



# **Investor Presentation Deutsche Bank Access Asia 2018 Conference**

Fuelling China's Clean Energy Future

ASX **SEH** 

# **Unique and Compelling Value Proposition**



### Well positioned to unlock significant value and returns



# World scale, substantial production & cash flow targeted

- 5.3 Tcf gross project discovered resources 2.1 Tcf 2P & 3.2 Tcf 2C <sup>1</sup>
- 350 to >550 MMscf/d with significant Free Cash Flow targeted from 2020 <sup>2</sup>



# Well positioned in attractive China gas market

- Gas demand forecast to triple by 2030 <sup>3</sup>
- Ready access to infrastructure & proven gas marketing strategy



# Low cost production underpins strong margins

- One of China's lowest cost producers, targeting <\$2/Mscf<sup>4</sup>
- Forecast well-head prices US\$6.50 \$9.00+/Mscf 5



# Funding secured for development

 Existing cash, cash flow from operations and US\$100m Macquarie facility <sup>6</sup> funds development



# **ODP** process well advanced

- First ODPs submitted, in-principle approvals received, final approvals targeted in 1H 18
- Production ramp-up with ODP approvals



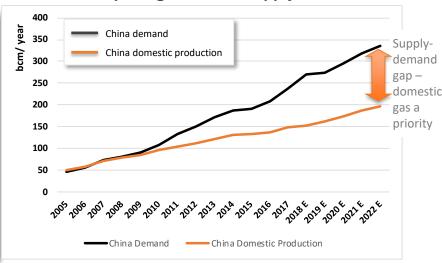
# Serving China's Large, Fast Growing Gas Needs



### Tripling of gas demand expected by 2030 <sup>1</sup>

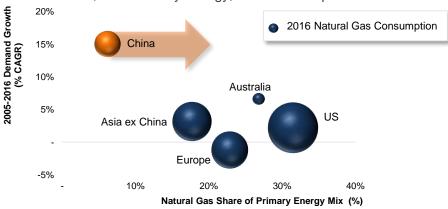
- Demand growth up 17% in Q1 2018, continuing exceptional 2017 trend<sup>2</sup>
- Long-term fundamentals remain strong
- Continued substantial coal-to-gas switching program
- Tackling air pollution a key government priority
- Robust gas prices underpinned by high marginal cost of supply
- China targeting gas 10% of the primary energy mix by 2020, 15% by 2030 <sup>1</sup>

### Demand outpacing domestic supply 3



### China vs. world natural gas demand <sup>4</sup>

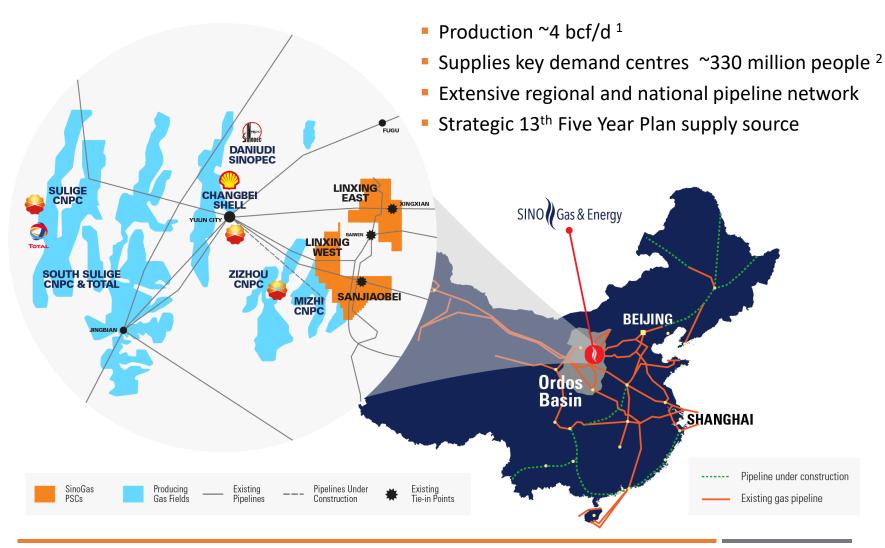
Growth, % of Primary Energy, 2016 consumption



