

COAL MINE PROJECT OPPORTUNITY

Kazakhstanskaya Mine

Coal Division of ArcelorMittal Temirtau JSC

Karaganda Coal Basin, Kazakhstan

OVERVIEW OF COAL MINE PROJECT OPPORTUNITY:

Kazakhstanskaya mine is located in Shakhtinsk district of Karaganda area, 30 kilometers from the city of Karaganda. The mine was commissioned in 1969 with a designed capacity of 2.7 million tonnes per annum (Mtpa) of coal. The mine utilizes 1,860 employees. Since 1 July, 1996 the mine has been part of JSC ArcelorMittal Temirtau Coal Division and is a large-scale highly-mechanized entity.

The mine has produced 64.7 million tonnes (Mt) of coal and had a maximum production output of 2,807 kilotonnes (Kt) in 1973. All produced coal is of KZh coking grade, and total reserves of coking grade are 103.4 Mt. Current depth of mining activities is 650-700 m (seams D6 and D10).

Existing ventilation and degasification infrastructure includes 8 vertical shafts and 74.9km of existing roadways. The mine plans to expand the current degasification by 8.5 kilometers. The production plan for 2009 is 1.4 Mt, but the mine plans to increase production to 1.6 Mt in 2010 and 1.8 Mt by 2012.

ESTIMATED ANNUAL EMISSION REDUCTIONS: .111 MMTCO2E

PROJECT DETAILS

- Name of Project: Kazakhstanskaya Mine
- Name of Mine: Kazakhstanskaya
- Type of Ownership: Private
- Have other pre-feasibility or feasibility reports been prepared for this site?: No

MINE INFORMATION

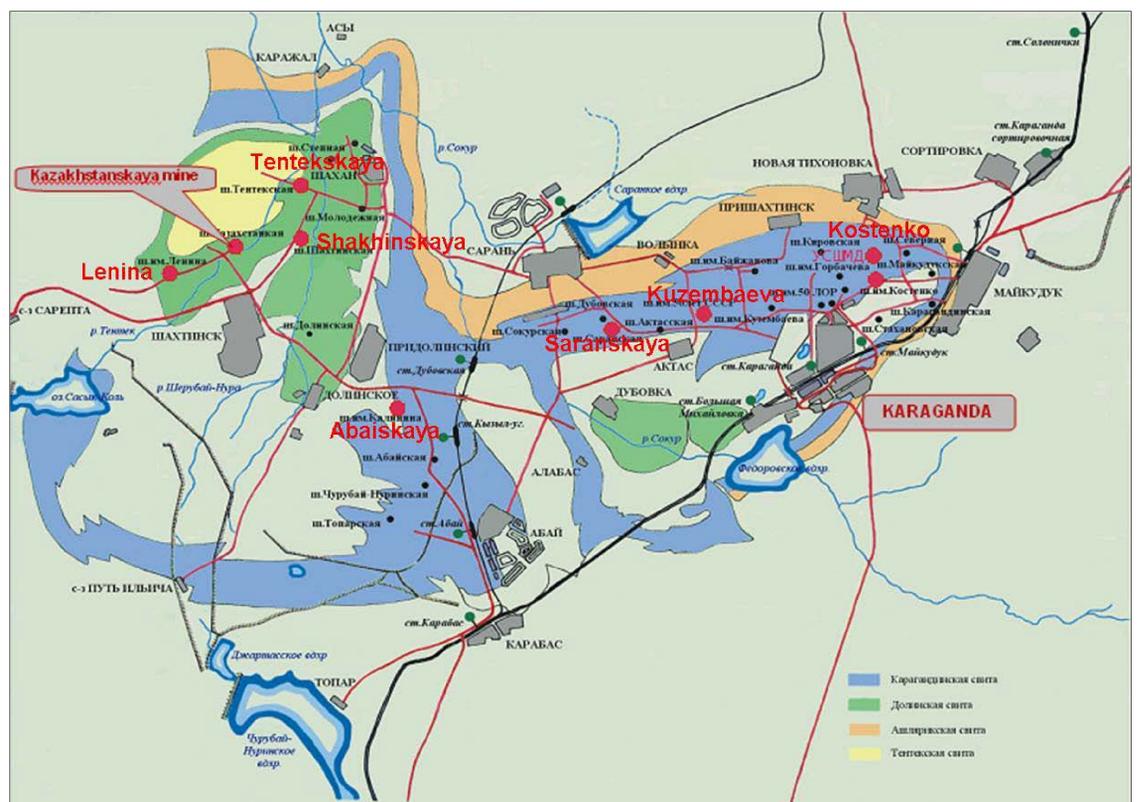
- Mine owner: CD of ArcelorMittal Temirtau JSC
- Parent company: JSC ArcelorMittal Temirtau
- Status of mine: Active
- Type of mine: Underground
- Mining Method: Conventional longwall

TYPE OF ASSISTANCE SOUGHT

- Financial Assistance
- Technical Assistance

PROJECT FINANCES

- Projected capital costs: US\$ 350,000
- Projected operation and maintenance costs for fully implemented project: US\$ 60,000



