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The Importance of Policy in Fostering Landfill Gas Development: *Results from a New IEA Study*

*Methane to Markets Meeting, Monterrey Mexico
January 2009*

Content

- Background
- Barriers to LFG use
- Policy tools and solutions in use globally
- Lessons learned

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International Energy Agency

Goals:



- energy security
- environmental protection
- economic growth



Activities:

- co-ordinates efforts to ensure energy security
- conducts policy analysis for G8 and member countries
- compiles energy statistics
- reviews energy policies & programs
- convenes, mobilizes science & technology experts



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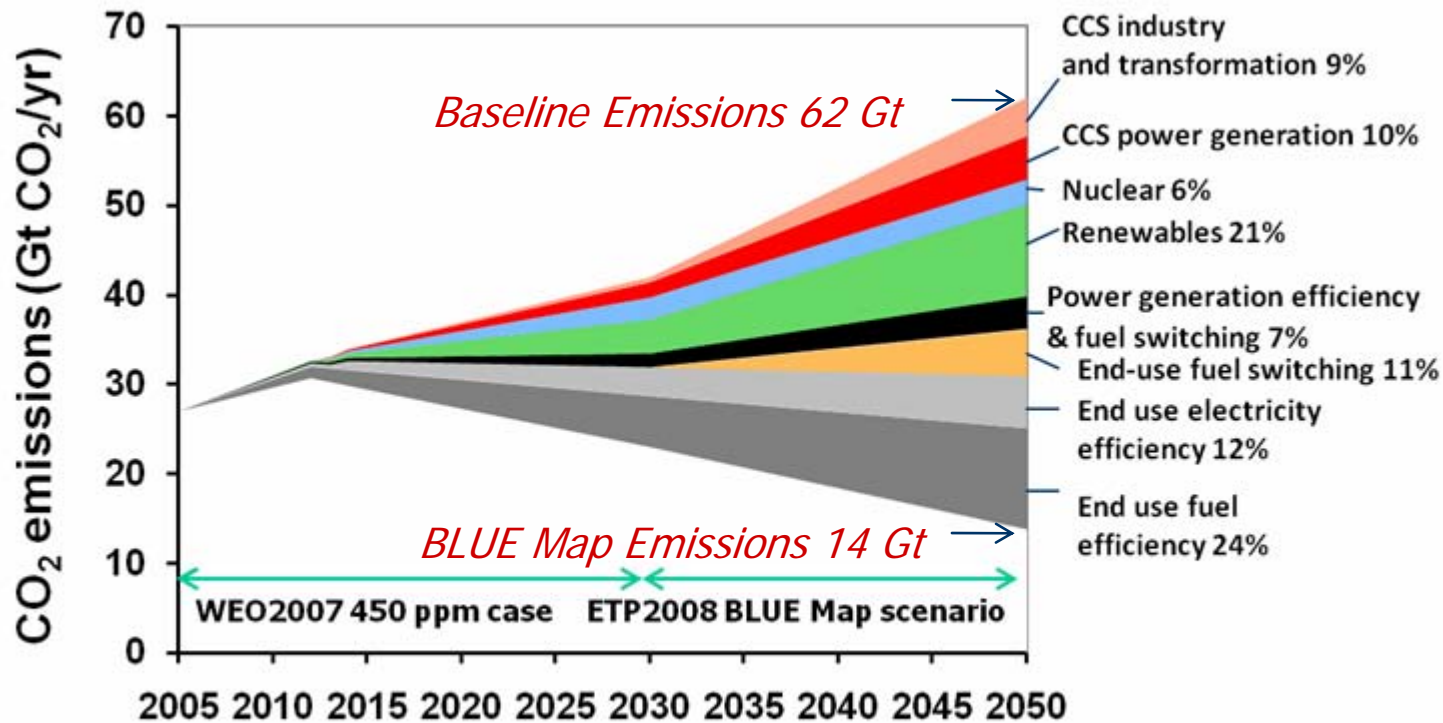
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A New Energy Revolution: Cutting Energy-Related GHG Emissions



Source: IEA, *Energy Technology Perspectives* (2008).

We need a portfolio of solutions, including methane capture, to meet our GHG goals

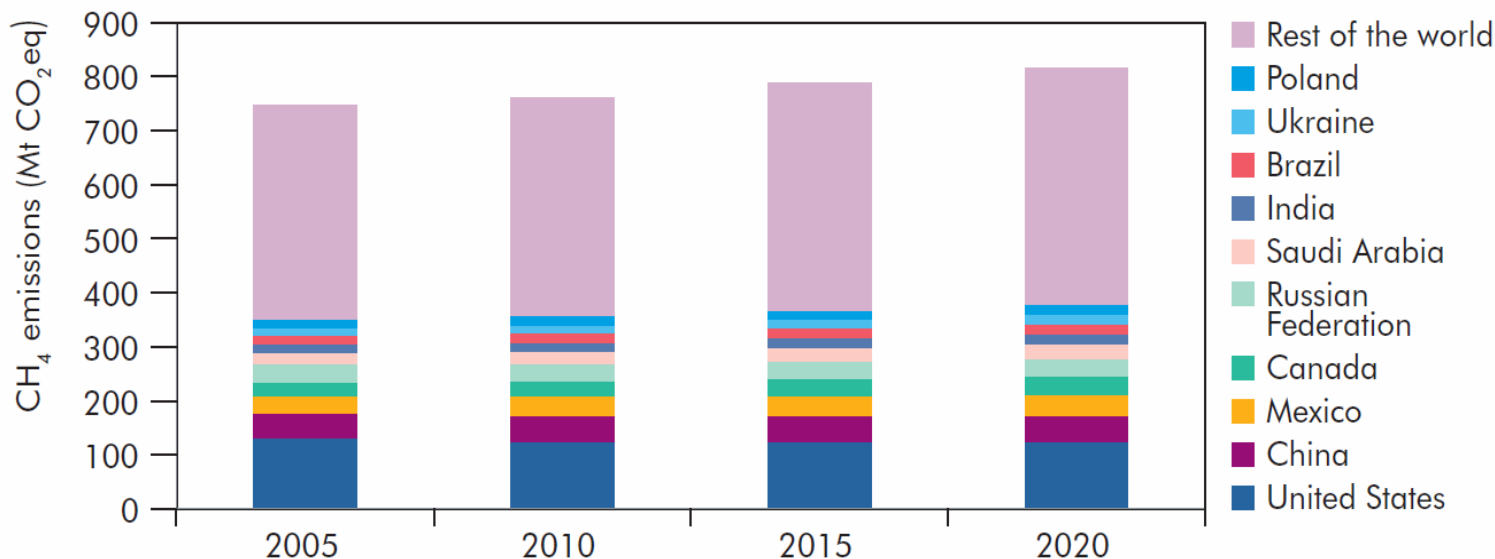
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Methane Emissions from Solid Waste (2005-20)