# Sino Gas Ideally Positioned in Ordos Basin



# China's most prolific gas basin, a strategic supply source



4

# **Recent Achievements**



Record production

~25 MMscf/d Q1 18 gross average production with March average production record of ~26 MMscf/d <sup>1</sup>

In-Principle ODP approvals received from SOE partners

Approvals expected for first Linxing and Sanjiaobei ODPs 1H 2018

**Development plan released** 

 Targeting significant free cash flow from 2020, with gross production of 350 to >550 MMscf/d by 2022 2

Gas marketing strategy drives increasing prices

- Recent Sanjiaobei and Linxing gas contracts agreed at prices over US\$7.0/Mscf<sup>3</sup>
- · Multiple buyer offtake continues to deliver optimised pricing

Strong financial position

- Q1 net margins of US\$4.8/Mscf<sup>4</sup> (A\$6.1/Mscf<sup>5</sup>), up 35% q/q
- US\$100 million Macquarie debt facility finalised, securing project funding

2017 Reserves & Resources unchanged from 2016

Total Project Gross Reserves and Resources at 2.1 Tcf 2P & 3.2 Tcf 2C

Significant progress sets solid foundation for future production and cash generation

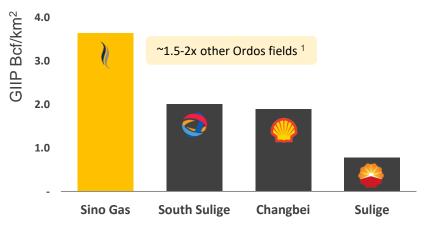
# **Analogous to Major Ordos Gas Fields**



### Stacked reservoirs result in high gas in place

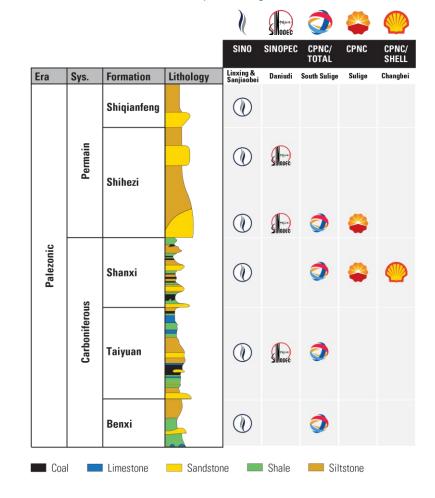
- ~1,000m of gross gas bearing section
- Low risk sandstone reservoir with proven deliverability
- Higher quality reservoir reduces fracture stimulation requirements
- Stacked reservoirs drive high ultimate recoveries per well
- Higher gas volumes per km²

### Gas Initially in Place (GIIP) density 1



### Key Producing Reservoirs 1

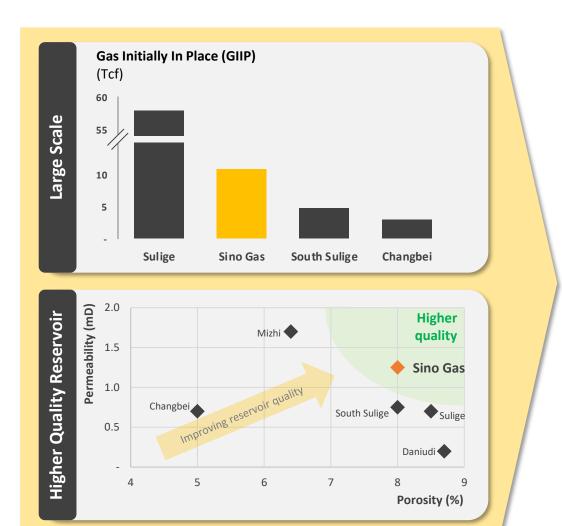
Sino Gas benefits from more producing zones

