



Methane Policy Analysis

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One Future Methane and Climate Strategies Event

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Approach

Discuss Munnings and Krupnick. 2017.
“Comparing Policies to Reduce Methane Emissions in the Natural Gas Sector,” RFF Report.

- Set out nine “stylized facts” about methane leaks and emissions
- Judged the performance of 6 policies in light of those facts, economic theory and 3 criteria

Stylized Facts

1. Accurate firm/plant-level inventories of methane emissions are currently unavailable
2. Each stage of the natural gas value chain is a significant methane emitter
3. Abatement costs are heterogeneous across subsectors
4. Abatement costs are heterogeneous across technologies
5. Methane emissions vary widely within and across regions
6. Super-emitters account for a large share of methane emissions
7. A significant portion of methane emissions seems to be stochastic
8. The upstream part of the natural gas sector (well development) is dominated by many low-production (marginal) wells and small firms
9. There are institutional barriers to reducing methane emissions

Policies Examined and Criteria

Policies

- Technology-based standards on equipment (EPA/BLM)
- Performance-based standards on equipment (EPA/BLM)
- Leak Detection and Repair Programs
- Performance standards on facilities or firms (ONE Future)
- Tradable performance standard
- Tax with default assumed leakage rates

Criteria

- Administrative costs
- Economic efficiency
- Environmental effectiveness

Findings

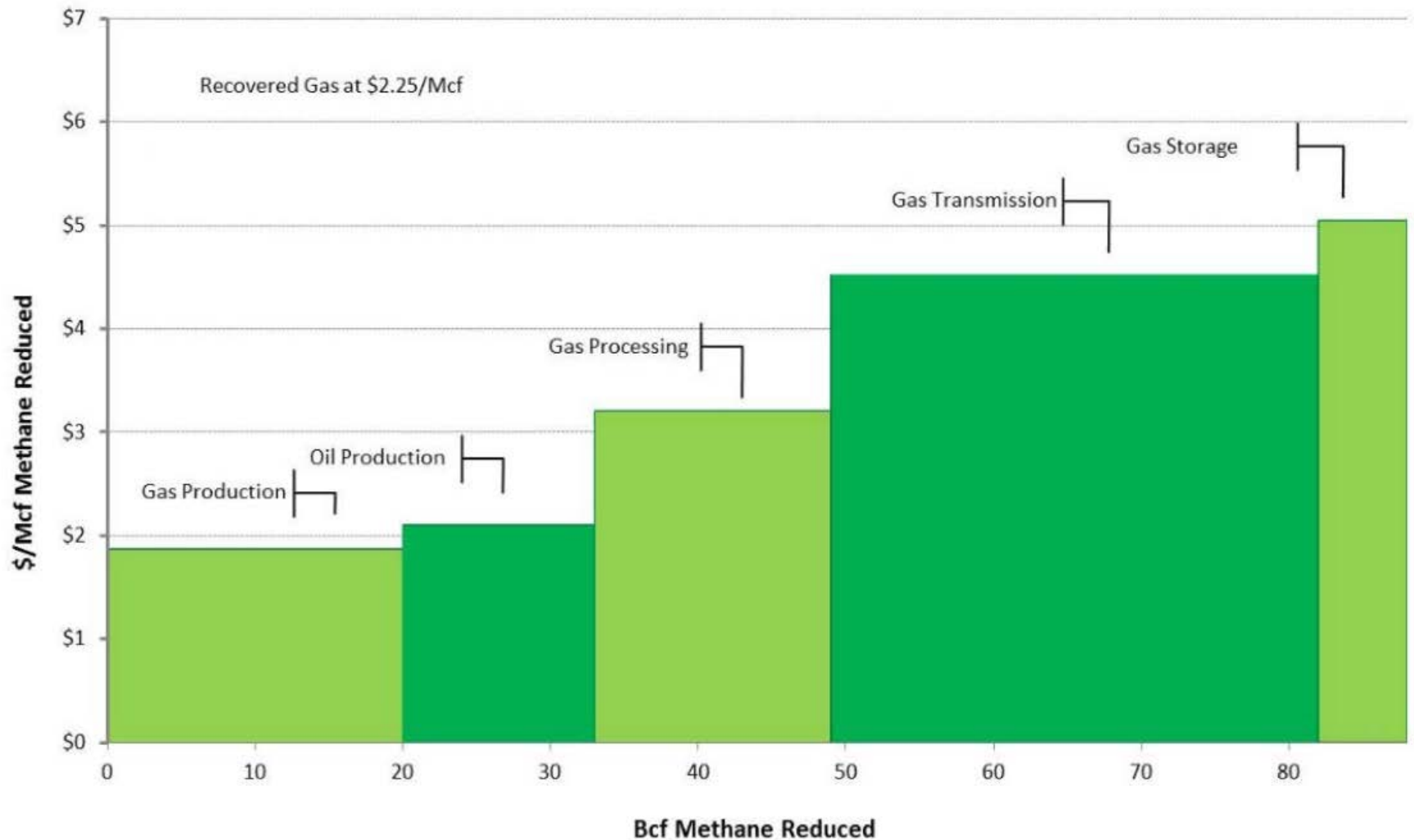
- Rapid innovation and technical heterogeneity argue against technology standards
- Firm level performance standards leave a lot of efficiency and environmental performance on the table
- Tradable performance standard works better for efficiency
- Tax with assumed and updatable default rates has good incentive properties
- Tiered monitoring programs do well given super emitters and stochastic nature

Thoughts on One Future

- Kudos on inclusion in Methane Challenge Program
- Setting rate-based targets across the four segments as opposed to “absolute” trading or tax approach to find least cost approach
 - Not necessarily meeting environmental goals: rate versus absolute
 - Inefficient: No intercompany or inter-segment trading
 - Reductions roughly proportional to share of emissions
 - Adjusted “slightly(!)” to reflect cost realities
- What next with Trump administration actions on BLM and EPA methane rules? States?

EXTRA

FIGURE 4. NATIONAL AGGREGATE MARGINAL ABATEMENT COST CURVE FOR OIL AND NATURAL GAS SUBSECTORS



Source: ICF 2016a.

FIGURE 5. NATIONAL MARGINAL ABATEMENT COST CURVE FOR METHANE ABATEMENT TECHNOLOGIES FOR OIL AND NATURAL GAS SECTOR

