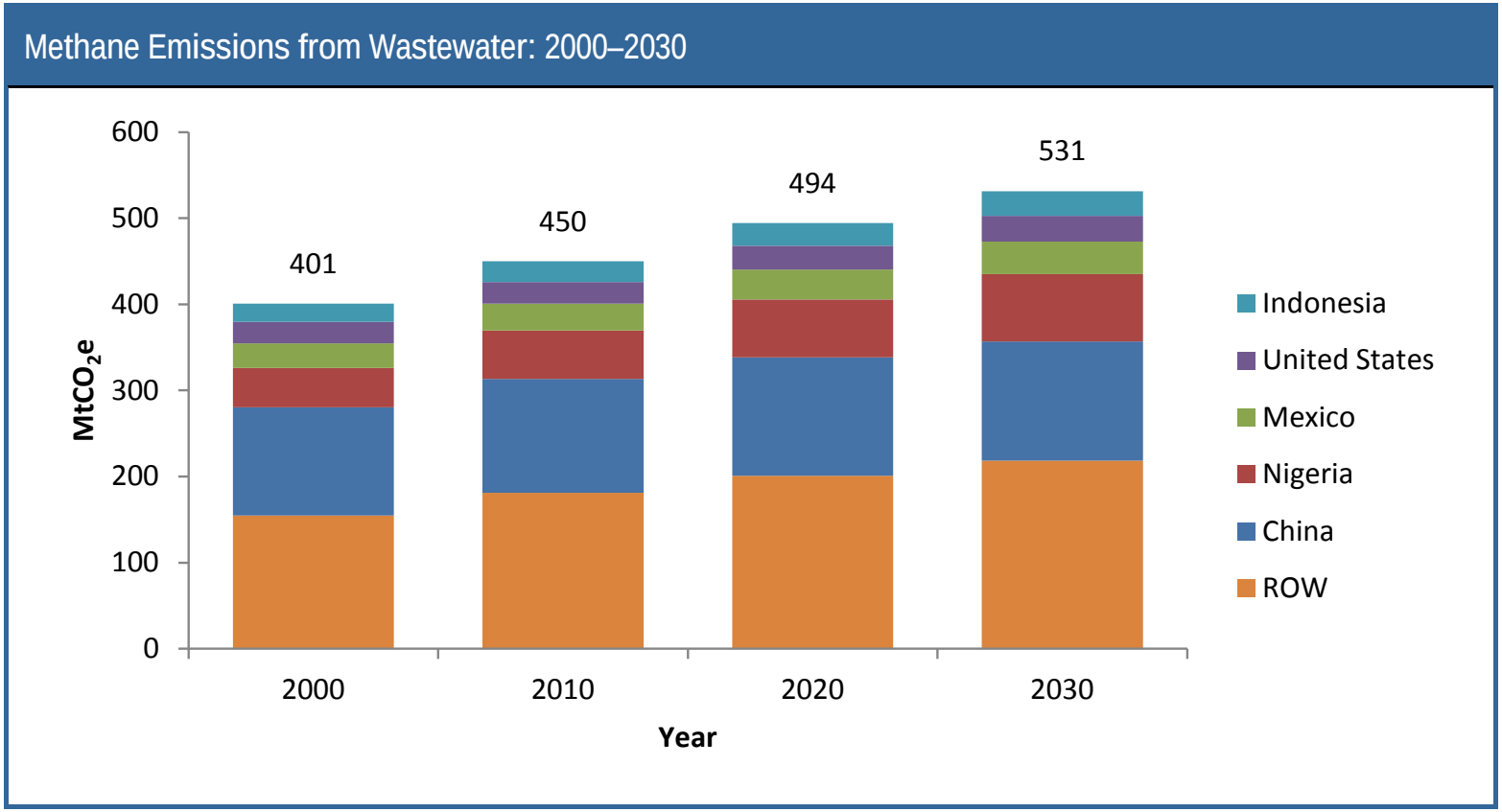
Emissions from Wastewater (Cont.)



Source: U.S. Environmental Protection Agency (USEPA). 2011. *Draft Global Non-CO_2 Emissions Projections Report: 1990–2030*. Washington, D.C.: USEPA, OAR, Climate Change Division. EPA 430-D-11-003. Obtained at: http://www.epa.gov/climatechange/economics/downloads/EPA_NonCO2_Projections_2011_draft.pdf

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Clean Energy Benefits

- Cost-effective technologies that deliver clean energy from this source are widely available.
- Benefits of using wastewater digester gas include:
  - Energy cost savings from the utilization of wastewater treatment gas.
  - Stabilized energy costs and production (i.e., protection from the volatility of gas and electricity prices).
  - Progress toward national goals for use of renewable energy.
  - Enhanced energy security from reduced vulnerability to power grid interruptions.
  - Reduced GHG emissions from avoided venting directly to the atmosphere, and from flaring or utilization.
  - Improved local air and water quality.

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Mitigation Options

- Mitigation options include:
  - Anaerobic sludge digestion (new construction or retrofit of existing aerobic treatment systems).
  - Biogas capture systems at existing open air anaerobic lagoons.
  - New centralized aerobic treatment facilities or covered lagoons.
  - Optimization of existing facilities.

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Challenges/Barriers

- Lack of **data** on emissions produced in sector.
- High initial **capital costs** and lack of **financing**.
- Lack of **awareness** of mitigation technologies.
- Lack of local **capacity** to design and maintain systems.
- Site-specific **design** characteristics.
- Utility **policy** barriers.
- Limited **onsite demand** for electricity or heat.

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Areas of Potential Engagement for Subcommittee

- Identify methane recovery opportunities and describe available technologies and best practices. *(awareness)*
- Conduct market assessment. *(data)*
- Discuss country-specific needs, opportunities, and priorities. *(awareness)*
- Identify project finance opportunities and mechanisms. *(finance/ capital costs)*
- Support the analysis and documentation of technical and economical options for methane emissions reduction. *(awareness)*
- Document successful case studies *(awareness)*
- Create country-level project databases *(data)*
- Compile information on feasible projects and direct to financiers or project developers. *(finance/ capital costs)*
- Organize industry or task force within country. *(capacity)*

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