Location Map

(Methane Distribution Among Neighboring Mines)

HISTORICAL AND PROJECTED MINE DATA

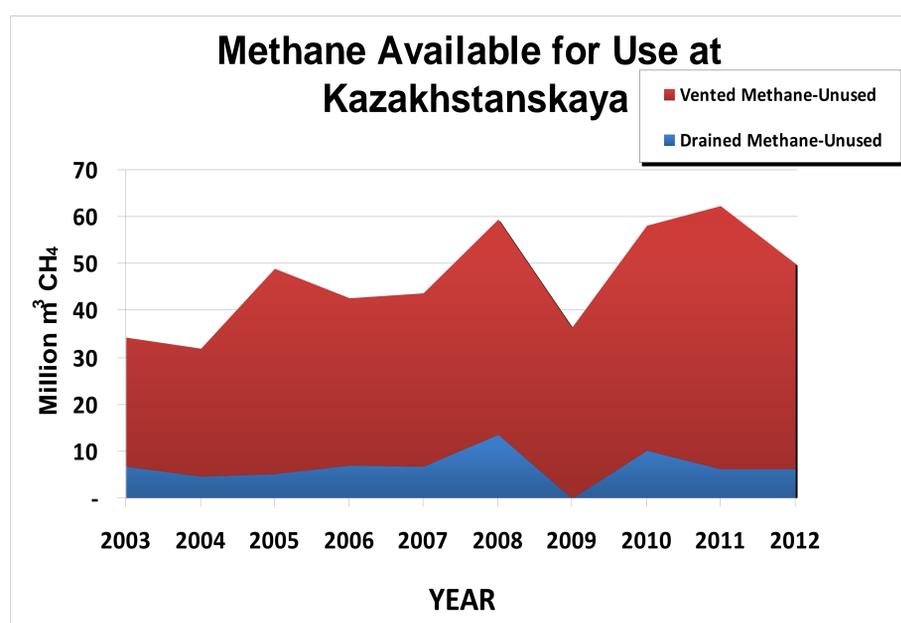
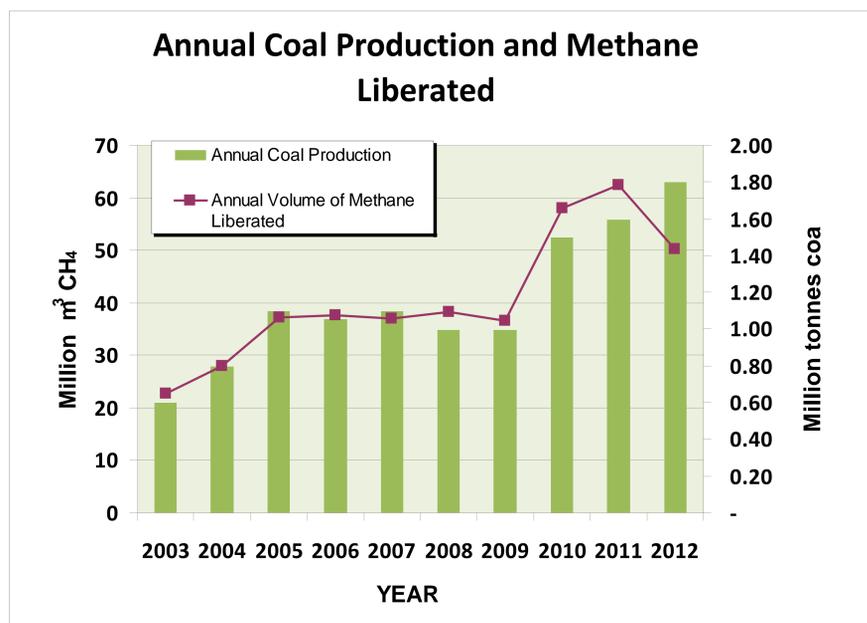
HISTORICAL COAL PRODUCTION AND METHANE EMISSIONS

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<i>Coal (Million tonnes/yr)</i>							.6	.8	1.1	1.06	1.1	1.0
<i>Methane (Mm3/yr)</i>												
Emitted from ventilation system(s)	14.1	18.0	22.7	29.8	25.8	25.7	27.5	27.3	43.8	35.8	37.0	46.0
Liberated from drainage systems	10.6	15.2	21.3	23.2	21.6	23.4	20.6	22.6	38.6	28.82	30.2	32.4
Vented to atmosphere (drainage)	3.5	2.8	1.4	6.6	4.2	2.3	6.9	4.7	5.2	7.03	6.8	13.6
Total Methane Emissions	17.6	20.8	24.1	36.4	30.0	28.0	34.4	32.0	49.0	42.83	43.8	59.6

