



FY19 & 4Q19 results

Investor and analyst update

10th March 2020



Banpu has been recognized as a member of
Dow Jones Sustainability Indices (DJSI)
since 2014.



In 2019, Banpu Public Company Limited
received a rating of A (on a scale of AAA-CCC)
in the MSCI ESG Ratings assessment.

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- 2 Focus: US Gas Acquisition
- 3 Financial Summary
- 4 Energy Resources
 - Coal
 - Gas
- 5 Energy Generation
- 6 Energy Technology
- 7 Key Takeaways

2019 highlights



GAS

**Banpu becomes
Top 20 gas
producer in US**

Barnett acquisition*



ENERGY TECHNOLOGY

**Banpu NEXT launched
as group's clean
energy tech flagship**

Banpu Infinergy (BPIN) and Banpu
Renewable Energy (BRE) amalgamation



SUSTAINABILITY

**Banpu awarded
top scores for
ESG performance**

Highest ESG score for sector in DJSI
and MSCI upgrade to 'A'



POWER

**Strong growth in
thermal and renewables
portfolio**

Project development, commissioning
and acquisitions



BATTERIES

**Durapower lithium-ion
battery output
capacity to 1 GWh**

From 80 MWh per year**



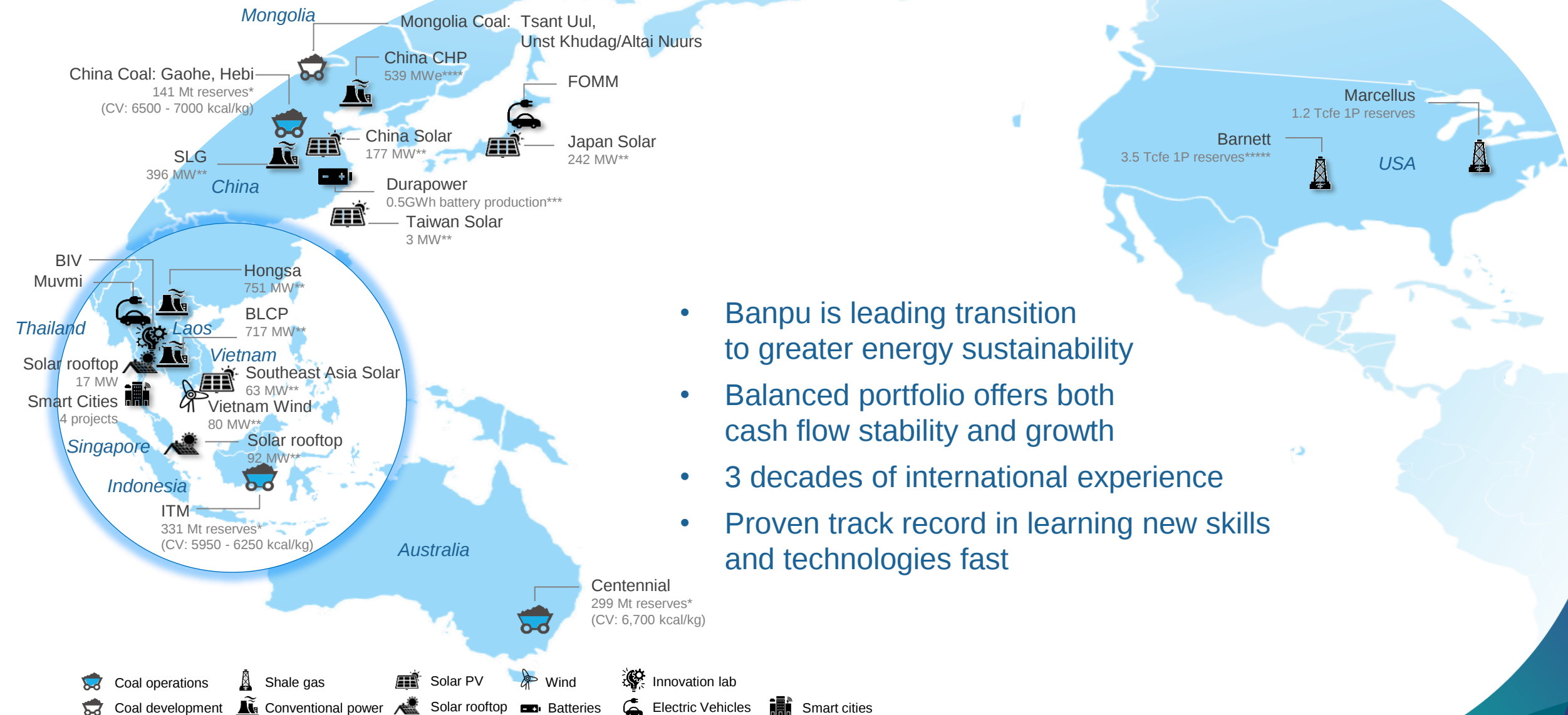
SMART PARTNERSHIPS

**Electric vehicle and
Smart City partnerships
signed in Thailand**

EV fleet management,
EV tuk tuk and solar rooftop