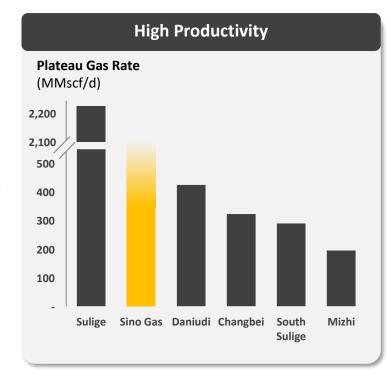




# Standout Producer in Proven Hydrocarbon Basin SINO Gas & Energy

Large scale asset with higher quality reservoir drives high productivity

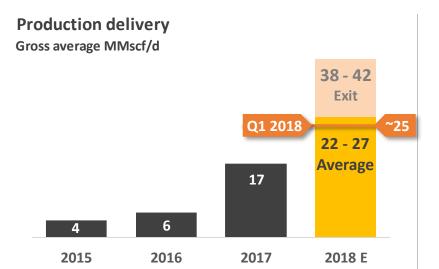




# **Continuing Production Growth**

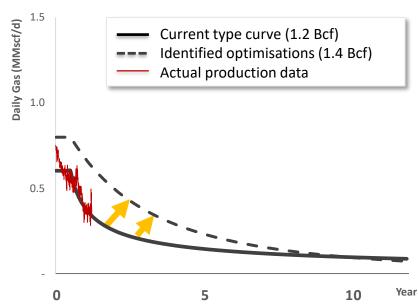


### Targeting gross YE exit rate of 38 – 42 MMscf/d, driving continuous improvement





### Technology driving improved well performance



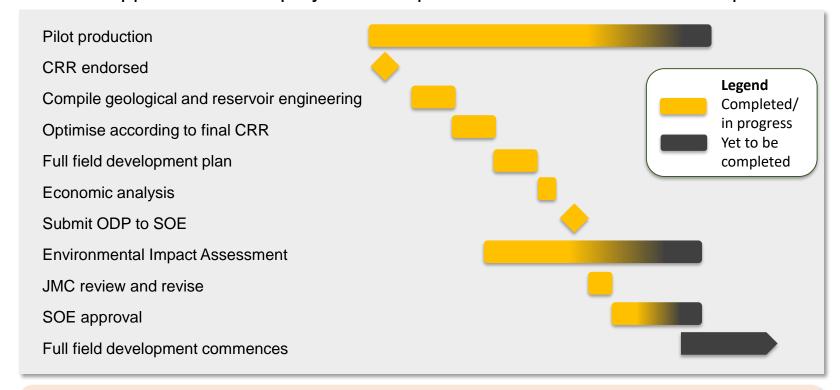
- Technology focus areas:
  - Well design and placement
  - Fracture design
  - Completion technology

# **Overall Development Plan Process**



### **ODP** approvals on track for 1H 2018

- In-principle approval received for first Linxing and Sanjiaobei ODPs
- ODP approval de-risks project and represents start of full field development



Five-Year Energy Plan supportive of Natural Gas
Shanxi government prioritising Sanjiaobei and Linxing development projects

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# **Development Plan**



### Unlocking significant value and world-class returns

**Development** 

- Phased capex minimises upfront investment
- ~1,600 wells (8/pad) in Phase 1, ~10% horizontal
- Low cost facilities with built in capacity expansion

Timing

- Anticipated first ODP approvals in 2018 for both PSCs
- Phase 1 Plateau targeted in 2022

