

The Experience with CMM Development: A Case Study Focusing on Policy from China



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Outline



1. Introduction

2. Incentive Policies

3. Achievements of CMM Development in China

4. Experiences sharing from China

China Coal Information Institute (CCII)



China Coal Information Institute(CCII), established in 1959, is a national research organization with 413 capable staffs.

• Scope of work

- Policy study
- Periodical and Publication Press
- Technology R&D
- International Cooperation



1995年2月，煤炭工业部王森浩部长（左图右一）和美国能源部长奥利里女士（左图左二）及中美两国有关部门官员出席煤层气信息中心揭牌仪式，陈明和总工程师（上图左）和美国环保局副局长尼采（上图右）为中心成立揭牌

Opening Ceremony of the Clearinghouse

1. Introduction



- ❖ Safety、 Energy、 Environment
- ❖ Inter-governmental Committee of CBM/CMM Control, 2005.3
 - ❧ National Development and Reform Commission (NDRC)
 - ❧ State Administration of Work Safety (SAWS)
 - ❧ Ministry of Science and Technology (MOST)
 - ❧ Ministry of Finance (MOF)
 - ❧ Ministry of Human Resources and Social Security (MOHRSS)
 - ❧ Ministry of Land and Resources (MLR)
 - ❧ Ministry of Environmental Protection (MEP)

1. Introduction

- ❖ Administrative Office: CBM/CMM Division, National Energy Administration



The 13th Meeting of Inter-governmental Committee of CMM Control in Beijing(2016.1.28)

1. Introduction



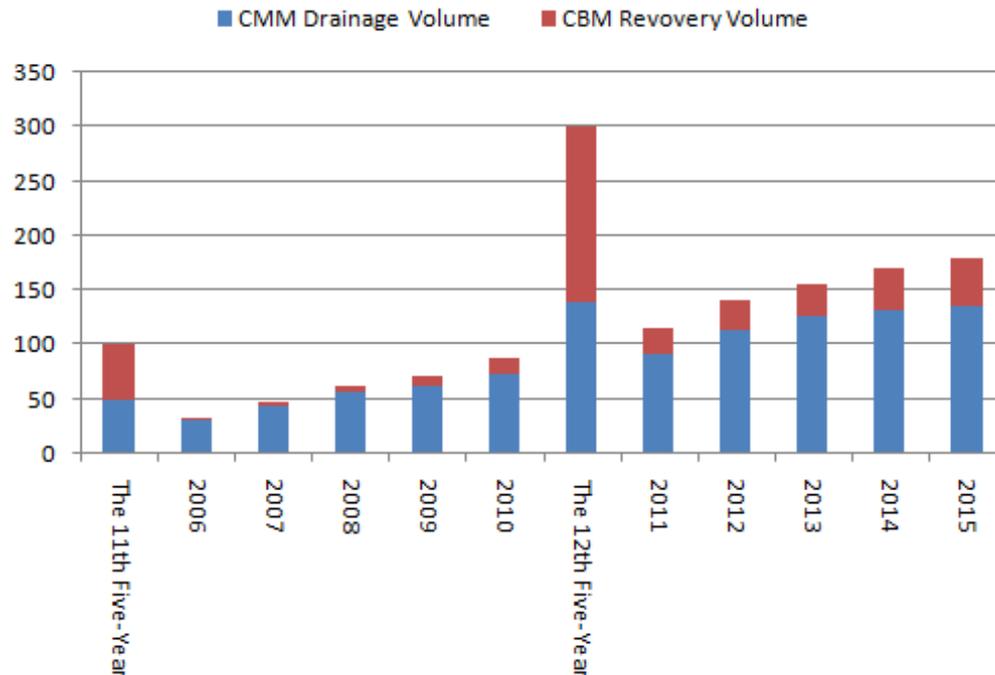
- ❖ Guidance on Acceleration of CBM/CMM Development and Utilization (Issued by State Council), 2006
- ❖ Emission standard for CMM drainage — MEP, 2008
- ❖ Notice on extension of CBM foreign cooperation — MOF, COM、NDRC、 MLR;
- ❖ Important research on key tech. preventing major disasters of CMM, fire, roof in coal mine — MOST

