

Current Status of Methane Emission Reduction in 4 sectors, China

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Outlines

1. National plan to combat climate change
2. Current status of methane emission reduction in coal
3. Current status of methane emission reduction in landfill
4. Current status of methane emission reduction in oil and natural gas
5. Current status of methane emission reduction in agriculture
6. EPA fund projects
7. China Coalbed Methane Clearinghouse

1 National plan to combat climate change



- National goal of save energy and emission reduction :
To reduce 20% energy for per GDP unit;
To reduce 20% pollutant emission.

1 National plan to combat climate change



- National Plan to Combat Climate Change, issued on June, 2007
 - Principle;
 - Important fields;
 - Standpoint.

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- Future development of M2M in China

Coal : emission reduction

Landfill :

Oil and gas :

Agriculture :

2 Current status of methane emission reduction in coal



36.81 trillion m³ of CBM/CMM resources contained in coal fields in depth of 300-2000 m, as much as the total amount of conventional natural gas resources in China (30 trillion m³).

2 Current status of methane emission reduction in coal



- In 2008 , more than 200 million m³ CMM drained in each province including Shanxi, Liaoning, Heilongjiang, Anhui, Henan, Guizhou and Chongqing. 2.45 billion m³ CMM drained in Shanxi, accounting for 43.2%.
- 5.3billion m³ of CMM recovered in 2008.

2 Current status of methane emission reduction in coal



- By 2008, 3400 wells had been drilled in China.
- 500 million m³ in 2008 .



2 Current status of methane emission reduction in coal



CMM/CBM Usage

- Household fuel:
1.72 billion m³, 2008
- Power generation:
Installed capacity of 920 MW till now.
- Industrial usage:

2 Current status of methane emission reduction in coal



- Shanxi ganghua CBM/CMM liquefied project and Jincheng 120MW CMM/CBM power generation project were put into production in July, 2009.
- Shanxi ganghua CBM/CMM liquefied project: Total investment 98 million dollars. First stage: liquefied production is 250 thousands m³ per day. Second stage: liquefied production is 570 thousands m³ per day. Total production capacity is 820 thousands m³ per day. Reduce CO₂ emission 5 million tons per year.

2 Current status of methane emission reduction in coal



- Jincheng 120MW CBM/CMM power factory: Total investment 0.875 billion RMB. The biggest CMM/CBM power factory in the world. Use CBM/CMM 0.18 billion m³ per year.



2 Current status of methane emission reduction in coal



- By Oct.8, 2008, NDRC had approved 56 projects for recovery and utilization of CMM.
- By Nov.28, 2008, 11 projects of recovery and utilization of CMM had been registered in EB. And 11 projects are being modified.

2 Current status of methane emission reduction in coal



表 在EB注册的煤层气CDM项目

Table CMM/CBM CDM projects which have been registered in EB (until Nov. 28, 2008)

