



# The Insider

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## *CMM promotes economic and environmental progress in Guizhou Province*

Guizhou has the 5<sup>th</sup> largest coal reserve in China. It is estimated the coal resources above 2000 meters of depth is more than 192 billion tons. The coal and coal-based industries play a significant role in Guizhou's economic and social development. However, there are not many coal mines with coal mine methane (CMM) drainage systems and the majority of drained CMM is regularly emitted into the atmosphere for mining safety reasons. Since methane (major content of CMM) is a potent greenhouse gas, improving CMM recovery and utilization in Guizhou will not only benefit the coal mining industry but also contribute to environmental protection.

To support the goals of the Methane to Markets Partnership (China is one of the partner countries), we applied for a grant from the Environmental Protection Agency (EPA) of the United States at the end of 2006. This grant has been approved and the project started in July 2007. The mission of this project is to transform coal mine methane from wasted, dangerous greenhouse gas into a clean energy asset by bridging the information gap between coal mines, investors, technologies and methane users in Guizhou Province.

Guizhou International Cooperation Center for Environmental Protection (GZICCEP) was established in 2001. With strong support from the Environmental Protection Bureau of Guizhou Province, GZICCEP has carried out many projects with its international partners. Those projects cover capacity building, natural resource management, community development, biodiversity protection, participatory environmental education, ecological rehabilitation, pollution control and clean, sustainable industrial processes. The international partners include the Swedish International Development Cooperation Agency (SIDA), the Norwegian Agency for Development Cooperation, the International Crane Foundation, the Ford Foundation, the Canada Fund, Initiative Development, Oxfam Hong Kong, and the World Wildlife Fund (WWF). This particular project also receives support from Guizhou Coal Mine Safety Bureau.

GZICCEP appreciates EPA's support with this grant and looks forward to working with all domestic and international organizations on this initiative to promote sustainable development in Guizhou.

—Mingjie Huang, GZICCEP Director

## *Project Kickoff! More on the GZCMM Initiative*

The Guizhou Coal Mine Methane Recovery and Utilization Initiative (hereafter referred to as the GZCMM Initiative) has launched! The Team is working hard now to fulfill the Initiative mission and goals. Indeed, one of the first objectives is approaching fast, to escort a delegation of Guizhou coal mine experts and representatives to the 2007 Methane to Markets Partnership Expo in Beijing (see advertisement on last page). A summary of the Initiative is described more below: *(continued on page2)*

**“The GZCMM Mission is to transform coal mine methane from wasted, dangerous greenhouse gas into a clean energy asset by bridging the information gap between coal mines, investors, technologies and methane users in Guizhou Province, China.”**

*(Project Kickoff! Continued from Page 1)*

### **What is the GZCMM Initiative?**

The Guizhou Coal Mine Methane Initiative was created when the Guizhou International Cooperation Center for Environmental Protection (GZICCEP) received a grant from the United States Environmental Protection Agency (EPA) in support of its Methane to Markets Program. This project is to promote Coal Mine Methane (CMM) recovery and utilization among gassy coal mines in Guizhou Province, China. More specifically, the initiative is designed to fill the information gap that exists between international CMM project developers interested in Guizhou and local coal mines that are willing to host cooperative CMM recovery and utilization projects. Not only does methane recovery reduce the risks of coal mine explosions, but its effective utilization also reduces the direct release of methane emissions to the atmosphere, thereby reducing potent greenhouse gases that cause global warming. It also provides cleaner and more diversified energy resources to surrounding communities.

**The GZCMM Mission is to transform coal mine methane from wasted, dangerous greenhouse gas into a clean energy asset by bridging the information gap between coal mines, investors, technologies and methane users in Guizhou Province, China.**

### **What are the goals of the Project?**

The CMM Recovery and Utilization Initiative aligns itself with the goals of the Methane to Markets Partnership (find out more at <http://www.methanetomarkets.org/>) and will pursue its mission in Guizhou so that:

- CMM is widely perceived as a clean energy source and coal mines take actions to improve their drainage and utilization systems;
- CMM recovery and utilization projects are developed with international involvement in 2-3 coal mines in Guizhou;
- Through demonstration projects, other coal mines in Guizhou see CMM projects economically benefit from coal production and an increase in mine safety and begin to pursue similar projects;
- A better understanding of the magnitude of CMM that is liberated by small coal mines in Guizhou is realized and appropriate strategies are formed to mitigate the emissions that they produce.