Note: *Banpu signed Purchase & Sale Agreement with Devon Energy Corp subject to conditions precedent, completion expected by 2Q20, **Capacity based on Durapower 100% basis

Banpu: integrated energy solutions in Asia-Pacific



- Banpu is leading transition to greater energy sustainability
- Balanced portfolio offers both cash flow stability and growth
- 3 decades of international experience
- Proven track record in learning new skills and technologies fast

Note: *Coal reserves as of December 2019, **Based on Banpu Power's equity capacity and Banpu's equity in Banpu Infinergy and Sunseap, ***Based on Banpu's 47.7% shareholding in Durapower, **** MW equivalent, ***** Deal completion expected by 2Q20

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Banpu acquires Barnett shale gas assets in Texas*

ACQUISITION METRICS		OPERATING METRICS	
\$770M Acquisition price	89% Working interest	>4,000 Producing wells	
\$0.2/Mcfe EV/1P reserves	3.5 Tcfe 1P reserves	30% NGL output**	
\$1,290/Mcfe EV/production	597 MMcfed Net production	16 years Reserve-to-production	

Figures as of effective date (end 3Q19)

Note: *Banpu signed Purchase & Sale Agreement with Devon Energy Corp in December 2019 subject to conditions precedent, completion expected by 2Q20,

**Price as of Sep-19. Final acquisition price to be paid in April 2020 will be deducted against cash flows accumulated during Sep19-Apr20,

