



# Investor Presentation February 2018

Fuelling China's Clean Energy Future

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# **Unique and Compelling Value Proposition**



#### Well positioned to unlock significant value and returns



#### World scale, substantial production & cash flow targeted

- 5.3 tcf gross discovered resources 2.1 tcf 2P & 3.2 tcf 2C 1
- 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 margin potential

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



#### **Funding secured for development**

 Existing cash, cash flow from operations and US\$100m Macquarie facility funds development



#### **ODP** process well advanced

- ODPs submitted, targeting approvals in 1H 2018
- Production ramp up with ODP approvals

# Serving China's Large, Fast Growing Gas Needs

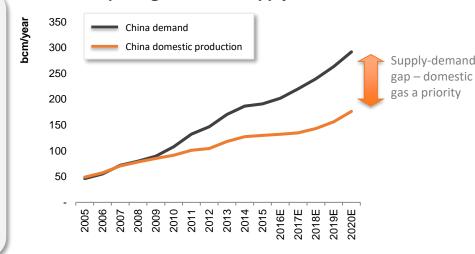


#### Tripling of gas demand expected by 2030 <sup>1</sup>

- 2017 demand surged > 15% from 2016<sup>2</sup>
- Substantial coal to gas switching program in Northern China
- Tackling air pollution a key government priority
- Robust gas prices underpinned by high marginal cost of supply
- Future demand growth expected to be strong

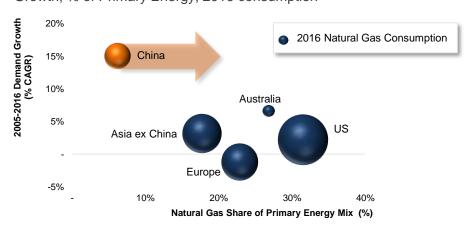


#### Demand outpacing domestic supply <sup>3</sup>



#### China vs. world natural gas demand 4

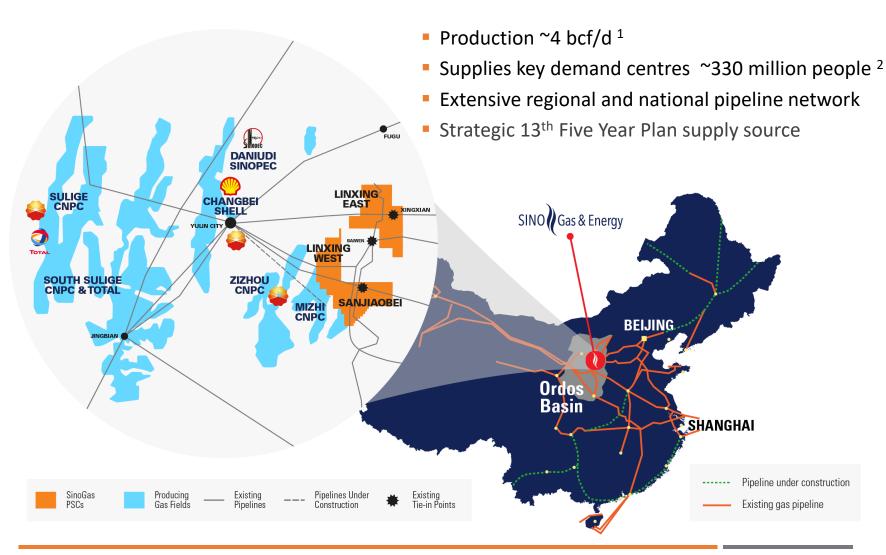
Growth, % of Primary Energy, 2016 consumption



# Sino Gas Ideally Positioned in Ordos Basin



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



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# **2017 Accomplishments**



Record Production

Evited 25 MMscf/d, av

• Exited 25 MMscf/d, averaged 17 MMscf/d near triple 2016

ODPs submitted for approval

Approval expected for both Linxing and Sanjiaobei 1H2018

Development plan released

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

Value generation

• Up to ~17% increase in Sanjiaobei gas price

Purchased option to increase Linxing working interest 5.25%<sup>3</sup> and become largest holder