## *Upcoming Initiative Sponsored Events 2007 Beijing Expo and Workshop*

**2007 Beijing Expo:** The GZCMM Initiative plans to escort a small delegation of interested Guizhou coal mine representatives and experts to the 2007 Methane to Markets Partnership Expo in Beijing from 30 October to 1 November. This will be a premier event where international companies interested in the methane market can meet and pursue collaboration opportunities with local Chinese companies, like those from Guizhou. Please contact GZCMM Initiative for more information or assistance in meeting Guizhou representatives.

**Spring GZCMM Workshop:** The Initiative will host a workshop this coming Spring, date to be announced, that will focus on issues and the appropriate methods required to conduct CMM projects in Guizhou. This workshop will provide further opportunities for international companies to collaborate with Guizhou partners for CMM recovery and utilization projects. A major goal of this workshop will be to jumpstart Guizhou coal mines in the preparation of pre-feasibility studies, ultimately culminating in the development of effective CMM recovery and utilization projects.

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*We can feature your project or company here!*

Allow us to share your experiences with Coal Mine Methane Recovery and Utilization in this newsletter and on our webpage. Contact us if you would like to:

- Describe ongoing or developing CMM projects in Guizhou or China in general;
- Showcase your coal company to the international community;
- Advertise CMM technology.

Contact Katie Scott at [kscott@gzcmm.org](mailto:kscott@gzcmm.org).

## Inside Guizhou: What are the Prospects?

### Guizhou Coal Resources and Production Planning

Guizhou is rich in coal resources. The total amount is estimated at 241.9 billion tons, among which 49.9 billion tons are guaranteed and 192 billion tons are above 2000 meters depth. Since 1949, when the first coal mining company in Guizhou, Zhudong Coal Mine Ltd., reached its peak production of 100 tons per day, the coal mining industry has grown quickly. In 1980 the annual production was close to 10 million tons. The annual production reached 108 million tons in 2005. In 2005 there were 2,143 coal mines in Guizhou. Of these mines, the small coal mines produced 78% of the production, averaging only 40,000 tons per year per mine. However, reliance on these small coal mines, unsafe and unsuitable for extensive CMM projects, is soon to change.

Guizhou has an ambitious plan for its energy industry according to the “Eleventh Five-Year Plan”. In the next 5 to 10 years, Guizhou will build 20 more power projects with a total installed capacity of 21,970 MW, among which 14,300 MW will be coal-fired power plants. In order to supply enough coal to those power plants, Guizhou plans to reach an annual production of 160 million tons by 2010. It is almost impossible to rely on the small coal mines to supply coal steadily. Coal mining industry restructuring is necessary and large coal mines are to be built to support the coal-fired power plants. During the eleventh five-year plan (2006-2010), 22 large coal mines will be constructed and operating and their total production will be 38 million

tons per year. During the twelfth five-year plan (2011-2015), these 22 coal mines will reach their full production capacity and produce an additional 8 million tons per year. The total production and production from large and medium coal mines are shown in the chart below. Many of these future mines will likely be classified as gassy mines and will have to install drainage systems. Hence, as the need for CMM drainage escalates, so too will the growth of CMM projects.

### CMM Utilization in Guizhou

CMM drainage practice in Guizhou coal mines can be traced back to 1973 when Shuicheng Coal Mine started to drain gas due to mining safety concerns. CMM was directly released to the atmosphere. The first CMM utilization project occurred in the Dayong area of Liuzhi Coal Mine Group. Here, CMM was drained and used as town gas by the end of 1985. Liuzhi continued to expand this project and built a gas tank of 5000 cubic meters. In 1992 the town gas system could utilize 8.4 million cubic meters of methane and reached ten thousand households. In 1991, Liuzhi converted a used airplane engine into a CMM-based generator with a capacity of 2x400 KW in the Liangshuijing coal mine. This became the first CMM-to-electricity project in Guizhou Province.