***Natural gas liquids include ethane, propane, butane, pentane and natural gasoline

Banpu becomes a Top 20 US gas producer*

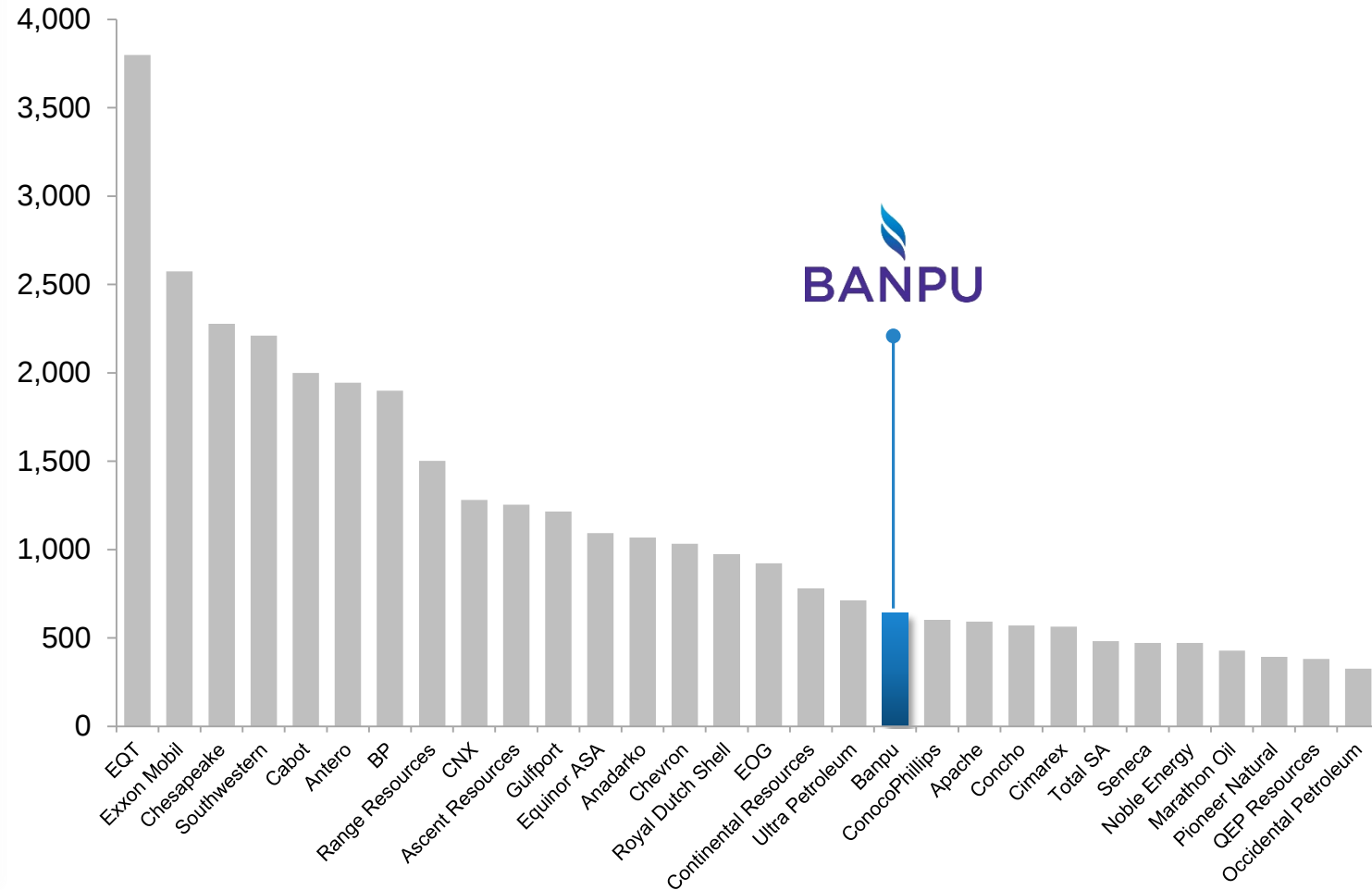
15th
in Pennsylvania

1st
in Barnett

19th
in the US

TOP 30 NATURAL GAS PRODUCERS IN THE U.S. (AVERAGE 2018)

Unit: Mmcfd



*Banpu signed Purchase & Sale Agreement with Devon Energy Corp in December 2019 subject to conditions precedent, completion expected by 2Q20