**Strong financial position** 

- US\$100 million Macquarie debt facility finalised, securing project funding
- Net margins of US\$3.70/Mscf<sup>4</sup> (A\$4.80/Mscf<sup>5</sup>), >2.5x 2016

2017 share price performance & register

- Ended year up 35%, outperforming ASX 200 and China gas peers<sup>6</sup> by 28% and 66%
- Increasing institutional component ~55%, and ~35% international<sup>7</sup>

Significant progress sets solid foundation for future production and cash generation

# **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 ODP approvals in 2018 for both PSCs
- Phase 1 Plateau targeted in 2022

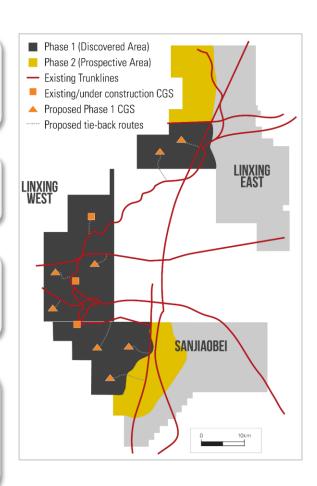
Type Curves<sup>1</sup> **Deviated:** Current: 1.2 Bcf EUR

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



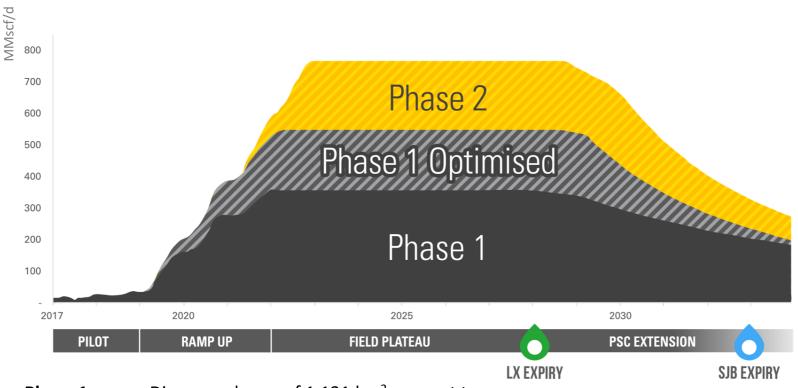
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J Energy estimate of 30 year Estimated Ultimate Recovery (EUR), refer to Type Curve slide 11 and the disclaimer statement on slide 19 for additional details.
 Refer to Development Plan dated 30 October 2017 for additional details, slides 28 & 29

# **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>
- PSC extension would capture further volumes beyond current PSC expiry discussions underway

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<sup>1.</sup> China domestic production source IHS Markit, China's Provincial Gas Demand and National Supply Outlook, August 2017, based on 2022 domestic supply estimate
2. Production growth projections, based on J Energy estimates of Phase 1, Phase 1 Optimised and Phase 2; Phase 2 includes production from prospective area,

