Summary of Discussion During Stationary Source Mitigation Breakout Session

Workshop on Short Lived Climate Forcers

Chapel Hill, NC

March 3-4, 2010

Stationary Sources

KEY TOPICS

Mitigation options for domestic and international stationary and area sources, including woodstoves

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1. In your view, **is it possible to identify priority mitigation options in this sector** for black carbon and ozone precursors, considering cost, technological feasibility, ease of implementation, and effectiveness? **If so, what are they?**

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2. **How do the mitigation opportunities differ between world region** for this sector, considering the range of available options?

Priority Options - Domestic

- Stationary diesel: oxidation catalysts do not capture BC
- Utilities: ESP generally less effective with fines and ultrafines; need further review, testing. Cost effectiveness. ESP less effective than baghouses. Unburned carbon has increased with low Nox burners. But should utilities be an area of great emphasis?
  - ESP+baghouse is best but cost is an issue

Priority Controls - Domestic

- ESP and baghouses can be effective on many large and small industrial sources (pulp and paper, cement kilns, ind. boilers)
  - Technical and economic feasibility assessment needed
- Evaluate CA stationary diesel rule for national application
- Open burning (tires, waste, etc) – need better enforcement and communication.

Priority Controls - Domestic

- Cyclones not effective in reducing BC
- Woodstoves: higher BC than fireplace
  - Woodstove change out programs
- Methane: agricultural – technology works, institutional barriers to getting on grid;

Priority Options - Intl

- Developed countries need to address their own problems while assisting other countries
- Coke ovens – hi emissions; improved operation and control measures are feasible
- Brick kilns - hi emissions; cleaner alternatives available
- Many utilities uncontrolled. If plume gets above clouds, BC can add to warming. Need further review, testing. Less certainty re: intl controls.
- Open burning (tires, waste, etc) – need better enforcement and communication.

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3. **What next steps – analyses, data, assessments, summaries – represent the low hanging fruit for clarifying policy mitigation options?** Considering efficacy, impacts, and benefits of mitigation options?

Analyses, Assessments

- Inventory: need more source tests.
  - How well do PM controls reduce BC?
  - Baseline emissions need to be refined.
- Evaluate alternative energy options
- Activated carbon injection: assess affect on fine particles remaining
- What is “cost effective” when considering health and climate? Access to capital is key issue
- What sectors of emissions “estimates” are most uncontrolled?

Analyses, Assessments

- Intl: Source tests needed on brick kilns, coke ovens, and other small boilers (both old and new technologies).
- Need test protocol for brick kilns
- Evaluate energy efficiency options and barriers for adoption (funding, tech transfer)
- Evaluate wintertime CO from resid. heating

Analyses, Assessments

- Evaluate successful intl methane projects, how can it be applied in US?
- Better characterize small sources
- Can we have greater woodstove tech transfer?

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4. **What immediate follow-ups to this workshop** would you suggest?

Immediate Follow-ups

- UNEP source testing for dioxin inventories etc – check to see if BC (can be) included
- Move forward on prioritized source test program for key sectors
- Develop plan for greater international action