Type
Curves <sup>1</sup>

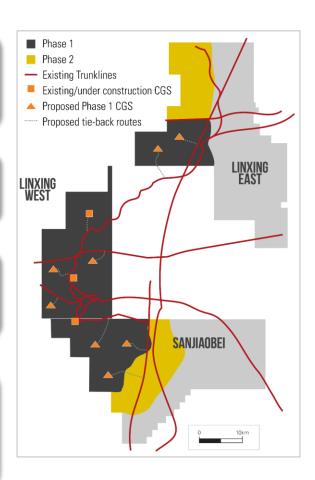
**Deviated:** Current: 1.2 Bcf EUR

Upside: >2 Bcf EUR

Horizontal: 4 Bcf EUR

Production Plateau <sup>2</sup>

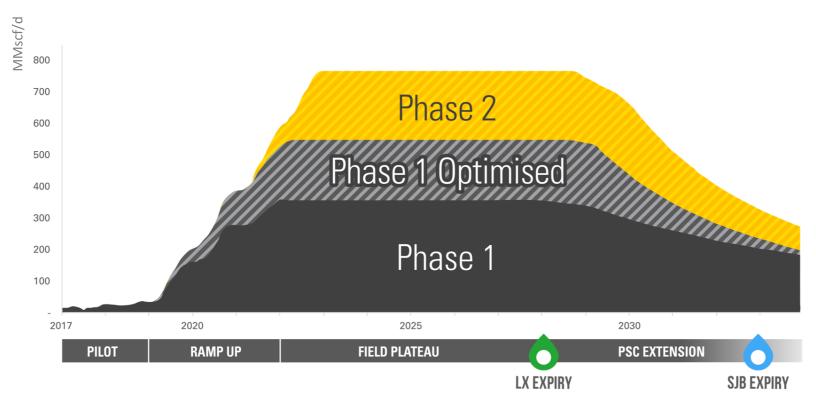
- Phase 1: 350 550 MMscf/d (~60 90 mboe/d)
- Phase 2: 550 750 MMscf/d (~90 125 mboe/d)
- Potential for upside
- Linxing ~70% of gross plateau production



# **Significant Production Growth**



~2-4% of China's domestic gas supply at plateau 1



- Phase 1 Discovered area of 1,131 km², current type curves
- Optimised Potential additional productivity from identified optimisations
- Phase 2 Low risk prospective area, 467km<sup>2</sup>

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China domestic production source IHS Markit, China's Provincial Gas Demand and National Supply Outlook, August 2017, based on 2022 domestic supply estimate

Production growth projections, based on J Energy estimates of Phase 1, Phase 1 Optimised and Phase 2; Phase 2 includes production from prospective area, unrisked. Refer to slide 10 and disclaimer statement on slides 20 & 21

<sup>3.</sup> Production growth projections are indicative only and not guidance, and remain subject to any necessary regulatory approvals and applicable investment decisions

<sup>4.</sup> All production numbers are gross field, to be read in conjunction with disclaimer statement, slides 20 & 21

# 2018 Work Program

### **Delivering the Development Plan**

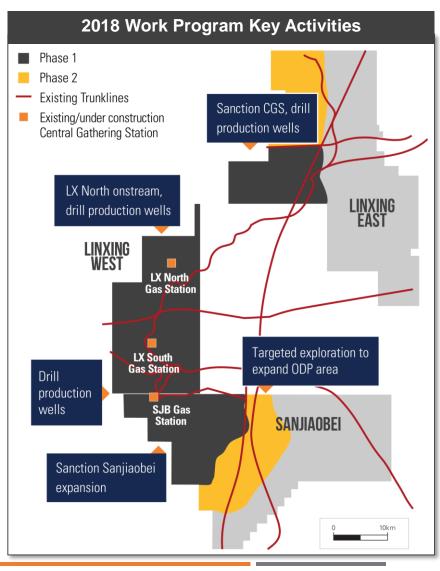


# **Strategic Priorities:**

- Secure first ODP approvals
- Maximise production and cashflow
- Position for future growth

### 2018 Core Focus:

- First ODP approvals 1H
- Commission Linxing North CGS by 3Q
- Exit 38 42 MMscf/d, avg. 22 27 MMscf/d
- Gross capital expenditure US\$60-70 million
- 40 50 wells
- 2019+ drilling preparation
- Sanction new facilities post-ODP approvals