PROJECTED COAL PRODUCTION AND METHANE EMISSIONS

YEAR	2009	2010	2011	2012	2013	2014	2015	2016
<i>Coal (Million tonnes/yr)</i>	1.0	1.5	1.6	1.8	1.8	1.8	1.8	1.8
<i>Methane (Mm3/yr)</i>								
Emitted from ventilation system(s)	36.5	48.0	56.0	44.0	49.0	55.0	42.0	45.0
Liberated from drainage systems	7.8	29.4	29.4	29.8	52.4	38.9	39.8	19.8
Vented to atmosphere (drainage)	0	10.1	6.4	6.2	28.8	11.3	11.8	0
Total Methane Emissions	36.5	58.1	62.4	50.2	77.8	66.3	53.8	45.0

COAL PRODUCTION AND METHANE EMISSION CHARTS



GREENHOUSE GAS EMISSION REDUCTIONS

ESTIMATED GHG EMISSION REDUCTIONS AND TOTAL VOLUME OF METHANE ALREADY RECOVERED/UTILIZED

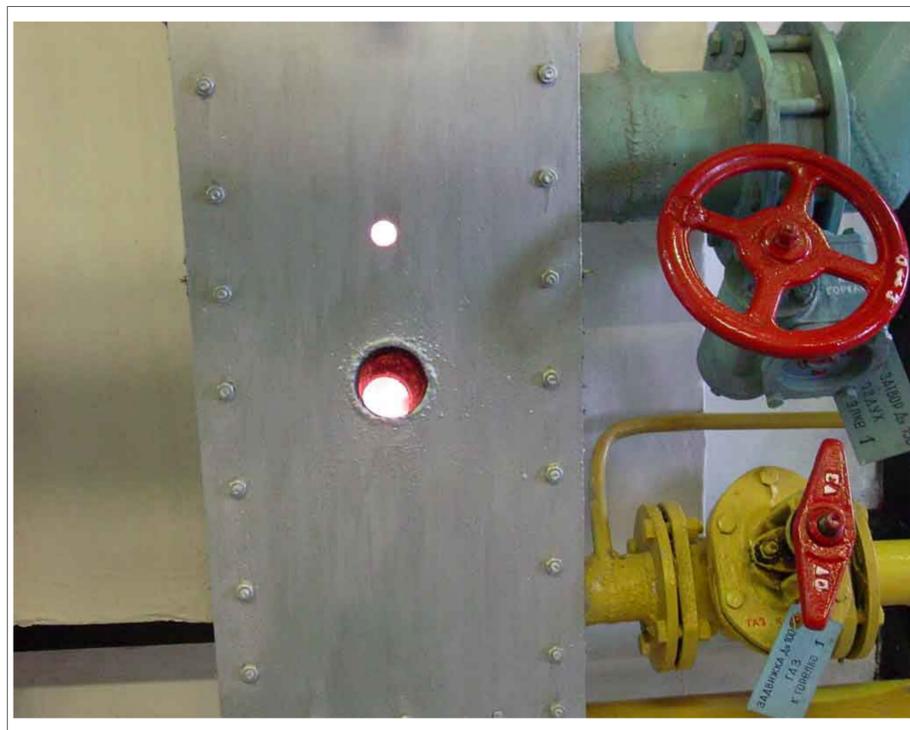
YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total CH4 vented (ave. m3/min)	17.6	20.8	24.1	36.4	30	28	34.4	32	49	42.83	43.8	59.6
Total CH4 recovered and utilized (Mm3/year)	7.1	12.4	19.9	16.6	17.4	21.1	13.7	17.9	33.4	21.79	23.4	18.8

TOTAL VOLUME OF METHANE EXPECTED TO BE RECOVERED/UTILIZED

YEAR	2009	2010	2011	2012	2013	2014	2015	2016
Total CH4 recovered and utilized at Kazakhstanskaya (m3/year)	4,000,000	4,300,000	8,000,000	8,600,000	8,600,000	12,600,000	13,000,000	13,000,000
Total CH4 recovered and utilized in Coal Mine Group (m3/yr)	7,800,000	19,300,000	23,000,000	23,600,000	23,600,000	27,600,000	28,000,000	19,800,000

PROPOSED TECHNOLOGIES

USE OF CMM AS A FUEL IN BOILERS FOR HEATING PURPOSE



MARKET ANALYSIS / DEMAND ANALYSIS

Consumers of the heat generated by combustion of coal mine methane in boiler stations are the mines of a private company - ArcelorMittal Temirtau JSC. Degassing methane is currently combusted in boiler houses of 5 mines: Lenin, Kostenko, Saranskaya, Shakhtinskaya and Abaiskaya (see map above).

ADDITIONAL INFORMATION

Current concentration of CH₄ at vacuum-pumping stations of the mine varies from 40 to 60%. However, a bigger range is possible due to shift of mining activities, seasonal weather conditions, etc.

Use of co-generation units was also considered by the company as one of the options for CMM utilization. The problems of wide distribution of pumping stations at the surface of mining allotments of the mines and instability of concentrations provide no suitable basis for this solution so far.

In accordance with the development schedule for the group mines, current plans are to install three boilers to secure thermal capacity of 35 MW that may provide utilization of approximately 13 Mm³ of CH₄ per year.

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