

MEXICO

**Methane to Markets Partnership  
Coal Mine Methane Subcommittee  
Geneva**



SECRETARÍA DE  
MEDIO AMBIENTE Y  
RECURSOS NATURALES

**SEMARNAT**

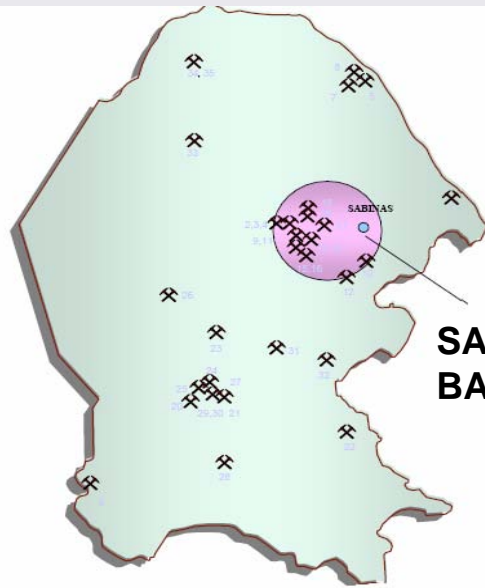
# **RECOVERY AND USE OF METHANE ASSOCIATED TO MEXICAN COAL MINES**

**By**

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**April 3, 2007**

COAHUILA

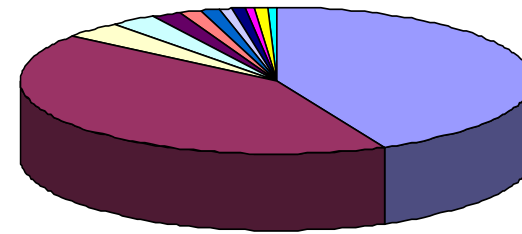


SABINAS  
BASIN

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## MINING COAL COMPANIES COAHUILA



- Minerales Monclova S.A. de C.V.
- Minera Carbonifera Río Escondido
- Minera La Regenta
- Cia. Minera MINSA, S. A.
- CEMEX, S.A. DE C.V.
- Minería Y Energía Del Noreste
- Minera Titanes, S.A. de C.V.
- Combustibles Fosiles
- Minera El Hondo, S.A. de C.V.
- Sr. Basilio Niño
- Soc. Coop. de Prod. Minera Fco. I. Madero S.R.L.
- Seyco Industrial, S.A.

# COAL MINING IN MEXICO



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- All the coal produced in Mexico comes from the State of Coahuila
- The main producers are Minera Carbonífera Río Escondido, S.A. (MICARE, thermal coal) and Minerales Monclova (MIMOSA, metallurgical coal), with 86% of the national production, both subsidiaries of Altos Hornos de México, S.A. de C.V.
- These two companies have more than 55% of their total reserves in coal

# COAHUILA: MAIN COAL MINES



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Name	Ownership	Production t/day	Location
Block 6	Minerales Monclova, S.A. de C.V.	3,000	S.J.Sabinas
MIMOSA III	Minerales Monclova, S.A. de C.V.	3,116	S.J.Sabinas
La Esmeralda	Minerales Monclova, S.A. de C.V.	3,687	S.J.Sabinas
MIMOSA IV	Minerales Monclova, S.A. de C.V.	1,621	Múzquiz
MIMOSA VII	Minerales Monclova, S.A. de C.V.	50	Progreso
Tajo III	Minera Carbonífera Río Escondido	4,096	Piedras Negras
Mina IV	Minera Carbonífera Río Escondido	3,187	Nava
Mina V	Minera Carbonífera Río Escondido	3,186	Nava
Mina VI	Minera Carbonífera Río Escondido	800	Nava

# MIMOSA'S PROJECTS

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- MIMOSA incorporated a methane drainage system in advance of mining in order to safely and cost effectively exploit its reserves.
- In addition to the degasification program MIMOSA is developing a project to diminish atmospheric pollution from methane, recovering treatment and burning in MIMOSA's Mines 5, 6, and 7.

# METHANE COMBUSTION PROJECT

## MIMOSA COAL MINES



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Objective:	Diminish atmospheric pollution by methane recovering, treatment and burning in MIMOSA's Mines 5, 6, and 7
Starting date:	2006
Expected outcomes within 10 years:	<ul style="list-style-type: none"><li>•Methane reduction from 472 850 t to 1 323 980 t</li><li>•CO<sub>2</sub> reduction from 8 629 530 t to 24 162 680 t</li></ul>
Related benefits:	<ul style="list-style-type: none"><li>•Less greenhouse gases emissions to the atmosphere</li><li>•Non renewable resources savings</li></ul>
Project profits:	The only expected profit is related to CER's trade

# INVENTORY OF GHG



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- The calculated contribution of methane emissions to the national inventory of greenhouse gases (GHG) is marginal
- Nevertheless, if there is an increase in the mines' present production levels in the near future, or if the number of exploited mines is increased without planned options for the use of recuperated methane, it is possible that the contribution will become moderated in future inventories

# METHANE EMISSIONS IN COAL MINING ACTIVITIES

Year	1990	1991	1992	1993	1994	1995	1996
Underground mining	55.8	50.0	44.7	53.1	59.8	59.8	69.0
Surface mining	1.7	2.0	2.0	2.3	2.5	2.9	3.5
Underground Post-mining	3.2	2.8	2.6	2.8	3.6	3.6	3.9
Total	60.6	54.8	49.4	58.3	65.9	66.3	76.4
Year	1997	1998	1999	2000	2001	2002	2003
Underground mining	63.1	62.7	66.2	74.5	63.0	59.5	58.2
Surface mining	3.3	3.0	3.4	3.2	2.8	2.5	2.6
Underground Post-mining	3.9	4.2	4.2	4.6	4.6	4.4	3.9
Total	70.2	69.9	73.8	82.3	70.4	66.4	64.8

**(Gg OF METHANE)**



# LEGAL FRAMEWORK



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- The amendments to the Mining Law of June 26, 2006 published in Mexico's Official Newspaper, allow holders of coal mineral concessions to recover and use methane in order to stop methane venting from coal mining to the atmosphere
- Use of methane by coal miners can occur in two ways:

**For self consumption and/or for PEMEX delivery**

# LEGAL FRAMEWORK



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- Holders of mining concessions for coal exploitation can become partners in order to recover, consume and use CMM
- A **signed contract** is required, for transportation and delivery of CMM to PEMEX
- The terms for the payment of transportation and delivery services of gas should consider the **necessary investments** for recovery, transportation, operation and maintenance plus a reasonable profit

# LEGAL FRAMEWORK



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Holders of mining concessions are required to:

- Report the start and suspension of their activities
- Collect, register and provide geological data periodically regarding the recovery and use of CMM
- Notify the discovery of non-associated gas to the coal mineral deposits
- Deliver the CMM in the connection point indicated by PEMEX, in case of non-self consumption.

# CONCLUSIONS



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- Methane is a considerable problem for mining due to its toxicity and explosion hazard, while being a low cost energy source.
- It can be used as an energy resource to bring extra wealth to certain regions of Mexico.
- CMM recovery and use is considered an emerging market in Mexico.
- Some kind of support may be required to implement companies' projects

# CONCLUSIONS



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- Mexico has not developed any project on this matter but has conducted methane drainage and ventilation at active coal mines
- Lack of information and the difficulty of communicating coal mine companies constitute important barriers
- There is no question that Mexican participation in the Methane to Markets Partnership will provide domestic coal companies with the information to identify developers and/or financiers for the recovery and use of methane to generate electricity