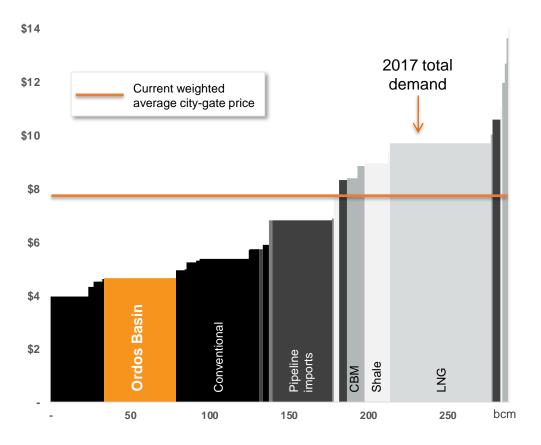


# Low Cost, Robust Prices Drive High Margins

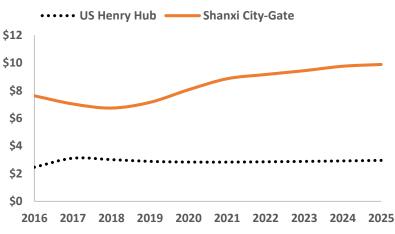


### One of the lowest cost natural gas producers in China

# Cost of Supply at City Gate, 2020E US\$/mmbtu (including transportation) <sup>1</sup>



# Shanxi City-Gate vs. US Hub Prices <sup>2</sup> US\$/mmbtu



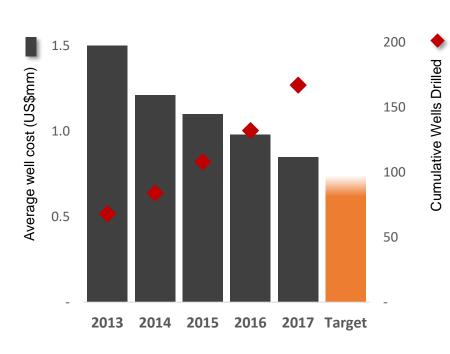
- Targeting full-cycle Opex + Capex less than US\$2/Mscf<sup>3</sup>
- Low cost drivers:
  - Simple development, limited fraccing
  - Moderate reservoir depths (~1,200-2,000m)
  - Stacked reservoirs
  - Export quality gas (~95% methane)
  - · Proximity to pipeline infrastructure

# **Strengthening Low Cost Advantage**



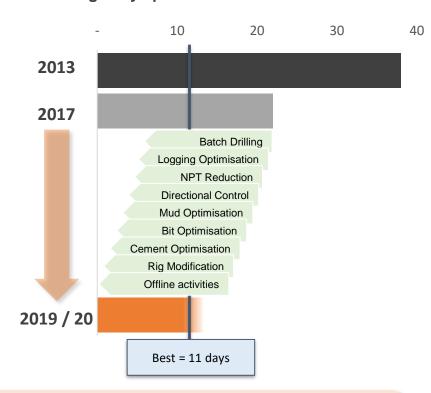
### Efficiencies identified to further drive down costs

### Deviated well costs reduced by half (2013-2017) 1



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### Average days per deviated well <sup>2</sup>



Demonstrated capability to reduce well costs, ~75% total project capex

# **Strong Cash Generation**



### Revenue growth with high margins reinvested to fund development

# Gross Revenue <sup>1</sup>: US\$ million 80 70 60 50 40 30 20 10

 Revenue and margin expansion driven by production growth and rising gas prices

2016

2017

High cash margins underpin attractive returns

2015

- Favourable PSC terms result in significant share of revenue
- Cost-reduction culture and increasing scale reduce unit opex



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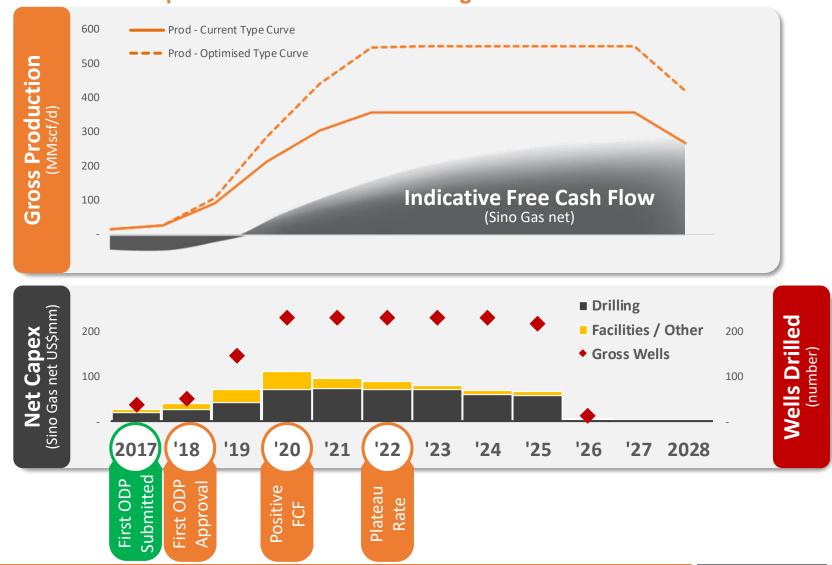
2014