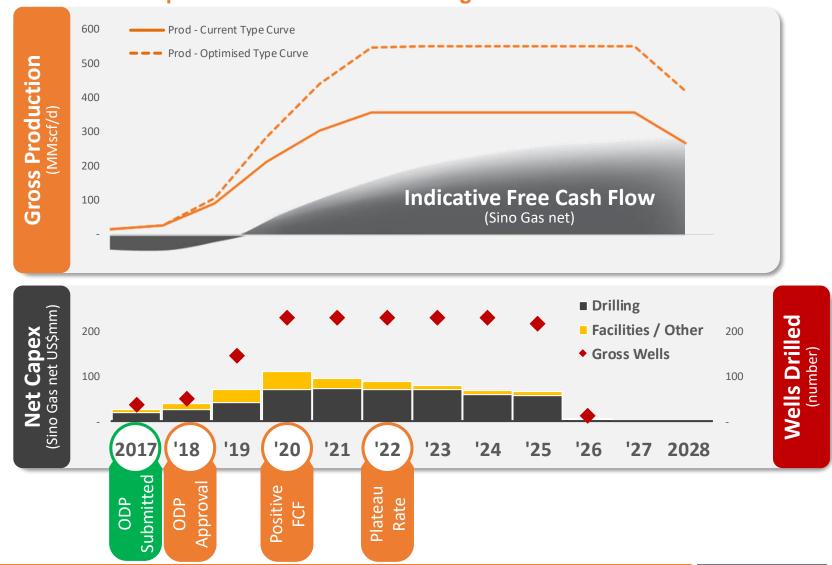
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<sup>3.</sup> Production growth projection are indicative only and not guidance, and remain subject to any necessary regulatory approvals and applicable investment decisions

# **Targeting Significant Free Cash Flow**



Cash flow from operations reinvested to fund growth



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<sup>1.</sup> Based on J Energy estimates, refer to disclaimer statement on slide 19

<sup>2.</sup> All production numbers are gross field

Development plan is indicative only and not guidance, and remains subject to any necessary regulatory approvals and applicable investment decisions

# **2018 Work Program**

#### **Delivering the Development Plan**

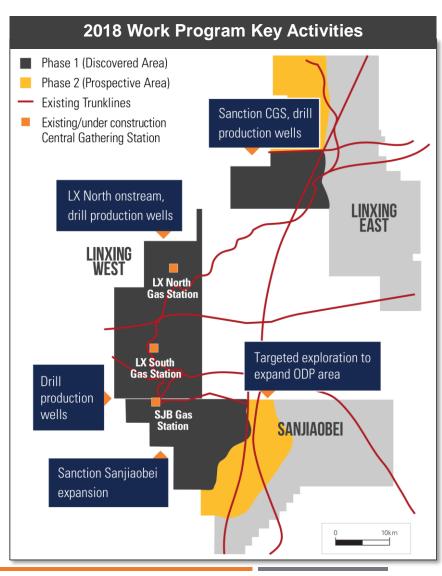


#### **Strategic Priorities:**

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

#### 2018 Core Focus:

- 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

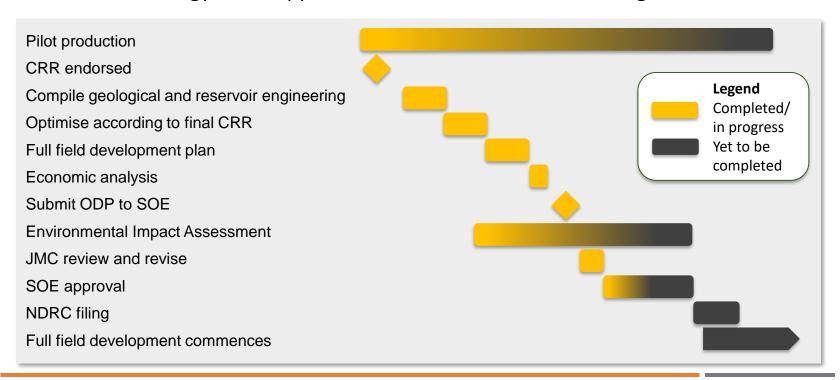


# **Overall Development Plan Process**



#### ODPs submitted and approvals on track for 1H 2018

- ODP process being streamlined with reduced approval requirements
- ODP approval fully de-risks project and represents commencement of full field development
- Process progressing in close cooperation with SOE partners
- Five Year Energy Plan supports acceleration of ODP at Linxing