	Project	Developer	Time
1	吉林辽源矿业(集团)梅河煤矿煤层气发电项目Jilin Liaoyuan meihe CMM power generation project	吉林辽源(矿业)集团 Jilin liaoyuan coal mine geoup	2008.09.12
2	河南平煤集团煤矿瓦斯综合利用项目Henan pingmei CMM general utilization project	河南平顶山煤业(集团)有限责任公司Henan pingdingshan coal mine group	2008.08.22
3	河南省义马煤业(集团)有限责任公司煤矿瓦斯综合利用项目Henan yima CMM general utilization project	河南省义马煤业(集团)有限责任公司Henan yima coal mine group	2008.08.02
4	山西省煤炭运销总公司阳泉分公司煤矿瓦斯利用项目Shanxi coal transportation company Yangquan sub company CMM utilization project	山西省煤炭运销总公司阳泉分公司Shanxi coal transportation company Yangquan sub company	2008.02.22
5	山西阳城县煤矿瓦斯综合利用项目 Shanxi yangcheng CMM utilization project	阳城县民生燃气有限责任公司Yangcheng town gas Ltd.	2007.12.11
6	山西柳林煤矿瓦斯利用项目Shanxi liulin CMM utilization project	柳林县晋鼎煤层气有限公司Liulin jinding CMM Ltd	2007.10.06
7	江西丰城矿务局煤矿瓦斯利用项目Jiangxi fengcheng CMM utilization project	丰城矿务局Fengcheng coal bureau	2007.09.24
8	阳泉煤业(集团)有限责任公司9万千瓦瓦斯发电项目Yangquan coal mine group 90MW CMM power generation project	阳泉煤业(集团)有限公司Yangquan coal mine group	2007.05.22
9	阳泉煤业(集团)有限责任公司煤层气在氧化铝焙烧炉利用项目Yangquan coal mine group alumina fuel project	阳泉煤业(集团)有限公司Yangquan coal mine group	2007.04.07
10	潘三矿抽采煤矿区煤层气(CMM)的利用和销毁项目Pansan mine CMM utilization project	淮南矿业集团Huainan coal mine group	2007.03.31
11	安徽淮北海孜、芦岭煤矿瓦斯利用项目Anhui huaibei haizi and luling CMM utilization project	安徽淮北矿业(集团)有限责任公司Anhui huaibei coal mine froup	2007.02.18

3 Current status of methane emission reduction in landfill



- By 2007, the total volume of domestic refuse cleaned up in 655 cities has reached 152 million tons. There were 453 domestic refuse treatment sites, among which the number for urban house refuse treatment reached 363.
- The means of landfill, composting and incineration respectively accounts for 81.7%, 2.7% and 15.6% of the total handling capacity.
- It's estimated that the potential production of methane from urban house refuse could reached 2.993 million tons with the volume of 4.186 billion m³, which could generate 12.8 billion kWh of electricity.

3 Current status of methane emission reduction in landfill



1 Landfill

By the end of 2008, about 30 landfill gas collection and treatment project has been constructed and put into operation. There are 19 landfill gas power generation stations with the installed capacity of more than 40MW.



3 Current status of methane emission reduction in landfill



表 已批准申请CDM的垃圾填埋场填埋气体利用项目
截至2008年12月31日

Landfill gas utilization projects approved as CDM by Dec.31 2008

序号 NO.	项目名称 Name of the project	项目业主 Project developer	国外合作方 Foreign Partners	估计年减排量 Estimated annual emission reduction
1	北京安定填埋场填埋气收集利用项目 Landfill gas recovery and utilization project in Beijing Anding landfill site	北京市二清环卫工程集团有限公司 Erqing Branch of Beijing Environment Sanitation Engineering Group Co., Ltd	荷兰国际能源系统公司 Holland International Energy System Company	90,000
2	南京天井洼垃圾填埋气发电项目 Nanjing Tianjingwa landfill gas power generation project	南京绿色能源再生工程有限公司 Nanjing Clean Energy Engineering Co., Ltd	EcoSecurities Group Ltd (UK)	265,032
3	梅州垃圾填埋场沼气回收与能源利用项目 Meizhou landfill biogas recovery and utilization project	深圳相控科技有限公司 Shenzhen PhasCon Technology Co., Ltd	Austrian HI/CDM Programme, Kommunalkredit Public Consulting GmbH (Austria)	278,000
4	深圳下坪固体废弃物填埋场填埋气体收集利用项目 Landfill gas recovery and utilization project in Shenzheng Xiaping solid waste landfill site	深圳利赛实业发展有限公司 Shenzhen Lisai Industrial Development Co., Ltd	Climate Change Capital Carbon Fund s.a.r.l (UK)	749,186
5	南京市轿子山垃圾填埋气回收利用供热项目 Nanjing Jiaozishan landfill gas recovery and heating project	南京允生新能源开发有限公司 Nnaging Yunsheng New Energy Development Co., Ltd	CAMCO International Limited (UK)	147,880
6	无锡桃花山垃圾填埋气发电项目 Wuxi Taohuashan landfill gas power generation project	无锡天顺环境技术有限公司 Wuxi Tianshun Environment Technology Co., Ltd	丰田通商株式会社 TOYOTA TSUSHO Corporation	75,316
7	广州兴丰垃圾填埋气回收利用项目 Guangzhou Xingfeng landfill gas recovery and utilization project	广州市惠景环保技术有限公司 Guangzhou Huijing Environmental Protection Technology Co., Ltd	爱斯凯碳投资组合有限公司 ICECAP	626,834