2018 E

# **Targeting Significant Free Cash Flow**



Cash flow from operations reinvested to fund growth



# Expanding portfolio at low cost for future growth



### Low cost entry into prospective acreage

### **Strategic rationale:**

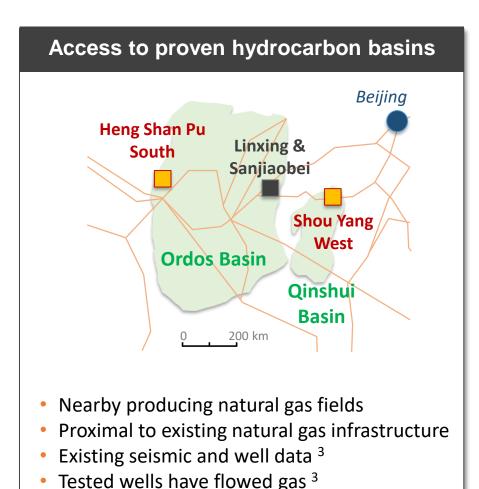
- Leverage competitive advantage to expand portfolio
- Capitalise on growing China gas market
- Deepens relationship with CUCBM
- Highly prospective areas in proven basins
- Manage risk with staged low cost investment

### **Joint Study Agreement:**

- Operator with 100% working interest
- 3 month extendable period
- Exclusive right to enter into PSCs
- Minimal financial & time commitment
  - Less than US\$100,000

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 Upstream specialist technical firm conducting studies & incurring majority of related costs<sup>2</sup>



# **2018 Priorities**



Key Objectives	<ul> <li>Secure first ODP approvals</li> <li>Maximise production and cashflow</li> <li>Position for future growth</li> </ul>
ODP Process	Linxing and Sanjiaobei first ODP approvals
Technical	<ul> <li>Drive improvements in well performance</li> <li>Deploy key technologies</li> </ul>
Operations	<ul> <li>Maintain safety record</li> <li>Target exit rate of 38-42 MMscf/d and average of 22-27 MMscf/d</li> <li>Continuous improvement and cost reductions</li> </ul>
Development	<ul> <li>Commission new Linxing North CGS</li> <li>Sanction Linxing East and Sanjiaobei CGS projects</li> <li>2019+ drilling preparation</li> </ul>
Commercial	<ul> <li>Exercise Linxing option for additional interest</li> <li>Secure additional gas sales agreements</li> <li>Conclude discussions with CUCBM on development &amp; partnership terms and cost allocation principles</li> </ul>
Financial	<ul> <li>Reinvest high margin cashflow to drive growth</li> <li>Cash generation-focused work plan</li> </ul>

# **Selected Pictures**











# Disclaimer (1 / 2)



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.

SGE's current interest in the Linxing PSC with CUCBM (a CNOOC wholly-owned subsidiary) is 70% and 49% for the Sanjiaobei PSC held with PCCBM (a PetroChina wholly-owned subsidiary). SGE has a 100% working interest during the exploration phase of the PSC, and SGE's PSC partners are entitled to participate upon Overall Development Plan ("ODP") approval up to their PSC working 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 (assuming full SOE partner participation) contributing 7.5% of historical back costs to SGE.

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 Development Plan will be achieved. Production profile, plateau rates and other conceptual 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 the Company, or on behalf of, the Company. Such factors include, among other things, risks relating to gas prices, exploration, acquisition, development and operating risks, gas production rates, the costs associated with producing these volumes, access to product markets, product prices, competition, production risks, regulatory restrictions, including environmental regulation and liability, potential title disputes and additional funding requirements. 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 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.

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This presentation should be read in conjunction with the Annual Financial Report as at 31 December 2017, the half year financial statements together with any ASX announcements made by the Company in accordance with its continuous disclosure obligations arising under the Corporations Act 2001 (Cth). This document is protected by copyright laws.