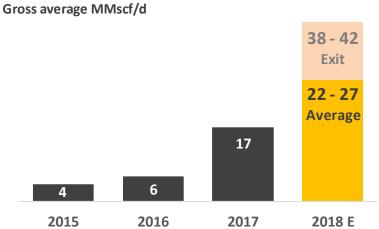


# Continuing production growth



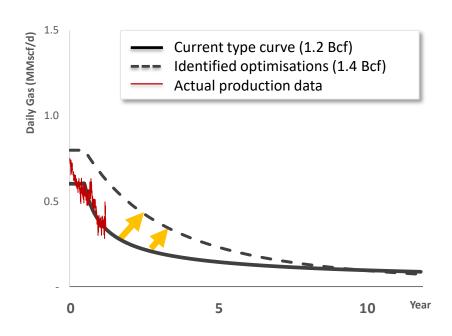
#### Targeting exit rate of 38 – 42 MMscf/d, driving continuous improvement

#### **Production delivery**





#### Technology driving improved well performance



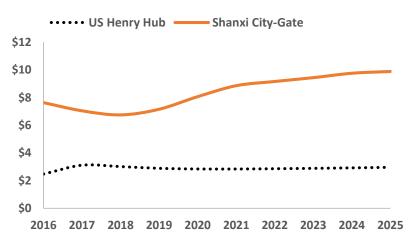
- Technology focus areas:
  - Well design and placement
  - Fracture design
  - Completion technology

# Low Cost, Robust Prices Drive High Margins



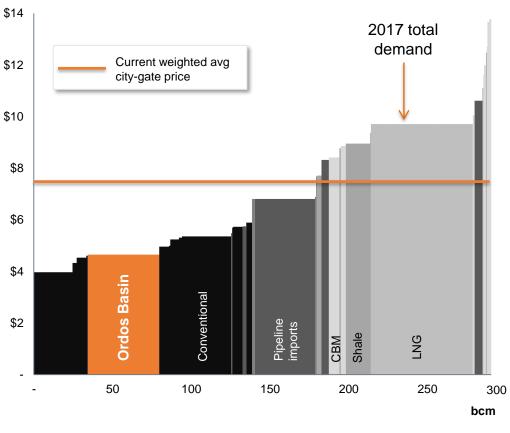
#### One of the lowest cost natural gas producers in China

# Shanxi City-Gate vs. US Hub Prices <sup>1</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

# Cost of Supply at City Gate, 2020E US\$/mmbtu (including transportation) <sup>2</sup>

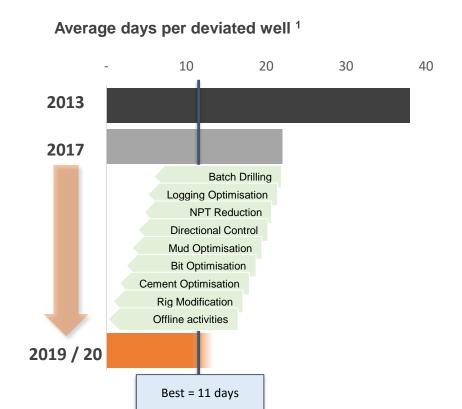


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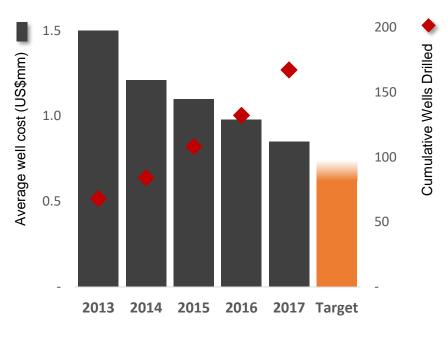
# **Strengthening Low Cost Advantage**



#### Efficiencies identified to further drive down costs



#### Deviated well costs reduced by half (2013-2017) <sup>2</sup>



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

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# Strong cash generation



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

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

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

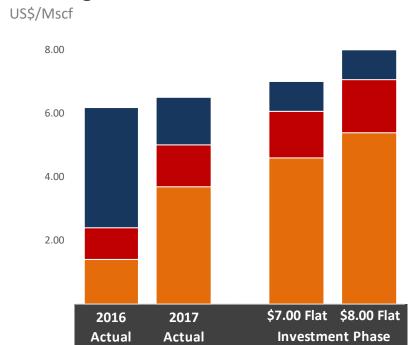
2016

High cash margins underpin attractive returns

2015

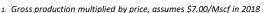
2014

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



Net Margins <sup>2</sup>:

SGE margin



2017

Unit opex

Government take

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development plan, refer to disclaimer statement slide 19.

