Developing Chinese Unconventional Gas Assets

Presentation to dbAccess China Conference 2014
Resources Statement & Disclaimer

Resource Statement
The statements of resources in this Release have been independently determined to Society of Petroleum Engineers (SPE) Petroleum Resource Management Systems (PRMS) standards by internationally recognized oil and gas consultants RISC (Announced 17 October 2013) using probabilistic estimation methods. These statements were not prepared to comply with the China Petroleum Reserves Office (PRO-2005) standards or the U.S. Securities and Exchange Commission regulations and have not been verified by SGE’s PSC partners CNPC and CUCBM. EMV is the probability weighted net present value (NPV), including the range of project NPVs and the risk of the project not progressing. Project NPV10 is based on a mid-case wellhead gas price of $US8.79/Mscf and lifting costs (opex+capex) of ~ US$1.3/Mscf for mid-case Reserves, Contingent & Prospective Resources. All resource figures quoted are unrisked mid-case unless otherwise noted. Sino Gas’ attributable net Reserves & Resources assumes PSC partner back-in upon ODP approval, CBM Energy’s option to acquire an interest of 5.25% in the Linxing PSC (by paying 7.5% of back costs) is exercised, and MIE fulfil funding obligations under the strategic partnership agreement. No material changes have occurred in the assumptions and subsequent work program exploration and appraisal results have been in line with expectations.

Information on the Resources in this release is based on an independent evaluation conducted by RISC Operations Pty Ltd (RISC), a leading independent petroleum advisory firm. The evaluation was carried out by RISC under the supervision of Mr Peter Stephenson, RISC Partner, in accordance with the SPE-PRMS guidelines. Mr Stephenson has a M.Eng in Petroleum Engineering and 30 years of experience in the oil and gas industry. RISC consents to the inclusion of this information in this release.

Disclaimer
Certain statements included in this announcement constitute forward looking information. This information is based upon a number of estimates and assumptions made by the Company in light of its experience, current conditions and expectations of future developments, as well as other factors that the Company believes are appropriate in the circumstances. While these estimates and assumptions are considered reasonable, they are inherently subject to business, economic, competitive, political and social uncertainties and contingencies.

Many factors could cause the Company’s actual results to differ materially from those expressed or implied in any forward-looking information provided by the Company, or on behalf of, the Company. Such factors include, among other things, risks relating to additional funding requirements, gas prices, exploration, acquisition, development and operating risks, competition, production risks, regulatory restrictions, including environmental regulation and liability and potential title disputes. Forward-looking information is no guarantee of future performance and, accordingly, investors are cautioned not to put undue reliance on forward-looking information due to the inherent uncertainty therein. Forward-looking information is made as at the date of this announcement and the Company disclaims any intent or obligation to update publicly such forward-looking information, whether as a result of new information, future events or results or otherwise.
Energy – fundamental to China’s future growth

Current

- Annual domestic natural gas production: Up from c.1 tcf\(^1\) in 2000 to 3.7 tcf in 2011
- To keep up with domestic demand China became a net importer of natural gas in 2007
- In 2012 China imported around 1.2tcf of gas natural gas (net)

Future

- Continued urbanization, modernization and industrial growth will fuel further demand
- Chinese Government expected to continue to promote domestic production (conventional and unconventional) as well as diversifying import sources (including international pipelines and LNG)
- Chinese gas demand expected to grow at 5% per year, tripling by 2035\(^2\)
- Five-year shale development plan projected unconventional gas production could reach 2 to 3.5tcf per year by 2020\(^3\)
- China’s total gas production is expected to be over 10tcf by 2035, with unconventional gas accounting for the majority of this amount\(^4\)

Note 1. 1 Tcf equals approximately 28.32 billion cubic meters (Bcm) 2. Energy Information Administration 3. Source: National Energy Administration 4. Centre for European Security Strategies
China’s Natural Gas Production and Consumption

Global Natural Gas Demand

Source: IEA World Energy Outlook 2011
China’s Ministry of Land and Resources (MOLAR) estimates China’s conventional reserves are 2.46 tcm - believed to be conservative.

MOLAR estimates 15-30 tcm (500-1,000 tcf) of unconventional resources, while US EIA estimates 36.1 tcm of shale resources alone.