1. Introduction

- ❖ Guidance on Further Acceleration of CBM/CMM Development and Utilization (Issued by State Council), 2013, No.93
 - ❧ Increase fiscal funding Subsidy
 - ❧ Strengthen tax policy support
 - ❧ Improve CMM price mechanism and CMM power pool purchase price policy
 - ❧ Strengthen management of CMM recovery and utilization
 - ❧ Promote scientific and technological innovation
 - ❧ Strengthen organizational leadership

1. Introduction

- ❖ CBM/CMM Development and Utilization Plan
- ❖ On Jun, 2006, NEA of NDRC issued 11th Five-Year Plan of CBM/CMM Development and Utilization
- ❖ On Nov, 2011, NEA of NDRC issued 12th Five-Year Plan of CBM/CMM Development and Utilization



2. Incentive Policies

2.1 Monetary Support

- ❖ 3 billion RMB National Debt Fund for safety technical innovation since 2005
- ❖ 30 billion RMB allotted (till 2016), 100 billion counterpart funding
- ❖ Safety fee, as cost before tax 15-20 Yuan/t (40/t Shanxi; 60/t Huainan)
- ❖ M2M, CDM, VER, etc.



2. Incentive Policies

2.1 Monetary Support

❖ Loan 2146: Coal Mine Methane Development

❖ CMM/CBM production, capture and utilization in Jincheng

❖ 120 MW CMM PP; CMM drainage; CBM surface well development
(underground directional drilling)

- CMM PP is the largest in the world
- 182 million m³/yr CMM/CBM capture; replace 291,000 t/yr of coal
- Emission of reduction of 2.77MMT CO₂e
- Financial subsidies of RMB36.8 million /a



2. Incentive Policies

2.2 Preferential Tax

- ❖ Exempt prospecting, mining right fee, don't levy royalty tentatively till 2020
- ❖ Levy First and Return Later for VAT on CBM/CMM sale. Don't levy income-tax if return VAT spent on tech. R&D and enlarging production
- ❖ Accelerate the depreciation of special equipments



2. Incentive Policies

2.3 Finance Subsidy

(1) Power generation

- Encourage to use >500 kW unit
- Not to participate in the bidding market, not to undertake the task to peak adjust of power grid
- Refer to biomass power price with subsidy of 0.25RMB/kWh



2. Incentive Policies

2.3 Finance Subsidy

(2) Household use

- Price to be determined in negotiations
- Not to enter the city gas grid: consultation; enter grid: refer to calorific heat value compared with the NG.
- Subsidies, 0.2 RMB/m³ from Central Gvt., from Local Gvt.;

Current: 0.3RMB/m³, notice from Administrative Office of CMM, 2016



2. Incentive Policies

2.3 Finance Subsidy

(3) Additional to Central Government Fiscal Subsidy, Provincial Fiscal Subsidy Provided

- Shanxi Province and Shaanxi Province increase provincial fiscal funding subsidy of 0.1 RMB/m³.
- Hunan Province subsidize 0.15 yuan/m³ for CMM recovery, additional 0.20 yuan/m³ if the recovered CMM is utilized; New built CMM power generation plant with installed capacity of 500kW or more will get subsidy of 800,000 RMB/plant; CMM power generation plant with installed capacity of 300kW or more will get subsidy of 500,000 RMB/plant.

Coal Mine Methane Polices Comparison

Item	New	Old	Change
Prospecting Mining Right	Exempt till 2020	Exempt, 1st Y; half, 2nd-3rd Y; 25%, 4th-7th Y;	Improve
Royalty	Exempt	0-3%, if < 1 billion m ³ , 0%	Improve
VAT	Levy first and return later	Foreign 5%; Domestic 13% return 8%.	Improve
Income Tax	Exempt, IF Research on equipment, new tech. or process	Exempt in first 2 yrs, half following 3 yrs	Improve
Tariffs	Exempt	Exempt	Same
Depreciation	Double declining balance method or the sum of the years	> 6 yrs	Improve
Subsidies	Power: biomass 0.25/kWh Household: 0.3/m ³	Household: 0.2/m ³	Improve