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# Sino Gas awarded Joint Study Agreement



#### Low cost entry into prospective acreage

#### **Strategic rationale:**

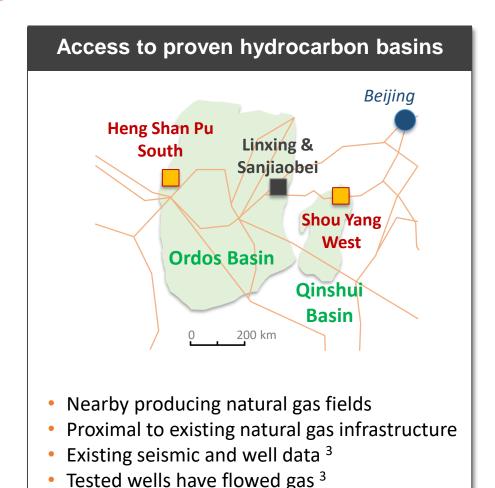
- Leverage competitive advantage to expand portfolio
- Capitalise on growing China gas market
- Deepens relationship with CUCBM
- ✓ Highly prospective areas in proven basins.
- Manage risk with staged low cost investment

#### **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>



<sup>1.</sup> Refer to Q4 2017 Quarterly Activities Report dated 29 January for further details

With option to back into any potential PSC at ODP for 5% working interest by paying historical costs

#### **2018 Priorities**



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

#### **ODP Process**

Linxing and Sanjiaobei ODP approvals

#### **Technical**

- Drive improvements in well performance
- Deploy key technologies

#### **Operations**

- Maintain safety record
- Target exit rate of 38-42 MMscf/d and average of 22-27 MMscf/d
- Continuous improvement and cost reductions

#### **Development**

- Commission new Linxing North CGS
- Sanction Linxing East and Sanjiaobei CGS projects
- 2019+ drilling preparation

#### Commercial

- Exercise Linxing option for additional interest
- Secure additional gas sales agreements

#### **Financial**

- Reinvest high margin cashflow to drive growth
- Cash generation-focused work plan

### **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 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 a 5.25% participating interest from SGE (assuming full SOE partner participation) in the Linxing PSC at ODP by contributing 7.5% of historical back costs to SGE. Upon exercise of the option, Sino Gas will hold the largest net working interest in the Linxing PSC.

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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# 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 Operations Pty Ltd (RISC) (refer to announcement of 6 March 2017) 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 5.25% in the Linxing PSC (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 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.Engin 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 2016

SEH Attributable Net Reserves & Resources	1P Reserves (Bcf)	2P Reserves (Bcf)	3P Reserves (Bcf)	2C Contingent Resources (bcf)	P50 Prospective Resources (bcf) <sup>1</sup>
31 December 2016 (Announced 6 March 2017)	385	579	778	899	821
31 December 2015 (Announced 10 March 2016)	362	552	751	814	733
Total 2016 Change (+/-%)	+5% (2P)			+10%	+12%
Gross Project 31 December 2016	1,377	2,147	2,951	3,171	3,499

Note 1. The estimated quantities of petroleum that may potentially be recovered by the application of future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration and appraisal is required to determine the existence of a significant quantity of potentially moveable hydrocarbons. The probability of development of the contingent area is estimated to be 90%, with the additional probability of geological success assigned to prospective resources estimated to be 60-80%.