3 Current status of methane emission reduction in landfill



8	济南垃圾填埋气发电项目Jinan landfill gas power generation project	山东十方新能源有限公司 Shandong Shifang New Energy Co.,Ltd	EcoSecurities Group Ltd (UK)	150,158
9	南宁市城市生活垃圾填埋气发电项目Nanning urban refuse landfill gas power generation project	广西洁通科技有限公司Guangxi Jietong Technology Co.,Ltd	Biogas Technology Ltd (UK)	195,208
19	昆明五华垃圾填埋气发电项目 Kunming Wuhua landfill gas power generation project	昆明环业环保工程开发有限责任公司 Kunming Huanye Environmental Protection Engineering Co.,Ltd	Biogas Technology Ltd (UK)	201,586
11	湖南长沙桥驿垃圾填埋气发电项目Changsha Qiayi landfill gas power generation project in Hunan	长沙惠明环保能源有限公司 Changsha Huiming Environmental Protection Engineering Co.,Ltd	英国排放贸易有限公司UK Emission Trading Co.,Ltd	238,319
12	福州红庙岭垃圾填埋气发电项目Fuzhou Hongmiaoling landfill gas power generation project	福建天亿可再生能源技术发展有限公司 Fujian Tianyi Renewable Energy Technology Development Co.,Ltd	生态银行株式会社 (日本) Eco-bank Co.,Ltd (Japan)	181,234
13	天津市双口垃圾填埋场 Tianjing Shuangkou landfill site project	天津清洁能源环境工程公司 Tianjing Clean Energy and Environment Engineering Co.,Ltd	世界银行 (西班牙碳资金) World Bank (Spanish Carbon Fund)	155,823
14	昆明东郊白水塘垃圾填埋场沼气处理及发电项目Kunming Baishuitang landfill gas processing and power generation project	昆明环业环保工程开发有限责任公司 Kunming Huanye Environmental Protection Engineering Co.,Ltd	意大利阿兹亚环境股份有限公司ASJA Environment Co.,Ltd	64,302
15	南昌麦园垃圾填埋气回收和利用项目 Nanchang Maiyuan landfill recovery and utilization project	南昌新冠能源开发有限公司 Nanchang Xinguan Energy Development Co.,Ltd	One Carbon B.V	150,599