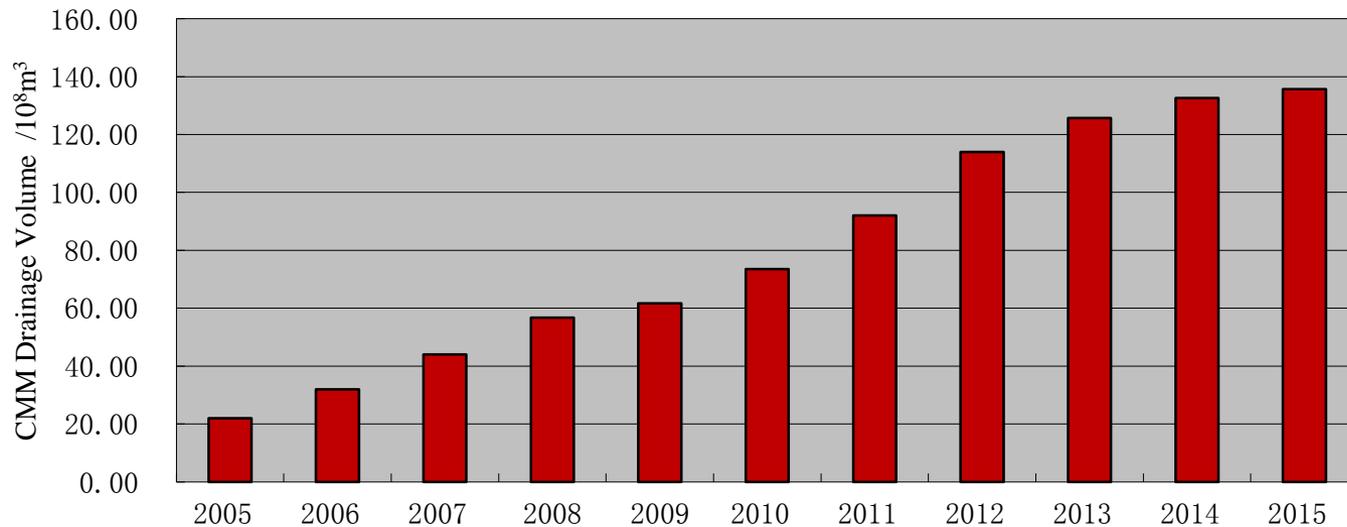
*: 1~3yr: 100Yuan/Km².a ; > 4 yr: +100/a, but Sum < 500Yuan;

3. Achievements of CMM Development in China



3.1 Rapid Growth of CMM Drainage

- In 2015, CMM drainage volume reached 13.568 Bm³
- increased by 516% compared with that in 2005, and increased by 84.6% compared with that in 2010.