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# Disclaimer (2 / 2)

### **Reserves and Resources**



The statements of resources in this release have been determined to Society of Petroleum Engineers ("SPE") Petroleum Resource Management Systems ("PRMS") standards. The reserves and resources (as per below table) have been independently determined by internationally recognised oil and gas consultants RISC Advisory Pty Ltd ("RISC") (refer to announcement of 29 March 2018) using probabilistic and deterministic 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.

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 (i.e. CUCBM take their entitlement of 30% interest in Linxing PSC and CNPC take their entitlement to 51% in the Sanjiaobei PSC) and does not include Sino Gas' option to acquire an interest of 7.5% in the Linxing PSC from SGE (by paying 7.5% of back costs) which was purchased in April 2017 (after the assessment date), rather it assumes exercise by a third party. 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. No material changes have occurred in the material assumptions that would materially impact the reserves and resources as per the table below and subsequent work program exploration and appraisal results have been in line with expectations.

Information on the Reserves and Resources in the table below is based on an independent evaluation conducted by RISC Advisory 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. 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 has consented to the form and context in which the estimated reserves and resources and the supporting information are presented in the table below. RISC is independent with respect to Sino Gas in accordance with the Valmin Code, ASX listing rules and ASIC requirements.

### Sino Gas' Attributable Net Reserves & Resources as at 31 December 2017

SEH Attributable Net Reserves & Resources	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 (Bcf) <sup>2</sup>
31 December 2017 (Announced 29 March 2018)	384	578	776	899	821
31 December 2016 (Announced 5 March 2017)	385	579	778	899	821
Total Project 31 December 2017	1,371	2,136	2,945	3,171	3,499

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 the Linxing Option has been exercised resulting in SGE having a 64.75% interest in the Linxing PSC. SGE's interest in the Sanjiaobei PSC is 49%. Sino Gas owns 49% of the issued capital of SGE and China New Energy Mining Limited ("CNEML") owns the remaining 51%. SGE has a 100% working interest during the exploration phase of the PSCs. The impact of the Linxing Option has not been included in Sino Gas Reserves and Resources

### **Development Plan Review**

Sino Gas and Energy Holdings Limited have commissioned Beijing 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 back-in upon ODP approval (i.e. CUCBM take their entitlement of 30% interest in Linxing PSC and CNPC take their entitlement to 51% in the Sanjiaobei PSC) and the exercise of Sino Gas' option to acquire an interest of 7.5% in the Linxing PSC (by paying 7.5% of back costs) 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 Society of Petroleum Engineers ("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 Society of Petroleum Engineers ("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 our ability to give an unbiased vie

### **Non-IFRS Financial Terms**

This presentation contains terms commonly used in the oil and gas industry which are not defined by or calculated in accordance with International Financial Reporting Standards ("IFRS"), such as margin and free cashflow, which are non-IFRS measures. These terms should not be considered an alternative to, or more meaningful than the comparable measures determined in accordance with IFRS. The measures provide additional information to evaluate SGE's financial performance per unit of production and before shareholder financing costs The margin for the first quarter 2018 is calculated by dividing net revenue of US\$13.0 million less operating expenses of US\$2.4 million by total gross production of ~25 MMscf/d. The non-IFRS measures have not been subject to audit or review by Sino Gas' external auditors. Sino Gas' determination of these measures may not be comparable to that reported by other companies.

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# **Definitions and Conversions**



### **Definitions**

Bcf - billion cubic feet

**BOE** – barrels of oil equivalent

**CGS** – Central gathering station

**CNEML** – China New Energy Mining Limited – 51% owner of SGE

**CRR** – Chinese Reserve Report

**CUCBM** – China United Coal Bed Methane, subsidiary of China National Offshore Oil Company (CNOOC), PSC Partner in Linxing PSC

**EUR** – Estimated Ultimate Recovery

GIIP - Gas Initially in Place

Gross – Total Linxing and Sanjiaobei PSC's project field, refer to slide 21
 & 22 for Sino Gas net share of gross project (reference Gross Production, Gross Capital expenditure)