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16	沈阳大辛垃圾填埋气发电项目 Shenyang Daxing landfill power generation project	沈阳新新明天再生利用有限公司 Shenyang Xinxin Future Renewable Utilization Co. ,Ltd	丹麦碳基金，丹麦外交部 Denmark Carbon Fund, Department of foreign affairs of Denmark	195,436
17	绵阳市垃圾填埋气沼气发电项目 Mianyang landfill gas power generation project	绵阳泰都环境能源技术开发有限公司 Mianyang Taidu Environment and Energy Technology Development Co. ,Ltd	Sindicatum Carbon Carpital Ltd	103,204
18	沈阳老虎冲垃圾填埋沼气发电项目 Shenyang Laohuchong landfill gas power generation project	沈阳老虎冲垃圾处理有限责任公司 Shenyang Laohuchong Refuse Treatment Co. ,Ltd	意大利阿兹亚环境股份有限公司 ASJA Environment Co. ,Ltd	126,179
19	洛阳市生活垃圾填埋场填埋气发电项目 Luoyang domestic refuse landfill gas power generation project	上海百川畅银实业有限公司 Shanghai Baichuanchangyin Industrial Co. ,Ltd	复兴碳投资有限公司RCI Co. ,Ltd	86,700
20	南阳市生活垃圾填埋场填埋气发电项目 Nanyangshi domestic refuse landfill gas power generation project	上海百川畅银实业有限公司 Shanghai Baichuanchangyin Industrial Co. ,Ltd	复兴碳投资有限公司RCI Co. ,Ltd	57,167.20
21	长春市垃圾填埋气发电项目 Changchun landfill gas power generation project	吉林省世捷再生能源有限公司 Jilin Shijie Renewable Energy Co. ,Ltd	益可环境集团PLC Ecosecurities Group Co. ,Ltd PLC	150,330
22	厦门市东孚垃圾卫生填埋场填埋气体利用工程 Xiamen Dongfu landfill gas utilization project	厦门丸日新能源有限公司 Xiamen Wanri New Energy Co. ,Ltd	丸红株式会社 (日本) Marubeni Cooperation	94,084
23	太原山庄头垃圾填埋气回收与利用项目 Taiyuan Shanzhuangtou landfill gas recovery and utilization	太原凯田再生能源环保有限公司 Taiyuan Kaitian Renewable Energy and Environmental Protection Co. ,Ltd	ASJA ENVIRONMENT INTERNATIONAL B.V Mendrisio Branch	41,653
24	辽宁垃圾填埋气回收与利用项目 Liaoning landfill gas recovery and utilization project	辽宁凯田再生能源环保有限公司 Liaoning Kaitian Renewable Energy and Environmental Protection Co. ,Ltd	Cantor Fitzgerald Europe	69,961

3 Current status of methane emission reduction in landfill



25	太原新沟垃圾填埋气回收与利用项目 Taiyuan Xingou landfill gas recovery and utilization project	太原凯田再生能源环保有限公司 Taiyuan Kaitian Renewable Energy and Environmental Protection Co. ,Ltd	ASJA ENVIRONMENT INTERNATIONAL B.V Mendrisio Branch	46,648
26	合肥市龙泉山生活垃圾填埋气发电工程 Hefei Longquanshan domestic refuse landfill gas power generation project	合肥新冠能源开发有限公司 Hefei Xinguan Energy Development Co. ,Ltd	One Carbon International B.V	130,881
27	大连毛茛子垃圾填埋场沼气回收与利用项目 Dalian Maoyingzi landfill gas recovery and utilization project	大连相控科技有限公司 Dalian PhasCon Technology Co. ,Ltd	IFC (Netherlands)	287,433
28	黄石垃圾填埋场沼气回收与利用项目 Huangshi landfill gas recovery and utilization project	深圳相控科技有限公司 Shenzhen PhasCon Technology Co. ,Ltd	维多石油集团 (瑞士) Victoria Petroleum Group (Switzerland)	93,365
29	惠州垃圾填埋厂沼气回收与利用项目 Huizhou landfill gas recovery and utilization project	深圳相控科技有限公司 Shenzhen PhasCon Technology Co. ,Ltd	IFC (Netherlands)	136,250
30	永城市豫东垃圾处理厂项目 Yudong landfill project in Yongcheng City	永城市金财投资发展有限公司 Yongcheng Jincai Investment Development Co. ,Ltd	环保桥有限公司 Green Bridge Co. ,Ltd	17,030

3 Current status of methane emission reduction in landfill



Landfill gas power generation project of Shanghai Laogang Renewable Energy Co. Ltd.

- Total investment: 200 million RMB
- Biggest landfill gas power generation project in Asia
- Tradable carbon emission reduction of 600,000 tons/a
- The project composes of 4 stages. 12 power generation units with the installed capacity of 15MW will be installed in the recent stage.

3 Current status of methane emission reduction in landfill



2 Incineration

- More than 9 domestic refuse incineration stations in 2008 with the handling capacity of 9000t/d were built.
- Dozens of similar refuse power generation stations are under construction or to be constructed.