#### **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 5.25% 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 view of

#### **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 the conceptual development plan. 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

**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

YOY - Year on Year

#### Approximate conversion factors <sup>1</sup>

- 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\$) = 6.37 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 Information** <sup>1</sup>

Share Price (as of 29 Jan 18) A\$0.18

Issued Shares (m) 2,114

Market Capitalisation (A\$m / US\$m) 380 / 301

Last 3 months daily volumes (US\$k) 700

12m total turnover (A\$m / US\$m) 119 / 91

Cash Balance (31 Dec 2017) US\$28m

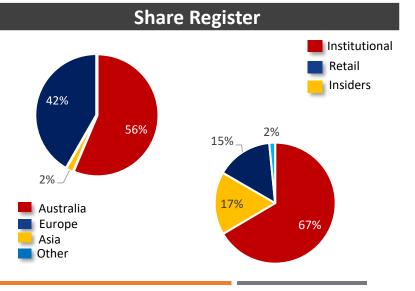
Drawn / undrawn facilities <sup>3</sup> US\$10 / 90m

#### 12 month share price & volume performance



# A\$ 0.20 0.15 0.10 0.00 J-17 F-17 M-17 A-17 M-17 J-17 J-17 A-17 S-17 O-17 N-17 D-17 J-18 Sino Gas A\$ 0.20 -40%

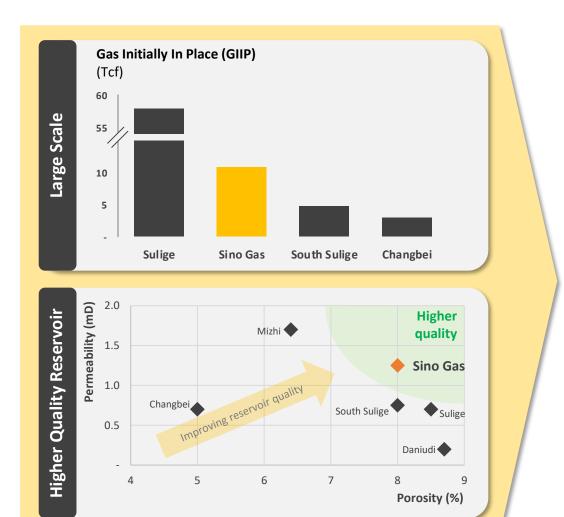
China Peers

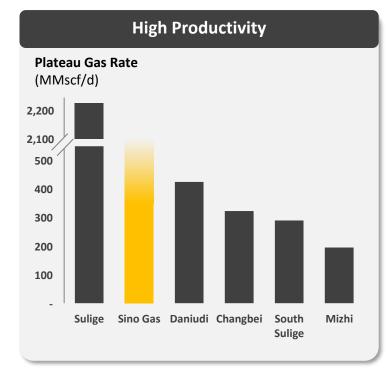


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# Standout Producer in Proven Hydrocarbon Basin SINO Gas & Energy

Large scale asset with higher quality reservoir drives high productivity





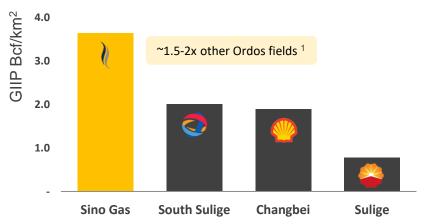
# **Analogous to Major Ordos Gas Fields**



#### Stacked reservoirs result in high gas in place

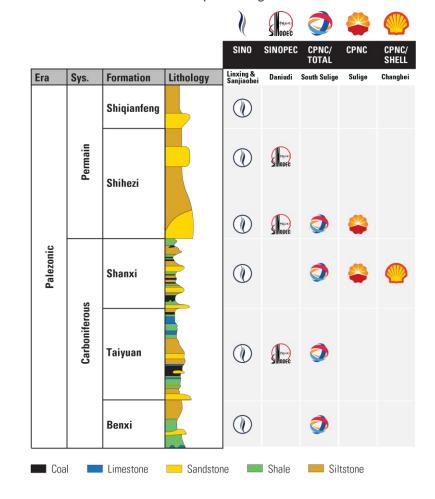
- ~1000m of gross gas bearing section
- Low risk sandstone reservoir with proven deliverability
- Higher quality reservoir reduces fracture stimulation requirements
- Stacked reservoirs drive high ultimate recoveries per well
- Higher gas volumes per km²