Official 2011 coalbed methane (CBM) reserves at 415.6 bcm - with a further 850 bcm of proven CBM reserves expected by 2015.
China's CBM reserves are located in three main regions:

- North: Ordos basin
- Southwest: Sichuan basin
- West: Junggar and Tarim basins

The majority of China's proven shale gas resources are prolific in same regions as CBM - as well as the north-east Songliao, Bohai and North China basins.

Sino Gas & Energy’s acreage sits on the eastern fringe of the Ordos Basin in Shanxi Province.
Unconventional gas resources are very abundant yet its development is still in the early stages.

- Tight gas is the most mature and has entered the large scale commercialization stage,
- Coalbed methane (CBM) is in the initial stage of commercialization, and
- Shale gas is in the initial stage of resource evaluation and technological study.

Potential challenges to accelerating development include:

- Geological and technological issues
- Growing infrastructure and markets
- Expanding service sector capabilities
- Access to land and water
- Developing regulatory environment

China is beginning to overcome these challenges and directing the future pace and location of development.
History of Unconventional Gas in China

1980’s: Creation of three national oil companies (NOCs) CNPC, Sinopec and CNOOC during the process of economic reform

1992: CNPC commenced an overall evaluation of China's CBM resources, selecting Qinshui Basin, Ordos Basin, Junggar Basin and Erlian Basin as the prospective regions

1996: China United Coalbed Methane Corporation (CUCBM) established as the sole state-owned company for developing CBM

1998: Broad-scale restructuring with CNPC (PetroChina) and Sinopec to handle entire upstream/downstream segments

2006: CBM opened to foreign investors in order to accelerate its development (Sino Gas & Energy Holdings Limited established in Beijing)

2009: MOU on Sino-American co-operation in Shale Gas development projects

2009 – 2011: CNPC, Sinopec and other Chinese companies sign agreements for co-operative development of shale gas in China with Royal Dutch Shell, ConocoPhillips, BP, ExxonMobil and other international companies

2011 – 2013: NDRC have approved four CRRs and two Overall Development Plans (ODP), with others in various stages of approval. Sino Gas submitted its first CRR in August 2013.
Access to markets, government reforms, higher gas prices and advances in technology have made it possible to commercially develop CBM in China.

CBM development has benefited from:

- the involvement of increasing number of foreign players;
- lower capital requirements;
- the technological entry barriers in comparison to shale gas exploration and production is low;
- long life reserves, low decline rates and good production rates;
- large areas to explore, including bypassed opportunities; and
- advancing technology that can bring success in plays that failed earlier.
According to recent EIA estimates, China holds the largest shale gas reserves in the world.

Special research projects focusing on shale gas exploration and indigenous development technologies established by the Government.

US$1bn per year investment planned over the next 5 years if current exploration and appraisal proves successful.

Low cost access to water in key basins is an issue.
China’s 12th Five Year Plan

- China’s National Energy Administration (“NEA”) officially released its 12th Five Year Plan for Development and Utilization of Coal-bed Methane on 31 December 2011:
  - China’s 12th Five Year Plan focuses on the development of two commercial bases in Qinshui Basin and Ordos Basin
  - Stipulates accelerated development along the eastern fringe of the Ordos Basin
  - By 2015 the plan targets production capacity of CBM in the Qinshui Basin and Eastern Ordos Basin to reach 16 billion cubic metres

- NDRC is targeting natural gas consumption to make up 8% of total primary energy consumption by 2015 vs. 3.7% in 2010

- Natural gas consumption growth expected to outstrip domestic supply growth

- China’s Central Government State Council is decentralising the regulation of production sharing contracts under foreign cooperation - expected to streamline the regulatory approval processes
China’s clean energy future starting now

- 12th Five Year Plan aims for a 17% reduction in carbon dioxide emissions by 2015, signaling promotion of clean energy
- China will implement small pollution particle PM2.5 standards by 2016
- Central government pushing towards utilisation of gas to replace high carbon emitting coal
- Government policy prioritizes gas exploration and production over coal mining mineral rights
- Chinese Provinces, such as Shanxi are preparing for a gas-fired future with major infrastructure projects
Beijing’s implements Clean Air Action Plan:

- Shut down all coal-fired boilers by the end of 2015 in central districts

- All four of Beijing’s existing coal-fired power plants which now account for 40% of Beijing’s total coal consumption will be shut down by 2014

- Gas-fired plants with advanced environmental protection technologies being promoted by the Beijing Environmental Protection Bureau

- Restrict the amount of coal consumption to within 10 million tons by the end of 2017 (13 million ton reduction from 2012 level)
The National Development and Reform Commission ("NDRC") published a new gas pricing mechanism in December 2011.