3 Current status of methane emission reduction in landfill



- 表 发改委批准的垃圾焚烧发电CDM项目 - 截至2008年12月31号
- Refuse incineration power generation CDM project approved by NDRC by Dec.31 2008

序号 NO.	项目名称 Name of the project	项目业主 Project developer	国外合作方 Foreign Partner	估计年减排量 Estimated annual emission reduction
1	福州红庙岭垃圾焚烧发电厂 Fuzhou Hongmiaoling refuse incineration power plant	福州红庙岭垃圾焚烧发电有限公司 Fuzhou Hongmiaoling Refuse Incineration Power Generation Co. ,Ltd	Green Hercules Trading Limited (UK)	174,616.70
2	吉林省吉林市生活垃圾焚烧发电项目 Jilin household refuse incineration power generation project in Jilin province	吉林市双嘉环保能源利用有限公司 Jilin Shuangjia Environmental Protection Energy Utilization Co. ,Ltd	英国益可环境金融集团公司 UK Ecoscurities Group	176,751
3	山东省临沂市垃圾焚烧综合利用热电厂项目 Linyi refuse incineration combined heating and power generation project	临沂中环新能源有限公司 Linyi Zhonghuan Renewable Energy Co. ,Ltd	LUSO Carbon Fund	118,658
4	天津泰环垃圾焚烧综合利用项目 Tianjing Taihuan refuse incineration utilization project	津泰环再生资源利用有限公司 Jingtaihuan Renewable Resources Utilization Co. ,Ltd	国际能源系统 (荷兰) 公司 Holland International Energy System Company	63,511
5	江苏省启东市天楹15兆瓦生活垃圾焚烧发电项目 Qidong Tianying 15MW refuse incineration power generation project in Jiangsu province	启东市天楹环保有限责任公司 Qidong Tianying Environmental Protection Co. ,Ltd	维多石油集团 Vitoria Petroleum Group	57,257
6	浙江省慈溪垃圾焚烧热电联产项目 Zhejiang Cixi refuse incineration combined heating and power generation project	慈溪中科众茂环保热电有限公司 Cixi Zhongke Zhongmao Environmental Protection and Thermal Power Co. ,Ltd	大和SMBC证券投资有限责任公司 Daiwa SMBC Securities Investment Co. ,Ltd	180,254
7	成都洛带城市生活垃圾焚烧厂 Chengdu Luodai urban refuse incineration plant	成都威斯特再生能源有限公司 Chengdu West Renewable Energy Co. ,Ltd	住友商事株式会社 SIMITOMO Corporation	142,495
8	山东淄博垃圾焚烧热电联产项目 Zibo refuse incineration combined heating and power generation project in Shandong	淄博环保能源有限公司 Zibo Environmental Protection Energy Co. ,Ltd	大和SMBC证券投资有限责任公司	155,445

3 Current status of methane emission reduction in landfill



9	绍兴市垃圾和污泥处理综合利用工程 Shaoxing refuse and sludge treatment and utilization project	绍兴市中环再生能源发展有限公司 Shaoxing Zhonghuan Renewable Energy Co.,Ltd	LUSO Carbon Fund	179,963
10	浙江省杭州萧山生活垃圾焚烧发电项目 Hangzhou Xiaoshan refuse incineration power generation project	杭州萧山锦江绿色能源有限公司 Hangzhou Xiaoshan Jingjiang Green Energy Co.,Ltd	大和SMBC证券投资有限责任公司 Daiwa SMBC Securities Investment Co.,Ltd	84,320
11	湖州垃圾焚烧发电项目 Huzhou refuse incineration power generation project	湖州南太湖环保能源有限公司 Huzhou South Taihu Green and Environmental Protection Energy Co.,Ltd	Sumitomo Corporation (Japan)	-
12	昆明五华城市固体垃圾焚烧发电项目 Kunming Wuhua solid refuse incineration power generation project	昆明鑫兴泽环境资源产业有限公司 Kunming Xinmingze Environment Resources Industry Co.,Ltd	Dresdner Bank AG	-
13	武汉武昌城市生活垃圾焚烧发电项目 Wuhan Wuchang refuse incineration power generation project	武汉市绿色环保能源有限公司 Wuhan Green and Environmental Protection Energy Co.,Ltd	德累斯登银行 Dresdner Bank	-