**GSA** – Gas Sales Agreement

**HSE** – Health, Safety and Environment

IRR - Internal Rate of Return

JMC - Joint Management Committee

Mboe/d – thousand barrel of oil equivalent per day

mm - million

MMbtu - Million British Thermal Units

MMscf/d - Million standard cubic feet per day

Mscf/d – Thousand standard cubic feet per day

NDRC – National Development and Reform Commission

**ODP** – Overall Development Plan

**PCCBM** – PetroChina CBM, subsidiary of PetroChina, PSC Partner in Sanjiaobei

**PSC** – Production sharing contract

SGE – Sino Gas Energy Limited – Sino Gas' 49% owned Joint Venture Company

**SOE** – State Owned Enterprise

Tcf - trillion cubic feet

**ToP** – Take or Pay

YE - year-end

YOY - Year on Year

### Approximate conversion factors 1

- 1 barrel of oil equivalent (boe) = 6 thousand standard cubic feet gas (Mscf)
- 1 billion cubic meter (bcm) = 35.3 billion cubic feet (bcf)
- 1 BCM/annum = 0.1 bcf/d
- 1 million ton LNG = 48 bcf gas
- 1 US dollar (US\$) = 6.3 Chinese Remnimbi (RMB)
- 1 million tonnes oil equivalent (mmtoe) = 39.2 bcf
- 1 million british thermal units (mmbtu) = 0.99 Mscf
- 1 bcf natural gas generates aprox. 112 gigawatt hours of electricity (in a modern power plant)
- 1 tonne of coal equivalent (tce)= 0.7 tonnes of oil equivalent (toe) = 27 Mscf gas

# **APPENDIX**

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# **Company Snapshot**



# Stock has outperformed key indices on strong volumes

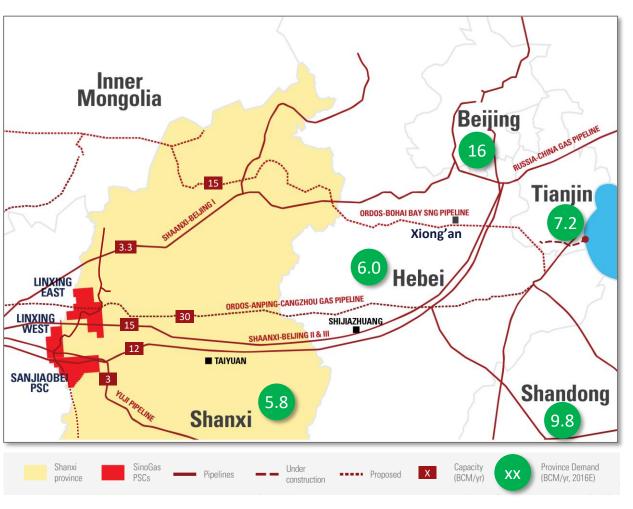
Corporate Info	ormation <sup>1</sup>	12 month share price & volume performance 1
Share Price (as of 7 May 18)	A\$0.185	A\$ m 0.2 50
Issued Shares (m)	2,117	0.18 45 0.16
Market Capitalisation (A\$m / US\$m)	392 / 295	0.14 0.12 35 30
Last 3 month daily volumes (US\$k)	756	0.1
12m total turnover (A\$m / US\$m)	147/ 114	0.08 20 0.06 15
Cash Balance (31 March 2018)	US\$22.2m	0.04 10 5
Drawn / undrawn facilities <sup>3</sup>	US\$11.5 / 88.5m	Wang mung mang sebag orig mang peng mung sebag mang shing mang
		Volume Share Price

### **2017** – Present Share Price Performance <sup>2</sup> 0.20 +61% -39% 0.05 Feb-17 Mar-17 Apr-17 May-17 Jun-17 Jul-17 Aug-17 Sep-17 Oct-17 Nov-17 Dec-17 Jan-18 Feb-18 Mar-18 May-18 ---Brent -Sino Gas — China Comparables

# Large Markets with Diverse Buyer Universe

# SINO Gas & Energy

### Regional demand expected to double by 2025 <sup>1</sup>



- Extensive and growing pipeline network
- Proximal, large and growing demand centres, with ~330 million people
- Diverse universe of gas buyers













### End users1:

