



12 July 2018

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# RESERVES & RESOURCES, OPERATIONS AND LONE STAR SCHEME UPDATE

**Sino Gas & Energy Holdings Limited** (ASX: SEH, "Sino Gas" or the "Company") today provides an update on Reserves and Resources, operations and the proposed acquisition of Sino Gas by Lone Star, including:

- Independent Reserves and Resources estimates updated by RISC as at 30 June 2018:
  - o Gross (total project) 2P + 2C Resources decreased by 4% to 5.1 Tcf
  - Net Sino Gas 2P + 2C Resources decreased 28% to 1.1 Tcf. Net 2P Reserves decreased 56% to 256 Bcf and net 2C Resources decreased 10% to 806 Bcf
- Gross production for 1H 2018 averaged ~24 MMscf/d and Sino Gas remains on-track to deliver 2018 production guidance even though Linxing North CGS start-up has been delayed to Q4 2018
- Sanjiaobei first ODP currently under final review with approval now expected in 2H 2018; concurrently, discussions are underway regarding PCCBM's participation, gas allocation and operational matters
- Lone Star and Sino Gas continue to work together to progress the proposed acquisition of Sino Gas by Lone Star and remain on track to meet the announced indicative timetable

# **Updated Reserves and Resources**

Further to the announcement of 31 May 2018 regarding the Scheme Implementation Agreement with a wholly-owned subsidiary of Lone Star Fund X Acquisitions, LLC (together with its affiliates, "Lone Star"), the Directors of Sino Gas appointed Grant Thornton Corporate Finance Pty Ltd ("Grant Thornton") as independent expert for the purposes of the scheme. To assist in preparing its Independent Expert Report, Grant Thornton engaged RISC Advisory Pty Ltd ("RISC") to prepare an Independent Technical Specialist Report, including an updated Reserves and Resources Report, the details of which are disclosed below.

The updated Reserves and Resources Report reflects Sino Gas' 12 June 2018 announcement regarding the 11<sup>th</sup> Modification Agreement ("MA11") to the Linxing Production Sharing Contract ("PSC"), up-to-date technical data, the first Overall Development Plans ("ODP") for Linxing and Sanjiaobei, analogous field data and the previously announced Sino Gas Development Plan, prepared in conjunction with J-Energy Company Limited ("J-Energy"), a Chinese specialist technical firm with direct experience in similar neighbouring Ordos basin tight gas fields.

RISC has certified that as at 30 June 2018:

- Gross (total project) mid-case discovered Resources decreased 4% from 31 December 2017 to 5.1 trillion cubic feet ("Tcf"), comprised of gross 2P Reserves of 1.3 Tcf (-38%) and gross 2C Resources of 3.8 Tcf (+19%);
- Net Sino Gas mid-case discovered Resources decreased 28% from 31 December 2017 to 1.1 Tcf, comprised
  of net 2P Reserves of 256 billion cubic feet ("Bcf") (-56%) and net 2C Resources of 806 Bcf (-10%); and
- Net Sino Gas P50 Prospective Resources decreased 54% due to the relinquishment of acreage in Linxing East.

Reductions in Sino Gas Reserves and Resources are driven by the impact of MA11, a reduction in the expected ultimate recovery per well assumed by RISC, a revised timing to reach plateau production in line with current ODP plans and the relinquishment of ~1,000km² of land in Linxing East.

RISC has maintained Gas Initially in Place ("GIIP") estimates for the Sanjiaobei PSC and the retained Linxing PSC acreage. However, the recovery of natural gas volumes per well has decreased ~30% taking into account pilot well performance and analogous field data in the Ordos basin. RISC believes the 30% reduction in volume per well could potentially be recovered by additional infill drilling or recompletions and has transferred such volume to Contingent Resources until the technical and economic feasibility of recovering such gas has been



proven. The updated 2P RISC 30-year well type curve has an expected ultimate recovery of ~2.0 Bcf assuming two recompletions take place over the life of the well. This recovery per well is at the upper end of the range assumed by Sino Gas in the Development Plan released in October 2017.

RISC previously assumed plateau production would be reached in 2021 and has now deferred this until 2023/2024, which is more consistent with current ODP plans.

Considering the Linxing and Sanjiaobei fields are in a proven tight gas basin and the lateral extent of resources are well delineated with technical data, RISC ascribes a 90% probability to successfully producing the 108 Bcf of net Sino Gas 2C Contingent Resources that has been recognised to the expiry of the PSC. RISC's 2P+2C discovered resources produced prior to PSC expiry are in line with Sino Gas' previously announced Development Plan, taking into account the impact of MA11 and the delay in reaching plateau production.

Sino Gas has an option to acquire 7.5% of its Joint Venture company, Sino Gas & Energy Limited's ("SGE"), participating interest in the Linxing PSC by reimbursing SGE for 7.5% of historical costs and expenses ("Linxing Option"). Reserves and Resources assume full State Owned Enterprise ("SOE") PSC partner participation and the exercise of the Linxing Option reducing SGE's participating interest in Linxing, however the Reserves and Resources associated with the Linxing Option are not allocated to Sino Gas. RISC estimates that Sino Gas would book an additional 28 Bcf of 2P Reserves and 87 Bcf of 2C Resources on exercising the Option.

Please refer to page 4 for further details regarding Sino Gas' Reserves and Resources Assessment.

## 2018 Work Program Update<sup>2</sup>

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Twenty-five wells were drilled in the first half of 2018, including three horizontal wells which are expected to be tested in Q4 2018. SGE remains on track to complete its planned 2018 drilling program of 40 – 50 wells.

As a result of land leasing delays, site preparation for the new Linxing North Central Gathering Station ("CGS") was completed in June 2018, leading to the deferral of commissioning of the CGS to Q4 2018. The Linxing North CGS will increase gross total installed processing capacity in both Linxing and Sanjiaobei PSCs to 42 Million standard cubic feet per day ("MMscf/d"). A total of 21 production wells (including five horizontal wells) have been drilled in the Linxing North area, the majority of which are expected to be tied into the new CGS in Q4 2018.

Gross production for the first half of 2018 averaged ~24 MMscf/d including the impact of scheduled maintenance at the two CGSs. Sino Gas remains on track to deliver 2018 production guidance of a gross average rate of 22 - 27 MMscf/d and gross year-end exit rate of 38 - 42 MMscf/d, as strong production in the first half of the year is expected to mitigate the impact of the Linxing North CGS commissioning delay.

## Sanjiaobei First ODP update

While the first Sanjiaobei ODP has been approved in principle, it is currently undergoing final review with approval now expected in 2H 2018.

# **Commercial discussions with PCCBM**

In anticipation of the first Sanjiaobei ODP approval, confidential preliminary discussions have commenced between SGE and SOE partner PCCBM pertaining to the timing and extent of PCCBM's participation in the project up to its 51% interest, operational matters related to the development stage of the project, allocation of pilot production above the previously announced 3 Bcf prior to ODP approval<sup>3</sup> and the extension of the

<sup>&</sup>lt;sup>1</sup> 3.675% interest assuming full CUCBM participation.

<sup>&</sup>lt;sup>2</sup> Gross production numbers are gross total field for both Sanjiaobei and Linxing PSCs, please refer to page 5 for details of Sino Gas participating interests.

<sup>&</sup>lt;sup>3</sup> As disclosed in the Company's 25 July 2016 announcement, pilot production up to 3 Bcf prior to ODP is shared between PCCBM and SGE in accordance with PSC terms. Pilot production at Sanjiaobei is currently expected to exceed 3 Bcf in Q3 2018.



exploration period that expires on 31 August 2018. Discussions are currently expected to be concluded around the time of the first ODP approval.

#### **SGE Accounts Receivable**

Following the conclusion of the Linxing development phase cost allocation principles discussions with SOE partner China United Coalbed Methane ("CUCBM"), SGE has received ~85% of the accounts receivable announced as overdue on 29 March 2018. The process of monthly collection of accounts receivable is ongoing.

## Update on Proposed Acquisition of Sino Gas by Lone Star

As announced on 31 May 2018, Sino Gas has entered into a Scheme Implementation Agreement with Lone Star, under which Lone Star proposes to acquire 100% of the issued share capital of Sino Gas by way of a scheme of arrangement, for a cash consideration of A\$0.25 per share ("Scheme").