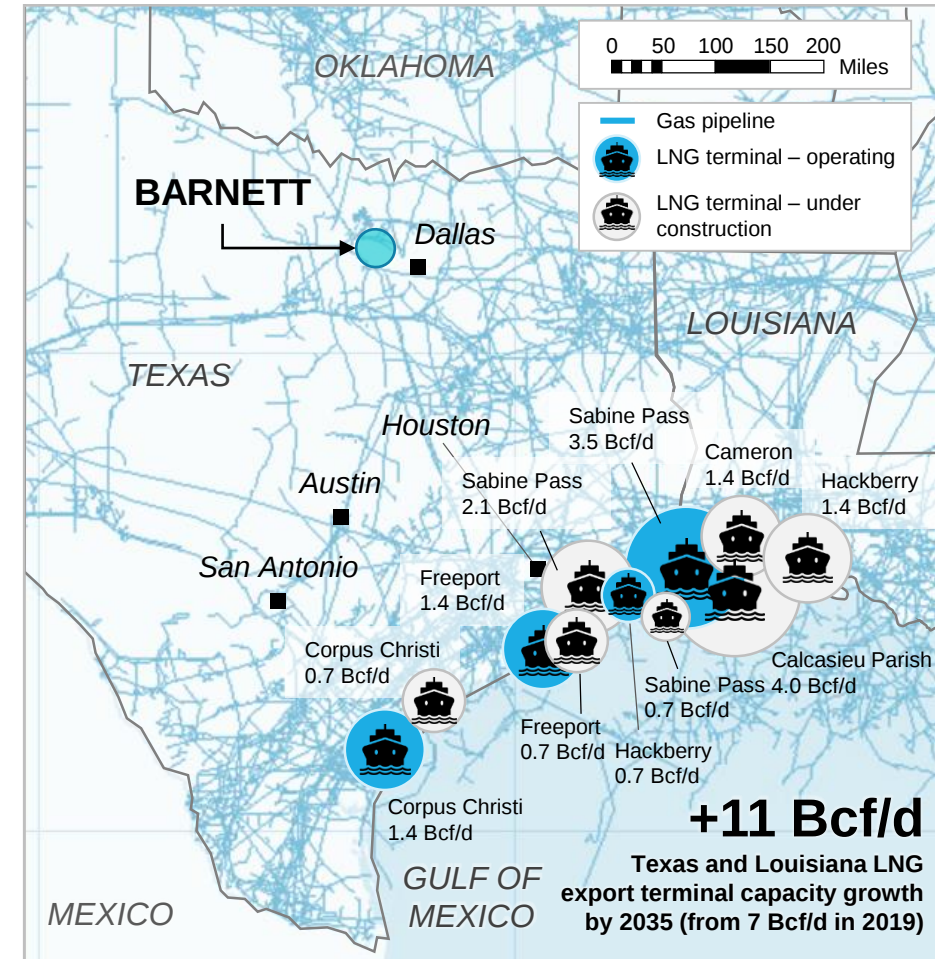
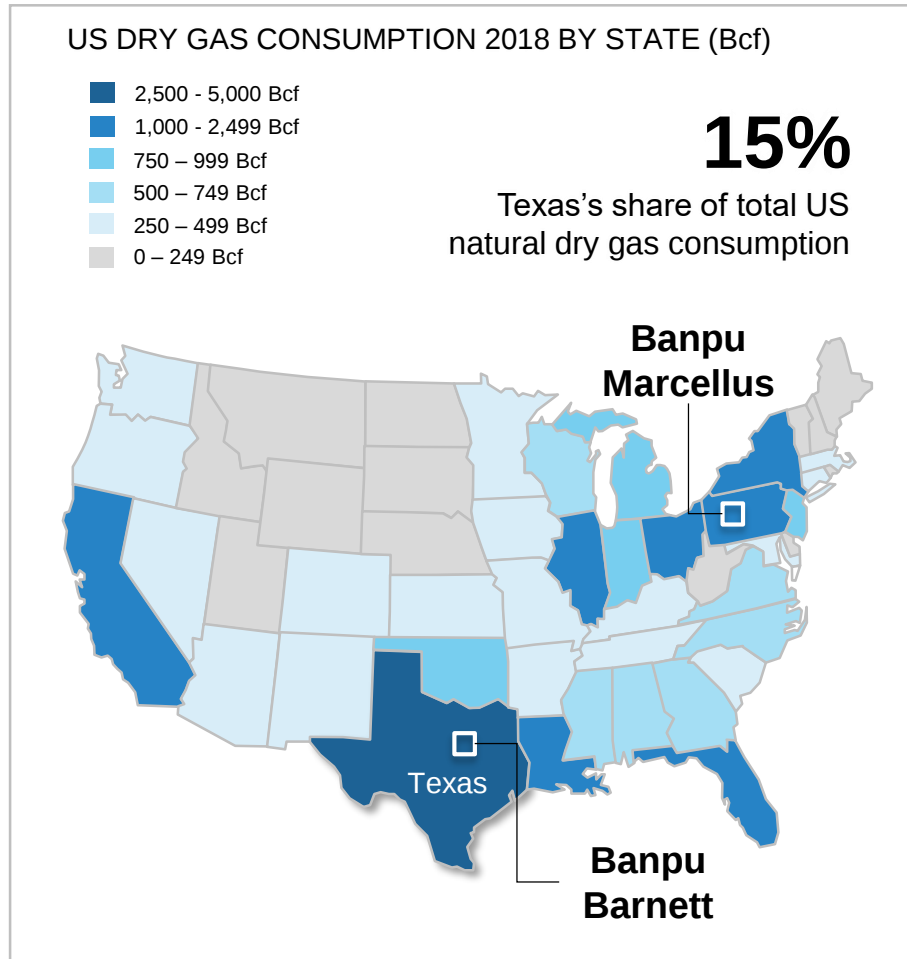
Note: Natural gas production excludes natural gas liquids and oil, Banpu production based on pro forma Barnett shale acquisition