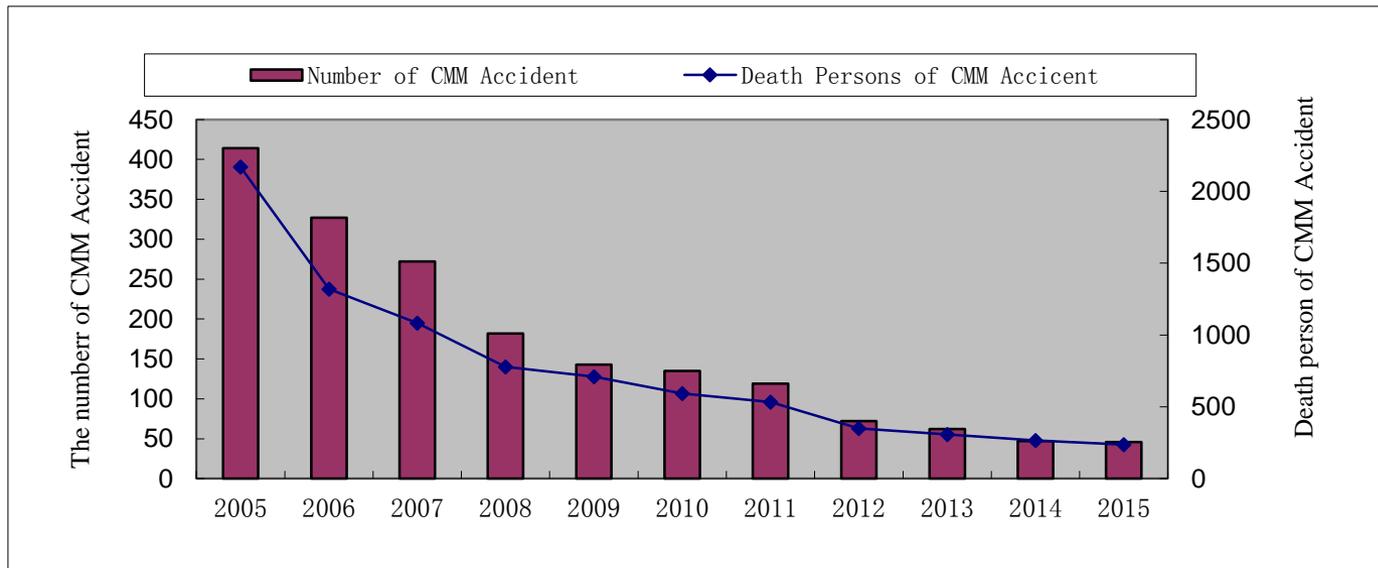
The CMM drainage volume from 2005 to 2015

3. Achievements of CMM Development in China



3.2 Decreases of CMM accidents and deaths

- In 2015, the number of gas accidents in coal mines was 46, reduction of 368 accidents compared with that in 2005, and 89 accidents compared with 2010.
- The deaths caused by these accidents was 237 in 2015, dropped by 1934 persons compared with that in 2005, and by 356 persons compared with 2010.



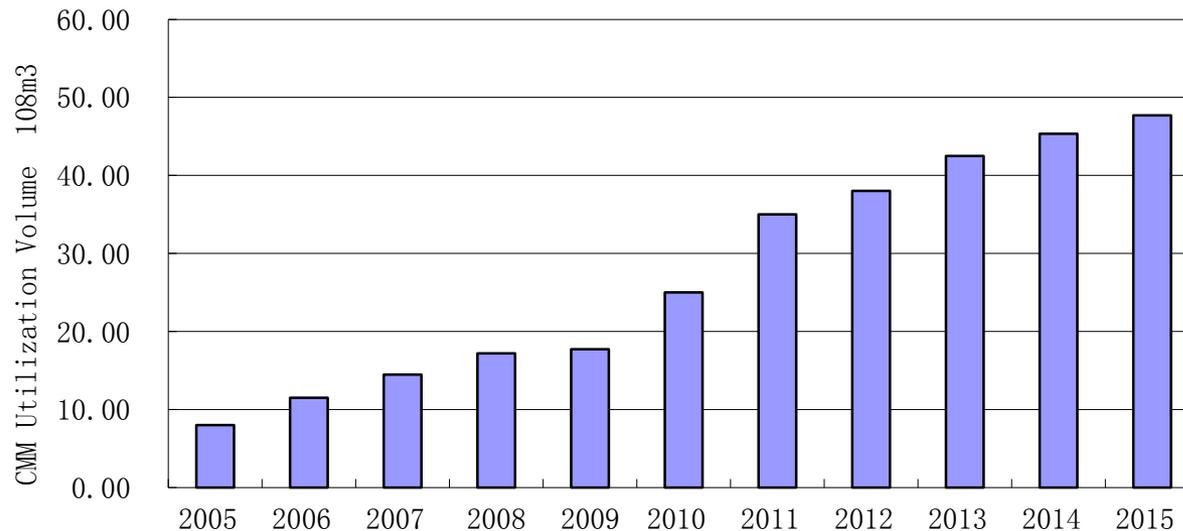
The number of gas accidents and Death person form 2005 to 2015

3. Achievements of CMM Development in China



3.3 Remarkable increase of CMM utilization

- In 2015, CMM utilization volume reached 4.77 Bm³
- In 2015, Increased by 496% compared with that in 2005. and increased by 90% compared with that in 2010.