#### Gas Initially in Place (GIIP) density <sup>1</sup>



#### Key Producing Reservoirs <sup>1</sup>

Sino Gas benefits from more producing zones

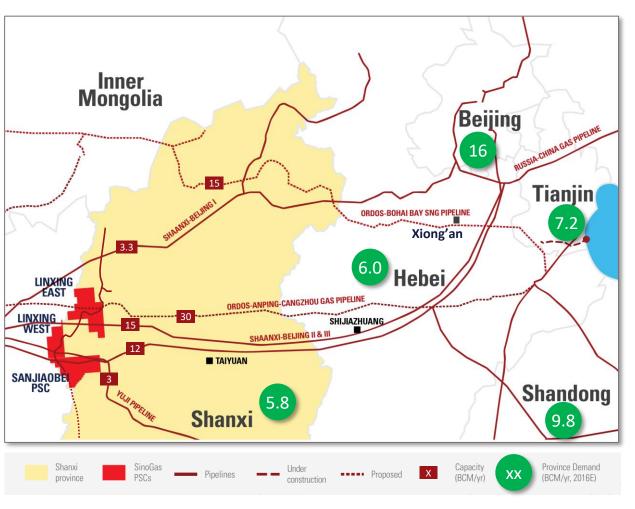




# Large Markets with Diverse Buyer Universe

# 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





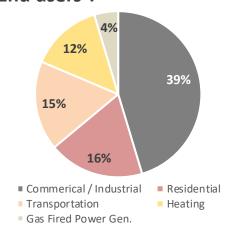






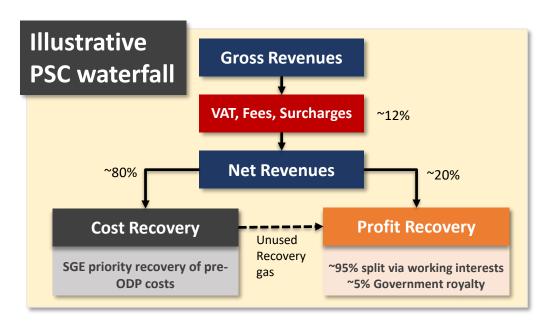


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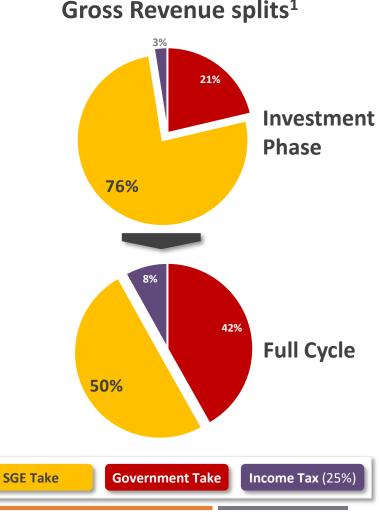


#### **PSC Mechanism**





- China attractive fiscal and regulatory regime
- Accelerated Cost Recovery provides immediate cash flow to contractor
- Supports funding of investment phase
- Full cycle take attractive by global standards



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# **Strong Strategic Partnerships**



- SGE Joint Venture Subsidiary
  - PSC Operator partnered with major
     State Owned Enterprises (SOE) with extensive field development experience

#### China New Energy Mining Ltd

- Well funded private Hong Kong company with strong China and international oil and gas expertise, strong China backing
- CUCBM Linxing PSC Partner
  - 100% owned subsidiary of CNOOC with an extensive international presence including in unconventional resources
- PetroChina Sanjiaobei PSC Partner
  - Subsidiary of CNPC, China's largest oil and gas producer