The pricing formula is ~90% of the weighted average of imported fuel oil (60%) and imported LPG (40%) prices, with an adjustment for heating value and VAT.

Currently being trialed in Guandong and Guangxi provinces resulting in gas prices of approximately $14/Mscf - with further plans to roll-out nationally.

NDRC announced in July 2013, that city gate gas prices for non-residential users will increase by an average of 15% across the country to approximately ~US$9/Mscf.
Infrastructure and Market Access Reforms

- China has around 54,000 km of natural gas pipelines, with Government plans to double this by 2015.
- Four major gas provinces - Tarim, Sichuan, Changqing and Qinghai - produce about 80% of the nation's total natural gas.
- CNPC is the gas main pipeline operator, constructing and operating around three quarters of the natural gas pipeline network.
- Draft reform released by National Development and Reform Commission (NDRC) in August 2013 is designed to provide more open access to the state-dominated natural gas pipeline market.
- Reforms are expected to encourage an increasing number of smaller unconventional gas producers to boost output above local consumption, hence increasing overall output nationally.

Source: OECD/IEA 2012
Favorable Policies to Promote Unconventional Gas

 Favorable policies have been put in place for the development and utilization of coal-bed methane include:

• Subsidies of RMB 0.2 per cubic meter (~US$0.93/Mscf1)

• Hydrocarbon VAT ranges from 5% to 17%, with rebates available for CBM producers

• Tariffs and VAT waivers on imported equipment, instruments, machinery and accessories that are directly used for developing CBM resources

• Qualified research and development expenditure can be deducted for tax purposes at 150% of the actual expense

 In 2012, the Chinese Ministry of Finance announced a subsidy of RMB 0.4 per cubic meter (~US$1.86/Mscf1) for shale gas until 2015

Note 1. Thousand standard cubic feet
Sino Gas and Energy Holdings is proud to be playing a role in the China energy growth story

Sino Gas offers investors a rare opportunity to participate through an ASX-listed company in China’s domestic energy growth:

- **Reserves & Resources**
  A growing reserve and resource base (Gross Project 2P Reserves at 877 bcf announced 17 October 2013\(^1\)) in one of the world’s largest gas basins spread across 3,000km\(^2\)

- **Major JV Partners**
  International standard PSCs with CNPC & CUCBM (70% owned by CNOOC)

- **Equipment Availability**
  Competitive well and operating costs - US$1.30/Mscf\(^1\), extensive rig and service industry availability

- **Infrastructure & Market**
  Three major pipelines crossing the PSCs providing access to a large domestic market

- **Sales Secured**
  First Gas Sales Agreement (“GSA”) signed in June 2013 with pilot production commenced in Q4 2013

- **Attractive Pricing**
  US$7.00/Mscf under GSA for first year, expected to move in line with national pricing – circa US$10+/Mscf

- **Aggressive Work Program**
  1,935km seismic and 58 wells completed - 2014 work program being finalised

- **Upside Remaining**
  Horizontal well development and 30% acreage yet to be fully explored

\(^1\) Refer to Resources Statement on Slide 2 for full disclosure
Sino Gas & Energy Holdings Limited ("Sino Gas" ASX: SEH) is an Australian energy company focused on developing Chinese unconventional gas assets. Sino Gas holds a 49% interest in Sino Gas & Energy Limited ("SGE") through a strategic partnership completed with MIE Holdings Corporation ("MIE" SEHK: 1555) in July 2012. SGE has been established in Beijing since 2006 and is the operator of the Linxing and Sanjiaobei Production Sharing Contracts (PSCs) in the Ordos Basin, Shanxi province.

SGE’s interest in the Linxing PSC with CUCBM is 64.75% and 49% for the Sanjiaobei PSC held with PCCBM. SGE has a 100% working interest during the exploration phase of the PSC, with SGE’s PSC partners being entitled to back-in upon Overall Development Plan (ODP) approval, by contributing development and operating costs in line with their PSC interest.

The PSCs are located in the Ordos Basin and cover an area of approximately 3,000km². The Ordos Basin is the second largest onshore oil and gas producing basin in China. The region has mature field developments with an established pipeline infrastructure to major markets. Rapid economic development is being experienced in the provinces in which Sino Gas’ PSCs are located and natural gas is seen as a key component of clean energy supply in China.
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