Lone Star and Sino Gas continue to work together to progress the proposed acquisition of Sino Gas by Lone Star and remain on track to meet the announced indicative timetable.

The Scheme Booklet containing information relating to the Scheme, the Independent Expert Report, and the reasons for the Board's recommendation, is expected to be sent to Sino Gas shareholders in late July/early August. Sino Gas shareholders will be provided with an opportunity to vote on the Scheme at a Sino Gas shareholder meeting, which is expected to be held in early September 2018. Details of the meeting will be disclosed in the Scheme Booklet.

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# **Details of Sino Gas' Reserves & Resources Assessment**

RISC has completed its independent Reserves and Resources assessment to Society of Petroleum Engineers ("SPE") Petroleum Resource Management System ("PRMS") standards using probabilistic and deterministic estimation methods.

## Sino Gas' Attributable Net Reserves & Resources

Sino Gas	1P Reserves <sup>1</sup> (Bcf)	2P Reserves <sup>1</sup> (Bcf)	3P Reserves <sup>1</sup> (Bcf)	2C Contingent Resources (Bcf)	P50 Prospective Resources <sup>2</sup> (Bcf)
30 June 2018	176	256	346	806	376
31 December 2017	384	578	776	899	821
100% Gross Total Proj	ect Reserves & Re	esources			
30 June 2018	874	1,323	1,788	3,789	2,002

Note 1. RISC has separately assessed the Reserves and Resources for each of the PSCs by probabilistic methods and added the resultant estimates arithmetically. RISC and Sino Gas caution that the aggregate 1P estimate may be conservative and the aggregate 3P estimate may be optimistic as a result of the portfolio effects of arithmetic addition.

Note 2. Prospective resources are the estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) related to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons

Note 3: For the purposes of determining SGE's Reserves and Resources, RISC assumes (a) full SOE partner back in (i.e. CUCBM and PCCBM take up their respective 51% participating interests in the Linxing and Sanjiaobei PSCs); (b) that the Linxing Option has been exercised resulting in SGE having a 45.325% participating interest in the Linxing PSC, however the impact of the Linxing Option has not been included in Sino Gas's Reserves and Resources. Sino Gas owns 49% of the issued capital of SGE and CNEML owns the remaining 51%.

#### **Resource Statement**

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The statements of resources in this Release have been independently determined to SPE PRMS standards by internationally recognized oil and gas consultants RISC Advisory Pty Ltd ("RISC"). 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 PCCBM and CUCBM. Reserves are based on a mid-case gas price of US\$7.01/Mscf inflated at 2.5% per year and average lifting costs (opex+capex) inclusive of inflation of 2.5% per year of ~US\$1.8/Mscf for 2P Reserves. All resource figures quoted are unrisked mid-case unless otherwise noted. Sino Gas' attributable net Reserves & Resources assumes full PSC partner back-in upon ODP approval and the reduction of SGE's contractor share in Linxing due to the exercise of the Linxing Option, however Sino's Gas is not credited with the acquired Reserve and Resources. Reserves & Resources are net of 4% in-field fuel for field compression and field operations. Reference point is defined to be at the field gate.

Information on the Resources in this release is based on an independent evaluation conducted by 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 is a member of the SPE and MIChemE and is a qualified petroleum reserves and resources evaluator (QPPRE) as defined by ASX listing rules. Mr. Stephenson consents to the form and context in which the estimated reserves and resources and the supporting information are presented in this announcement.

RISC is an independent advisory firm that evaluates resources and projects in the oil and gas industry. RISC offers the highest level of technical, commercial and strategic advice to clients around the world. RISC services include the preparation of independent reports for listed companies in accordance with regulatory requirements. RISC is independent with respect to Sino Gas in accordance with the Valmin Code, ASX listing rules and ASIC requirements.