4 Current status of methane emission reduction in oil and natural gas



- The volume of methane leaked during the production, processing and transportation of oil and natural gas holds the second place of the total emission, which reached 1.256 billion CO₂e
- Methane leak detection technology
- Natural gas recovery and utilization project of UNCP
Relying on the West-to-East natural gas transmission project, by Apr. 2009, capacity 0.4 billion m³ gas recovery and usage.

5 Current status of methane emission reduction in agriculture



- GHG emission in agriculture accounts for 13.5% of the total of the world.
- Methane emission in agriculture takes up 50% of the total emission volume caused by human activities.
- In China, GHG emission from agriculture accounts for 17% of the country's total emission. The emission volume of methane caused by agriculture activities is $1719.6 \times 10^4 \text{t}$, accounting for 50.15% of the total emission in China. (The People's Republic of China Initial National Communication on Climate Change)
- Rural biogas utilization projects and stalk power generation projects

5 Current status of methane emission reduction in agriculture



1、Rural Biogas

- 3050 rural residents using biogas, 39,500 biogas projects for agriculture waste treatment (2700 biogas projects in medium and large-scale farms), and 70,000 rural biogas service branches
- Every year, the biogas projects could produce 12.2 billion m³ of biogas, 385 million tons of biogas fertilizer, which can replace 18,500,000 tons of standard coal, and reduce carbon emission of more than 45,000,000 tons.

5 Current status of methane emission reduction in agriculture



中国农村沼气建设 Village gas construction in China

5 Current status of methane emission reduction in agriculture



- Mengniu gas power generation project
- Largest biogas power generation factory in the world. First biogas power generation factory in milk industry in China. Total investment 45 million RMB. Be put into production on Jan.18. 2008.
- The capacity 1.36MW.
- 12,000 m³ per day, 30,000 KWh per year.
- Emission reduction: 25,000t CO₂ every year.

5 Current status of methane emission reduction in agriculture



2、 Stalk power generation

- Stalk is good clean energy
- In 1988, Denmark, first stalk power generation factory
- More than 700 million tons stalk per year, 30% was used as raw material for paper making, construction and handicraft industry. 500 million tons stalk was burned or abandoned
- First stalk power project in China: Guoneng shanxian 1×25MW stalk power generation project. Dec, 1, 2006.
- In 2008, Notice from NDRC, to provide allowance for stalk power generation.

5 Current status of methane emission reduction in agriculture



- By Dec. 2007. 7 stalk power generation projects had been put into production. Total capacity is 25 MW.
- Now, except Suzhou stalk power generation factory, 7 projects had been registered as CDM projects in EB. 35 projects were approved in NDRC.
- Hebei jinzhou 24MW stalk power generation project got first CERs earning on Jan, 16, 2009.

6 EPA fund projects

国际甲烷市场化合作计划中国项目清单 M2M projects list of China

序号	项目名称	执行单位	合同金额	起始年
农业				
1	中国农业甲烷市场化研究	密歇根州立大学	4.3757万美元	2006
2	沼气技术、政策和机制创新研讨会	中国沼气学会	5.5万美元	2006
3	促进中国农村可再生能源发展的能力建设	中国农业部	15万美元	2006
煤炭				
1	低浓瓦斯发电示范项目	煤炭信息研究院	10万美元	2006
2	铁法催化燃烧处理低浓瓦斯可研报告	澳大利亚联邦科学研究院	20.0102万美元	2006
3	中国贵州煤层气回收及利用	贵州环境保护国际合作中心	6.3503万美元	2006
4	中国煤矿安全与清洁电力生产	杰森豪全球事务中心	17.125万美元	2008
5	中国山西南部减少甲烷排放采煤前抽采瓦斯技术评估和指南	弗吉尼亚技术中心	30万美元	2008
6	中国煤层气抽采利用技术评估	煤炭信息研究院	18万美元	2009
垃圾填埋				
1	中国垃圾填埋气能源回收与减排	加利福尼亚州立大学	9.5万美元	2006
2	中国垃圾填埋气能源回收和利用可研报告	中国环境卫生技术中心	17.5万美元	2008
石油与天然气				
1	2009-9-30 中国石油与天然气系统甲烷排放及泄漏监测	RTI国际研究中心	49.9251万美元	2008