There are at least two CMM/CDM projects under development now in Guizhou. One is “Guizhou Shuicheng Dawan-Zhongling CMM Utilization Project” from Shuicheng Mining Group. The anticipated CO<sub>2</sub> equivalent (CO<sub>2</sub>e) reduction after 2008 is 710,000 tonnes per year. The other one is “Guizhou Qianxi Qinglong CMM Utili-

“Guizhou has an ambitious plan for its energy industry...As the need for CMM drainage escalates, so too will the growth of CMM projects.”

zation Project” from Shandong Yankuang Group Guizhou Nenghua Company. This project will produce 70,000 to 87,000 tonnes of CO<sub>2</sub>e per year. Both projects burn low concentration CMM (around 10%) and use 500 KW and/or 800 KW gas engines made by Shandong Shengli Youtian Shengli Dongli Jixie Group (Shengdong Group). Both projects have passed reviews of the National Development and Reform Commission (NDRC). Dawan-Zhongling Project was put on a Designated Operational Entity’s (DOE) website for public comments during September and October 2006. Right now the Qinglong Project is also in line at a DOE for public comments until the 9<sup>th</sup> of September 2007.

In addition to these two projects, most large and medium-sized coal mine companies are at least aware of CMM/CDM projects and have even started to prepare such projects. Some are internally motivated. After realizing a CMM project can be developed into a CDM project with carbon credits that could be traded and bring back revenue, some coal mine companies have determined that CMM drainage and utilization will be one of their company’s strategic directions. For example, Panjiang Coal and Power Group, the largest coal mining company in Guizhou, has recently established a new subsidiary company that will focus on CMM/CDM project development.

There are also pushes from the outside. The Central Government has increased the pressure on companies to improve energy efficiency and reduce emissions. In addition, CDM consulting companies from outside and within Guizhou are actively pursuing CDM project contracts with coal mines. There are at least a few more coal mine companies in Guizhou that are negotiating signed contracts with CDM  
(Continued on Page 5)

**Chart: Coal Production and Share of Large/Medium Coal Mines**

(Unit: Million Tonnes)

	2006	2007	2008	2009	2010
<b>Total Production</b>	119	129	139	148	160
<b>Production from Large/Medium Coal Mines</b>	29.1	40.4	58.95	78.95	110.1
<b>% of Large/Medium Coal Mines</b>	24.5%	31.3%	42.4%	53.3%	68.8%

## *The International Community with Eyes on China*

This November the United Nations' Intergovernmental Panel on Climate Change will release the finalized Fourth Assessment Report (AR4), "Climate Change 2007". However, the draft releases of the report made earlier this year sent out global shock waves, either reaffirming many people's beliefs about, or giving others cause to consider, the current state of global warming, its impacts, and options for its mitigation. Even China is recognizing the possibility that a year of extreme weather conditions may have been caused by climate change, according to Song Lianchun, head of the China Meteorological Administration's Department of Forecasting Services and Disaster Mitigation, as discussed at a news conference carried live on the central government Web site ([www.gov.cn](http://www.gov.cn)).

While China grapples with the effects of climate change in its own country, it also faces the greater challenge that it is rapidly surpassing the United States as the top emitter of greenhouse gases. Unlike the United States, China is a developing country, and deeply entrenched in a stage of industrialization. China will need lots of

energy in the years to come. And now the international community is pushing for energy efficiency and low-emissions technology.

As China is heavily dependent on coal energy resources, Coal Mine Methane (CMM) Recovery and its Utilization helps mitigate global warming while maintaining economic growth. Methane is still commonly emitted directly from the coalmines, to reduce coal mining safety hazards. Nevertheless, channeling methane, a potent greenhouse gas, into other energy uses, like power generation, would reduce emissions. This allows China to continue its development as well as leads to further economic opportunities, with the assistance of Clean Development Mechanism (CDM).