# **About Sino Gas & Energy Holdings Limited**

Sino Gas & Energy Holdings Limited ("Sino Gas" ASX: SEH) is an Australian energy company focused on developing natural gas assets in China. Sino Gas holds a 49% interest in Sino Gas & Energy Limited ("SGE"), the operator of the Linxing and Sanjiaobei Production Sharing Contracts ("PSCs") in the Ordos Basin, China's largest gas producing basin. SGE has been established in Beijing since 2005 and is jointly owned with China New Energy Mining Limited ("CNEML") via a strategic partnership.

The Linxing PSC is held with CUCBM (a CNOOC wholly-owned subsidiary) and the Sanjiaobei PSC is held with PCCBM (a PetroChina wholly-owned subsidiary). SGE's PSC partners are entitled to participate up to their 51%-PSC participating interest by contributing their future share of costs.

Sino Gas also holds an option to acquire 7.5% of SGE's participating interest in the Linxing PSC by contributing 7.5% of historical back costs to SGE (3.675% interest assuming full CUCBM participation).

The PSCs cover an area of approximately 2,000km<sup>2</sup> in the Ordos basin in Shanxi, a rapidly developing province. The region has mature field developments with an established pipeline infrastructure to major markets. Natural gas is a key component of clean energy supply in China, with the 13<sup>th</sup> Five-Year Plan identifying the Ordos basin as a strategic natural gas source.

Sino Gas & Energy Holdings Limited (ASX: SEH) was admitted to the Official List of ASX in 2009.

#### **Disclaimer**

Certain statements included in this release constitute forward looking information. This information is based upon a number of estimates and assumptions made on a reasonable basis 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. Whilst the Company considers all the material assumptions to be based on reasonable grounds, there is no certainty that they will prove correct or that the outcomes indicated in the announcement will be achieved. Production profile, plateau rates and other development plan parameters are indicative only and not guidance, and remain subject to any necessary regulatory approvals and applicable investment decisions.

Many factors could cause the Company's actual results to differ materially from those expressed or implied in any forward-looking information provided by, or on behalf of, the Company. Such factors include, among other things, risks relating to gas prices and currency fluctuations; exploration and estimating reserves; development, production and operating risks; competition; regulatory restrictions or failure to obtain necessary approvals and licenses; environmental harm and liability; potential issues with obtaining land access and title disputes; and additional funding requirements. Details of the Company's material business risks are set out in its annual report. Further, despite the Company having attempted to identify all material factors that may cause actual results to differ, there may be other factors that cause results not to be as anticipated, estimated or intended. 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 release (or as otherwise specified) and except as required by applicable law the Company does not undertake any obligation to update publicly such forward-looking information, whether as a result of new information, future events or results or otherwise.

Sino Gas have commissioned J-Energy Company Limited ("J-Energy") to provide technical advisory services. The review, and the production information and economic assumptions contained in this release relating to the review, for the purposes of the conceptual development plan is based on, and fairly represents, data and supporting documentation prepared by, or under the supervision of Mr. Jin Po Dong and Mr. Frank Fu. The review assumes PSC partner full back-in upon ODP approval (i.e. CUCBM and PCCBM take up their respective 51% participating interests in the Linxing and Sanjiaobei PSCs) and the exercise of Sino Gas' option to acquire an interest of 3.675% in the Linxing PSC (by paying 7.5% of historical back costs to SGE) which was purchased in April 2017. Mr. Dong is a Vice-President of J-Energy Ltd and has a Bachelor of Petroleum Engineering from South West Petroleum University of China, has over 20 years of industry experience and is a member of the SPE. Mr. Fu is the Chief Operating Officer of Sino Gas & Energy Holdings Limited, holds a Bachelor of Science degree in Geology and Exploration, and has over 25 years of relevant experience in both conventional and unconventional hydrocarbon exploration & production in China and multiple international basins and a member of the SPE. Such statements were issued with the prior written consent of Mr. Dong and Mr. Fu in the form and context in which they appear. The statements and opinions attributable to J-Energy are given in good faith and in the belief that such statements are reasonable and neither false nor misleading. J-Energy has considered and relied upon information obtained from the Company and information in the public domain. J-Energy has no pecuniary interest, other than to the extent of the professional fees receivable for their engagement, or other interest in the assets evaluated, that could reasonably be regarded as affecting their ability to give an unbiased view of these assets.