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# **Enabling Policy Framework and the Role of Best Practices**

## **CMM policy defects and best practice conflicts**

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# Best practice: Mine worker safety is paramount and should not be compromised

*Safer mining by managing methane to mitigate against explosion risk – achieve through implementation of risk-based management techniques in an effective regulatory environment*

- Balance between prescriptive rules and performance/goal based regulatory regimes difficult to achieve.
- Too prescriptive = bureaucratic and ineffective, no incentive to improve e.g. China and USA
- Too much self-regulation= complacency, wrong priorities e.g. New Zealand prior to Pike River disaster (and UK now)

# Best practice: Policy makers should be encouraged to promulgate policies that promote and incentivise the use, or at least the destruction, of CMM and VAM

## Good practice

- Safety is paramount
- Facilitate maximum gas use where economically feasible, and destroy unused CMM & VAM
- The ultimate goal should be *Near-Zero Methane Emissions* mining

## Bad practice

- Conflicting rules e.g. Chinese environmental law that requires CMM >30% to be used –
  - Precludes high quality CMM offset projects from carbon financing.
  - Removes incentive to flare unused high quality gas.
  - Encourages hazardous low concentration gas capture, transport and use of flammable gas mixtures
- Safety is not a material consideration in UNFCCC CDM methodologies and validation. Offset protocols should include safety standards - an essential component of *sustainable development*

# Best practice: Create suitable market conditions and instruments to promote CMM use and destruction

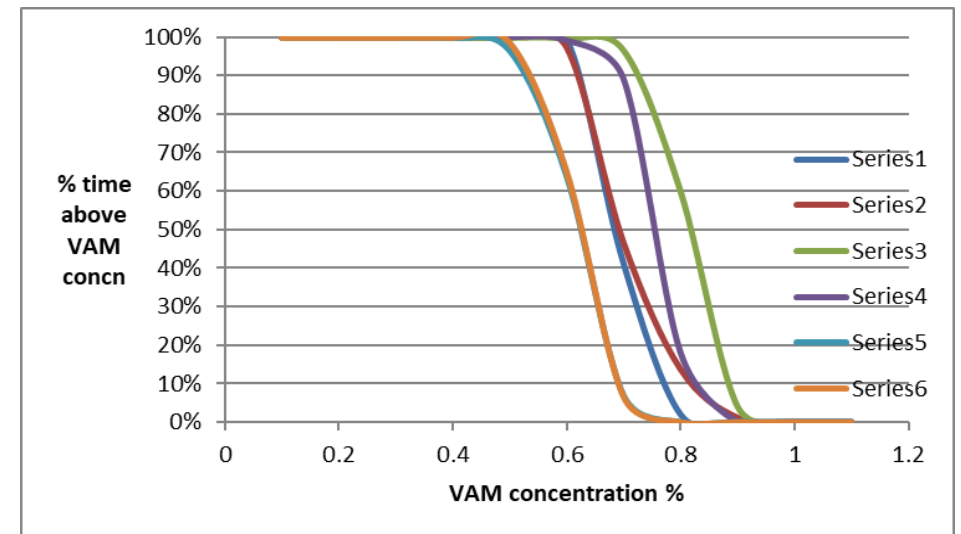
- Carbon markets –stimulating investment in eligible offset projects at coal mines when carbon prices are high
- CDM was effective until CER prices crashed – financial markets lost confidence
- Overall, carbon markets have failed to provide the necessary stimulus to achieve scale
- Carbon prices are not reflecting the true cost of climate change US\$220/t (Moore and Diaz, Nature Jan 2015)
- CMM offset projects have suffered because of “Additionality” a great concept badly applied
- Wider use of performance-based protocols – uniform approach, avoid complex additionality tests, reduce transaction costs (e.g., California compliance Offset Programme)

# The problem of Ventilation Air Methane (VAM)

- 70-80% of gas emitted from coal mines is VAM – needs to be urgently addressed to achieve meaningful GHG reductions
- VAM mitigation technology is proven but relatively high capital cost and operating costs – not viable without carbon price >>U\$10/t CO2 avoided. BUT clearly additional
- If the severity of the problem is accepted, what action is needed?
  - Can mining methods be changed so less gas is emitted? If so what are the cost and safety implications?
  - Can ventilation methods be changed to reduce gas dilution without compromising safety and allow for increased efficiency of VAM destruction or use?
  - Is the current technology satisfactory or is innovation necessary? A lower cost technology would help. What R&D is being undertaken?
  - Where's the money - what are the necessary market conditions to drive major reductions in VAM emissions and a minimum carbon price?

## VAM mitigation = “perfect offset”

- Big volumes (768MtCO<sub>2</sub>e)
- Easily measured point source
- Super-additional
- Not regulated
- Not happening
- Difficult to finance
- Technology exists but needs improving



# Opening institutional and national emission reduction programmes to CMM

- Norwegian Ministry of Climate and the Environment – procure carbon credits to meet its ER commitments from new and vulnerable projects
  - But due to the Chinese standard would only procure from dangerous low concentration CMM projects or VAM mitigation projects in China
- World Bank Pilot Auction Facility – does not support coal mining related projects due to lack of donor support

# Should mine methane emissions be capped?

- “Zero methane emissions” coal mines – coal mines can supplement or replace allowances with certified emission reductions to ensure vented drained gas and VAM emissions are below caps
- Market regulated to maintain prices high enough to stimulate mitigation measures by the mine
- If emission caps were also applicable after mine closure, how would the process be managed?
- Penalties for non-compliance?
- Would a carbon tax be more effective?

# The Future?

Near-zero methane emissions mining is feasible, so what about taking into account combustion with *carbon-neutral coal* as the next step?

Achieve compliance through:

- CCS – costly process, infrastructure and limited reservoirs
- Emission reduction offsets – assign two tonnes CO<sub>2</sub> avoided per tonne of coal sold but the massive demand for (quality?) offsets would be challenging and short supply would drive up ER prices which in turn would raise the cost of coal-fired power generation and drive CCS.

Draconian or realistic?

It's not going to happen soon – coal is a low-cost fuel on which many emerging economies depend for growth, social stability and poverty alleviation.

**But, local air quality issues are resulting in new coal plants being halted in emerging economies**



# Conclusions

- Policies to promote CMM use and emission reductions should be consistent with worker safety and health protection priorities
- Well-intended policies with negative impacts should be removed
- Realistic carbon pricing could drive the change required
- CMM offset methodologies should be simplified and “additionality” related uncertainty minimised through wider use of performance-based offset protocols
- VAM is a “perfect” offset opportunity that should be promoted more strongly

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