Processing Coal Mine VAM (Ventilation Air Methane) - an opportunity to contradict Global Warming!

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GMI Project Network
Coal Mine VAM Processing

Start by comparing effects of reducing emissions of CO$_2$ and methane.
One thin bubble of atmosphere

- where the thickness to the Earth is like the skin to the apple
By activities such as fossil power plants and vehicles we are moving enormous and increasing amounts of carbon atoms from being Earth bound into atmosphere,
One thin bubble of atmosphere
slowly changing the composition of the atmosphere.
The added CO$_2$ can retain some more heat in atmosphere, causing Global Warming.
Methane can retain MUCH more heat!
Methane has a significantly more powerful effect on global warming
CONSIDER Green House Gas METHANE

- **CO₂**
  - Fossil Power Plant
  - GW impact
  - Life time in atmosphere: >>10,000 years

- **CH₄**
  - Coal mine Vent Shaft
  - GW impact
  - Life time in atmosphere: 12 years
CONCLUSIONS ON MAJOR EMISSION REDUCTIONS:

- CO2 continues to accumulate, but at a slower rate.
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Reducing methane emissions CONTRADICTS increasing global warming!
One thin bubble of atmosphere

Both:
- Shifting from mainly fossil fuels to sustainable power sources
- Developing cost efficient CCS
will take decades
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REDUCING METHANE EMISSIONS CAN HELP BRIDGE THIS TIME GAP.
Coal Mine VAM = singular large source of methane emission

Coal mine VAM

1,000,000 m³/h, 0.8%

= 50,000 tons methane/year
Coal Mine VAM = singular large source of methane emission

1 million t CO$_2$e

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½ million cars =

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MEGTEC – global leader in **Industrial Emission Control** and **Energy Recovery & Utilization**

Locations Worldwide
- **MEGTEC Worldwide Headquarters**
- **MEGTEC Regional Offices**

**Americas**
- De Pere, WI
- Vero Beach, FL
- Columbus, OH
- Standish, UK
- Maidenhead, UK
- Evry, France

**Europe**
- Göteborg, Sweden – VAM base
- Maintal, Germany
- Ingre, France

**Asia**
- Shanghai, China
- Vero Beach, FL
- Pune, India
- Singapore
- Melbourne, Australia

**Regions**
- Americas: 490 employees
- Europe: 250 employees
- Asia: 90 employees
Officially announced VAM installations Worldwide
- MEGTEC and others 2010

• Demos (MEGTEC)

British Coal Demo 1994
CONSOL Energy Demo 2007 - 2008
Demo 2001 2002 BHP
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In full operation by April 2007
– the world’s first VAM Power Plant

Fuel of 0.9% methane generates high grade steam for electricity.
By mid 2010 WestVAMP had generated:

- over 100,000 MWh of electricity
- over 625,000 carbon credits.
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MAJOR VAM PROJECT IN CHINA
MEGTEC SUPPLIES TO J/V LEAD BY INT’L POWER COMPANY AES

- DaTong coal mine of SongZao Mining Group, ChongQing Province
- Processing capacity is 375,000 Nm³/h of ventilation air
- Will generate hot water for local use
- The 6 VOCSIDIZER (processing) units
- Installation in December 2010
- Start up in 1 Q 2011
VAM project economics indication
- Perfect case of Additionality!

**2010 VAM PROJECT FEASIBILITY PROBLEM**

Uncertainty about post 2012 Carbon Credits

→ Investors (globally) sit back and wait!
Provided certainty in post 2012 carbon credits major VAM installations will be realized primarily in:

- Mexico
- Poland
- Australia
- USA
- Ukraine
- China
- Russia
- India
GMI = Global Methane Initiative
(former Methane to Markets Partnership)

GMI is efficiently encouraging and promoting increased methane emission reductions by:
- addressing barriers preventing methane emission reductions
- conveying info on market conditions and on technologies
- coordinating voluntary activities involving governments and industry

MEGTEC spending major R&D and commercial efforts in order to establish a global VAM processing market, we find cooperating with GMI to be a true win-win partnership.
CONCLUSIONS

1. For overall Climate Control success, reducing CO₂ emissions **must** be combined with reducing Methane.
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2. VAM processing is a major opportunity for quick, positive impact on Global Warming.
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3. GMI (M2M) has been very successful in triggering and encouraging reductions of global methane emissions.
1. For overall Climate Control success, reducing CO2 emissions must be combined with reducing Methane.

2. VAM processing is a major opportunity for quick, positive impact on Global Warming.

3. GMI (M2M) has been very successful in triggering and encouraging reductions of global methane emissions.

4. Lack of certainty of post 2012 carbon credits stops emission reduction investments from being made.
Thank you!

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