CDM is a form of carbon credit trading based on the Kyoto Protocol. Essentially, CDM projects enable developing countries to generate carbon credits due to participating in emission-cutting projects. The Developing country can then sell these credits to companies or governments, who have signed onto the Kyoto Protocol, to offset their own emissions, or to sell the

"With Chinese emissions at their highest, and growing, the international community is beginning to see opportunities through the haze of greenhouse emissions."

credits to others. Globally, emissions are reduced, while developing countries can continue their goals of sustainable development.

With Chinese emissions at their highest, and growing, the international community is beginning to see opportunities through the haze of greenhouse emissions. Due to the fact that China's industrial boom is also highly inefficient, China has huge potential to generate many carbon credits by participating in relatively simple, low-cost projects. CMM Recovery and Utilization projects are perfect examples and are becoming hot CDM candidates. If all goes well, China also stands to benefit economically *and* environmentally.

—Katie Scott, *International Communications Coordinator*

### *CDM Funding Opportunities in the News*

This summer, the international community announced new opportunities for Clean Development Mechanism (CDM) project funding. To name a few:

- The Clean Development Mechanism in China, Office of National Coordination Committee on Climate Change, posted a Call for Project Proposals for the Global Opportunities Fund Climate Change and Energy Programme of the British Foreign and Commonwealth Office (FCO). They will support projects with priorities in climate and energy security, including projects that promote diversification of energy and the promotion of a low-carbon economy and effective carbon market. More information can be found at the website for Clean Development Mechanism of China, <http://cdm.ccchina.gov.cn>. Deadline for concept papers is September 21, 2007.
- A Reuters article, August 9, 2007, states, "A new 400 million euro (\$552 million) carbon trading fund backed by Microsoft founder Bill Gates will start by buying 10 million tonnes worth of emissions reductions by 2012 from projects in China." Peony Capital Ltd, a Beijing-based investment vehicle, has already committed to buying credits.
- A Wall Street Journal article, August 8, 2007, announced the Asian Development Bank has raised US\$151.8 million through a fund to finance Clean Development Mechanism projects in Asia. Belgium, Finland, Luxembourg, Portugal, Spain, Sweden and Switzerland have made contributions to the fund so that they may achieve their carbon emission reduction commitments under the Kyoto Protocol.

## Upcoming Events and Conferences

- 16-18 September, 2007: *China (Taiyuan) International Coal & Energy New Industry Expo, Taiyuan, Shanxi, China. Visit [www.cicenfair.com](http://www.cicenfair.com).*
- 25—27 September, 2007: *US Coal Mine Methane Conference, Innovative developments in CMM project opportunities, St. Louis, Missouri. To register, visit <http://www.ravenridge.us/conference/>; For questions, contact Charlee Bergamo at [cbergamo@ravenridge.com](mailto:cbergamo@ravenridge.com).*
- 30 October—1 November, 2007: *Methane to Markets Partnership Expo, Beijing. View this site for more information: <http://www.methanetomarkets.org>*
- 6—9 November, 2007: *The China Coal & Mining Expo 2007, Beijing, China's 12th International Technology Exchange & Equipment Exhibition. View this site for more information: <http://www.chinaminingcoal.com/2007/>.*
- Spring, 2008: *Guizhou CMM Initiative to host workshop focusing specifically on CMM development in Guizhou. Stay tuned for more*

(*Inside Guizhou, continued from page 5*) consulting companies for their planned CMM projects. We expect to see even more coal mine companies develop CMM/CDM projects in 2008.

### High Concentration v.s. Low Concentration CMM

Although CMM/CDM projects are hot in Guizhou, the first CMM/CDM project in Guizhou (Dawan-Zhongling Project) has not requested to register with the Executive Board (EB), which will determine if the project is eligible for a CDM project. Sources interviewed for this project have mentioned that there is a “legal barrier” for this project to be registered. If they submit the request for registration, it is very likely to be rejected, which means the coal mine company will lose long-term economic benefits from carbon credit trading. The “legal barrier” refers to “Coal Mine Safety Regulations” issued by State Administration of

Work Safety and State Administration of Coal Mine Safety effective from the 1<sup>st</sup> of January of 2005. The Regulation Section 148 states clearly that, “When CMM is to be utilized, its concentration shall not be lower than 30%. In addition, the CMM utilization system has to install anti-back fire, anti-back gas, and anti-explosion safety measures.” If this regulatory barrier continues to exist, it is very unlikely for CMM projects in Guizhou to be registered as CDM projects. It not only impacts future CMM projects in Guizhou, but also many similar coal mines in China, as many coal mines currently can only recover low concentration CMM.