Sources: US EPA; IEA, *Energy Technology Perspectives* (2008).

MSW-related methane emissions are expected to grow most in developing nations

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IEA's Methane Recovery Work

- **Analysis on costs and benefits**
 - Chapter in ETP 2008 publication
- **Targeted reports on specific issues/countries**
 - Coal mine methane at medium-to-small mines in China (report February 2009; workshop April 2009)
 - Coal mine methane regulatory issues in Russia (report and workshop April 2009)
 - Turning a Liability into an Asset: Landfill Methane Utilisation Potential in India (report August 2008)
 - Global LFGE policy review (this report)
 - Global policy report (May 2009)

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IEA Study on LFGE Policy

- **Purpose:** to study variety of policy tools being used to address LFGE barriers around the world
- **Sources:** interviews, IEA RE and EE policies and measures database
- **Part of larger IEA effort to raise awareness about energy sector methane sources and solutions**

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Regional Differences in LFGE

- No surprises here: developed countries methane emissions are larger than developing countries
 - Sanitary landfilling practices
 - Larger sites
- Most industrialized countries have LFG regulations
 - China has new regulations
- Proper waste management is the first step to LFG recovery and use
 - Laws enacted; lack of enforcement a challenge

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Barriers to LFG Use

- Higher initial capital costs
- Electrical system interconnection
- Lack of awareness among waste disposal professionals, government

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The Importance of Policy

- Those countries with greatest growth in biogas have had the most aggressive policies
 - Germany, Portugal, Czech Republic and Luxembourg: feed-in tariffs
 - UK and Italy: quota system with tradable green certificates
 - USA: tax credits, also state policies on interconnection and RE portfolio standards

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Policy Tool: Financial Incentives

- A variety of incentives can contribute to offset higher capital costs
- GHG sales revenues
 - Several Clean Development Mechanism projects in China, India
 - However, need to balance LF regulation with CDM goals
 - Much more could be done here

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Policy Tool: Feed-in Tariffs

- Over 10 countries use FITs to spur biogas development (including LFGE)
 - Offers dedicated, predictable funding guarantee
 - Facilitates interconnection with electricity grid
 - FITs often lowered over time as technology matures

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Policy Tool: Tax Relief

- At least 5 countries use tax credits, deductions, exclusions or favourable rates to spur LFG use
- The US Production Tax Credit a key example
- Adds predictability
- Makes initial capital cost outlay easier to bear

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Policy Tool: Interconnection Standards

- For smaller system, “net metering” requirements that utility purchase output
- For larger system, standardized procedures and requirements for connection
 - Massachusetts in the USA is an excellent model
 - Consistent criteria
 - Simplified process
 - Lowered fees

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Policy Tool: Outreach and Technology Development Efforts

- Includes awareness efforts, identifying and addressing smaller barriers, and demonstration
- Outreach examples include the USEPA LMOP
- Finland's Tekes an example of demonstration project funding
- France, Hungary have interesting RE (and LFGE) project demonstration funds

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Lessons Learned

- The countries that have made progress in LFGE use have common approaches
 - Identify LFG as an asset to be used
 - Provide consistent regulatory signals
 - Make LFGE competitive with conventional energy sources
 - Encourage innovation and development
- Developing countries have unique issues
 - Improved MSW management a first step to LFG use

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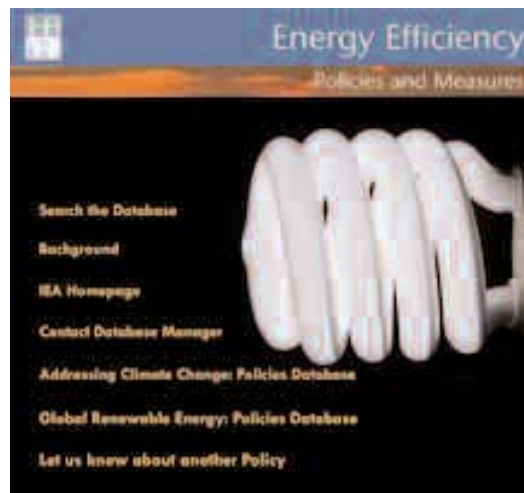
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For More Information

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Report available for free download at
www.iea.org/textbase/subjectqueries/methane.asp



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