The CMM utilization volume from 2005 to 2015

3. Achievements of CMM Development in China



3.4 CMM different utilization methods

- By the end of 2015, total installed capacity of CMM power generation in China are over **2800 MW**.



CMM for Civil Use



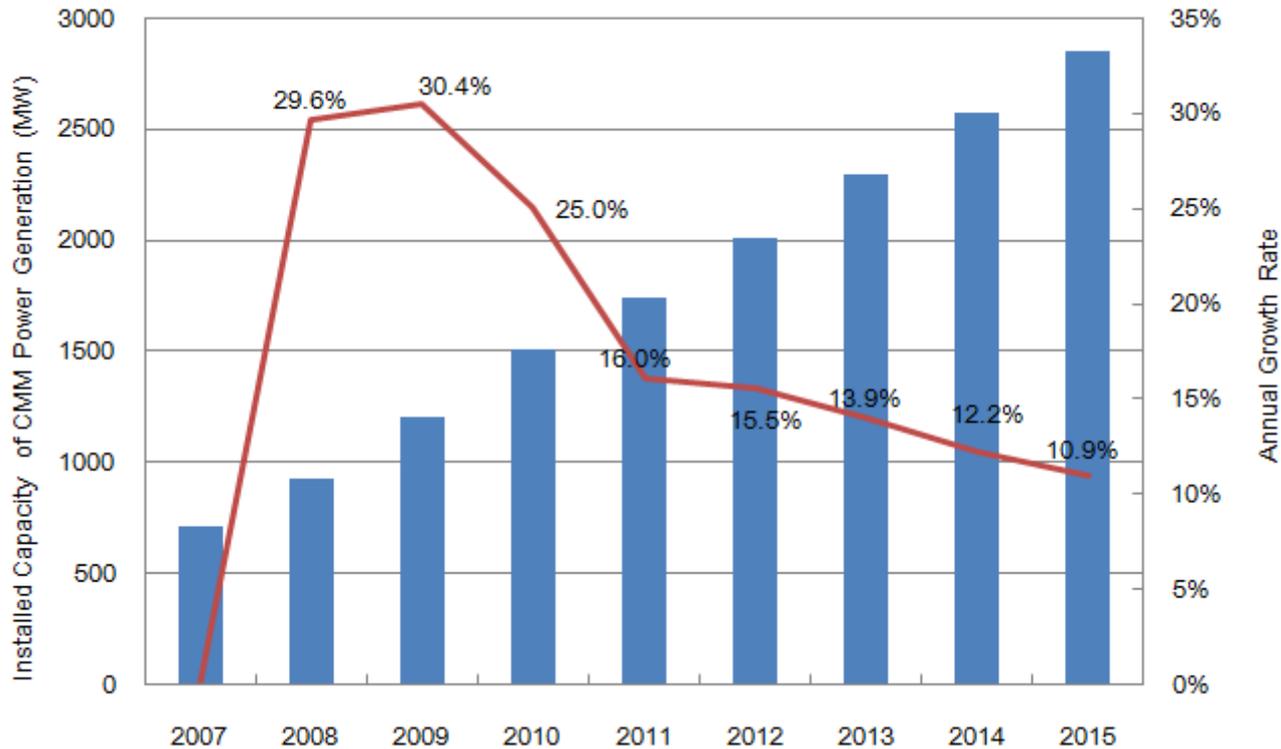
Concentration and purification technology of LCMM

3. Achievements of CMM Development in China



3.5 CMM Power Generation

Installation growth rapidly at early stage, but by the effect of the low CER price, the installation of CMM power generation growth rate become slowly.



4. Experiences sharing from China

4.1 Inter-governmental organization plays a strong role

4.2 Strong comprehensive incentive policies must be applied

4.3 Finance Support is critical to projects

4.4 Advanced technologies are needed for different geological conditions

2016 The 16th International Symposium and Exhibition on CBM/CMM in China

July 27-29, 2016, Jincheng, Shanxi, China



Featured: Field Trip & Exhibition



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