M2M projects list of China



Num	Project	Unit	Negotiated total	From
Agriculture				
1	Building a M2M Agricultural Sector Research Network (MARN) in China	Michigan State University	\$43,757	2006
2	Workshop on biogas technological, policy and institutional innovations	China Biogas Society	\$55,000	2006
3	Capacity Building for the Promotion of Rural Renewable Energy Development in China	Chinese Ministry of Agriculture (MAGC)	\$150,000	2006
Coal				
1	Demonstration of power generation using low quality coal mine methane, emission monitoring & engine perf. Analysis	CCII	\$100,000	2006
2	A feasibility study on mitigating and utilizing diluted mine methane by using a monolithic catalytic combustor at Tiefa	Australia's Commonwealth Scientific and Industrial Research Organization (CSIRO)	\$200,102	2006
3	Coal Mine Methane (CMM) Recovery and Utilization Initiative in Guizhou Province, China	Guizhou International Cooperation Center for Environmental Protection	\$63,503	2006
4	The Methane Connection: Coal Mining Safety & Clean Power Production in China	Jackson Hole Center for Global Affairs	\$171,250	2008
5	Development of Guidelines & Evaluation Technical for Degassing Coal Mine Methane in Advance of Mining to Reduce Methane Emissions in the Southern Shanxi Province of China	Virginia Tech	\$300,000	2008
6	Technical assessment of coal mine gas recovery and utilization in China	CCII	\$180,000	2009
Landfill				
1	Energy Recovery and Emission Reduction of Landfill Gas in China	California State University Fullerton Foundation	\$95,000	2006
2	Landfill Gas Energy Recovery and Utilization Feasibility Study in China	Env. Sanitation Engineering Tech Research Center-China	\$175,000	2008
Oil and gas				
1	Methane Emissions and Leak Detection in the Chinese Oil and Natural Gas System	Research Triangle Institute International (RTI)	\$499,251	2008

A decorative graphic consisting of overlapping colored squares (yellow, red, blue) and a black crosshair.

6 EPA fund projects

Suggestions

- Increase funds support
- Fasten technology transfer

7 China Coalbed Methane Clearinghouse

- Experiences in CBM/CMM and CDM
 - China Coalbed Methane Clearinghouse established with support of USEPA in 1994
 - Prefeasibility studies on CBM/CMM projects
 - IPCC report
 - Projects with World Bank and Asian Development Bank

7 China Coalbed Methane Clearinghouse



7 China Coalbed Methane Clearinghouse

- Main tasks :
 - 1994 - 1999, project summary report:
 - 4 important study project reports;
 - 7 inquiry and consult reports;
 - 4 international meetings;
 - “A handbook of coalbed methane development and utilization”

7 China Coalbed Methane Clearinghouse

- Future of China CBM/CMM development
- CBM/CMM projects guideline of China for international unit and abroad company
- Investment opportunities in coal mine methane projects
8 projects: Pingdingshan, Yangquan, Jiaozuo, Tiefa, Huainan, Panjiang, Fushun, Jincheng

7 China Coalbed Methane Clearinghouse

- CBMC and M2M
- M2M office in China
 - Represent NDRC, in charge of 4 fields coordination.
 - CBM/CMM meeting , 2009,Nov.,10-11th,Beijing
 - 2010, M2M Expo
 - New Projects

- For more information, please contact us and welcome to visit CCII





Thank You!

谢 谢!