To deal with this issue, some CMM utilization related companies and research institutes are actively lobbying the government to change the situation. The Project Manager of Dawan-Zhong Project mentions that they are pushing the government to develop a low-concentration CMM utilization standard. He expects to reach this goal by the end of this year. During the 9<sup>th</sup> and 10<sup>th</sup> of August, the Energy Bureau and High-tech Industry Department of NDRC jointly held a workshop on low-concentration CMM utilization technologies in Fuxin City, Liaoning Province. It is reported that the workshop has expressed the following views and plans:

“The major reason for a small percentage of CMM utilization in China is because low-concentration CMM is not utilized extensively. Technologies play a major role in hindering CMM utilization.”

- The major reason for a small percentage of CMM utilization in China is because low-concentration CMM is not utilized extensively. Technologies play a major role in hindering CMM utilization. Considering technology maturity and its adaptation, market demand, and economics, low-concentration CMM to electricity technology will be the mainstream of the future. However, incentive policies and standards are needed to provide support.

- Low-concentration CMM utilization technologies shall be combined with CDM project development in order to improve CMM project economics. Standards for low-concentration CMM transfer safety and standards for CMM emissions shall be developed soon.

- It is necessary to strengthen and accelerate development of low-concentration CMM and ventilation air methane (VAM) utilization technologies and related CDM methodologies.

In China some projects have utilized 30% or above CMM and they have been registered as CDM projects. However, in order to capture CMM from the majority of China's coal mines, can low-concentration CMM utilization gain support from the government at the regulation and policy level? Can EB recognize low-concentration CMM projects as CDM projects? Whatever the result is, it will have significant impact on the blooming CMM industry in Guizhou and throughout China.

—Jiang Boni, Project Manager



*Pipes paved for coal mine methane drainage in Guizhou. Province.*

## CMM Recovery and Utilization Initiative Guizhou Province, China

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### *We'd like to hear from you.*

The GZCMM Initiative relies on experts like you. If you would like to see specific content or even have a contribution to this newsletter, please let us know! We are particularly interested in knowing more about ongoing or developing projects, and opportunities and constraints to CMM recovery and utilization projects, whether from an international or local Guizhou perspective. We want to be informative, and most of all, to promote successful and effective projects.

The Guizhou CMM Initiative is hosted by Guizhou International Cooperation Center for Environmental Protection (GZICCEP), which is affiliated with the Guizhou Environmental Protection Bureau. Find out more at <http://www.gziccep.com>.

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This grant supports the Methane to Markets

Partnership which promotes clean energy projects together with a multitude of international partners while sustaining economic growth in the partner regions. Learn more at <http://www.methanetomarkets.org/>.

**Methane to Markets Partnership Expo**  
**Beijing, China 30 October - 1 November 2007**  
*Don't miss this opportunity, register today!*

### **Publicize your Project!**

Are you seeking technical support, financial support, or consultation for a methane recovery or use project?

If so, then the Partnership Expo is the perfect opportunity for you to publicize your project!

Submit a project template as soon as possible. Visit the Partnership Expo website for details or contact us for assistance.

The Methane to Markets Partnership Expo is the premier international forum for promoting methane recovery and use project opportunities and technologies. Join the international methane community and:

- \* Showcase project opportunities and technologies
- \* Meet with potential project partners and financiers
- \* Learn about the latest technologies and services
- \* Explore key technical, policy, and financial issues

Register at [www.methanetomarkets.org/expo](http://www.methanetomarkets.org/expo)  
or contact us for assistance!  
Email Katie Scott at [kscott@gzcmm.org](mailto:kscott@gzcmm.org).