Source : Natural Gas Supply Association

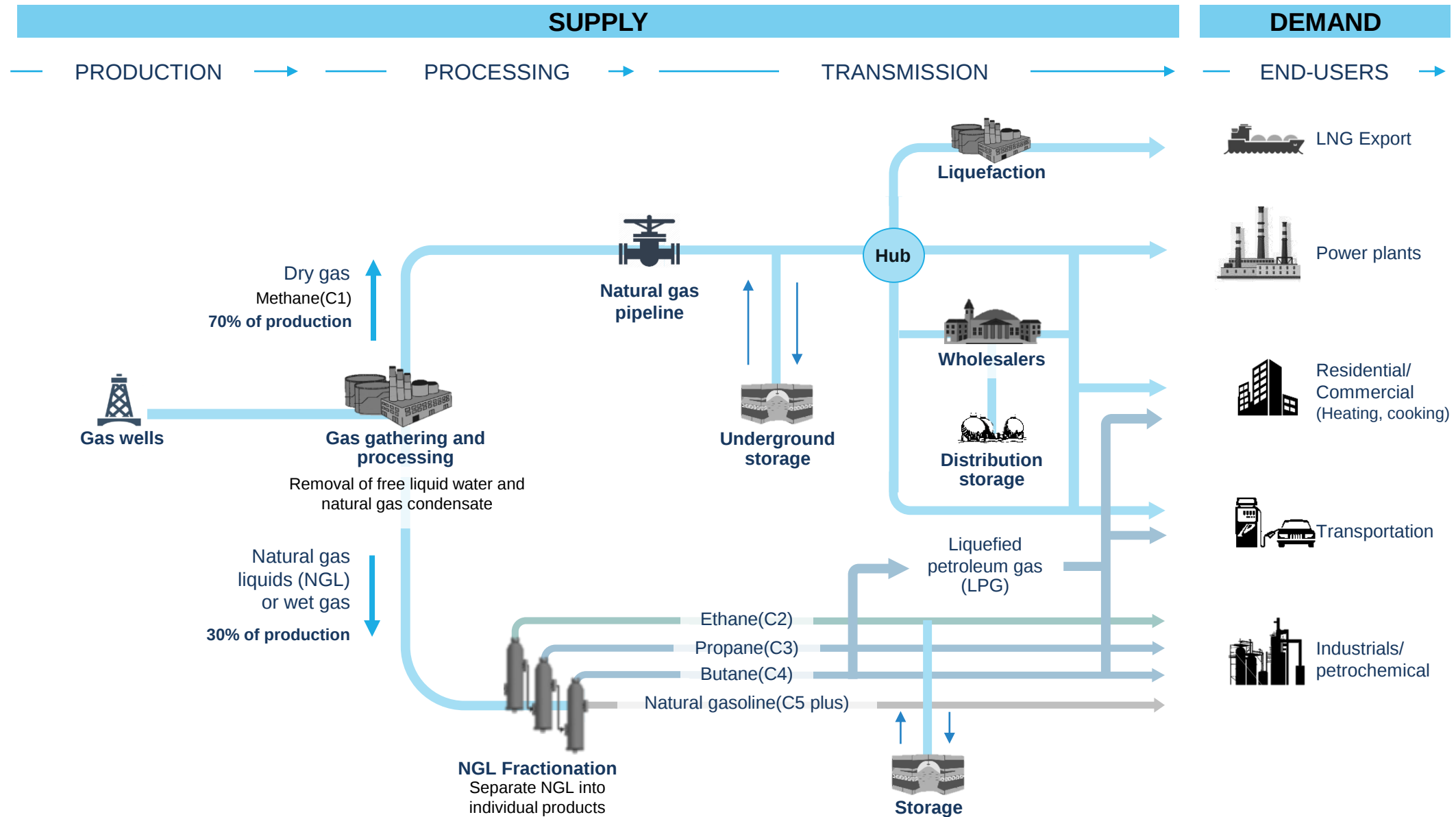
Barnett: close to domestic demand with export upside

Located in Texas, the largest gas-consuming state in the US

**~300 miles (482 km) from LNG export facilities
with well-established infrastructure**

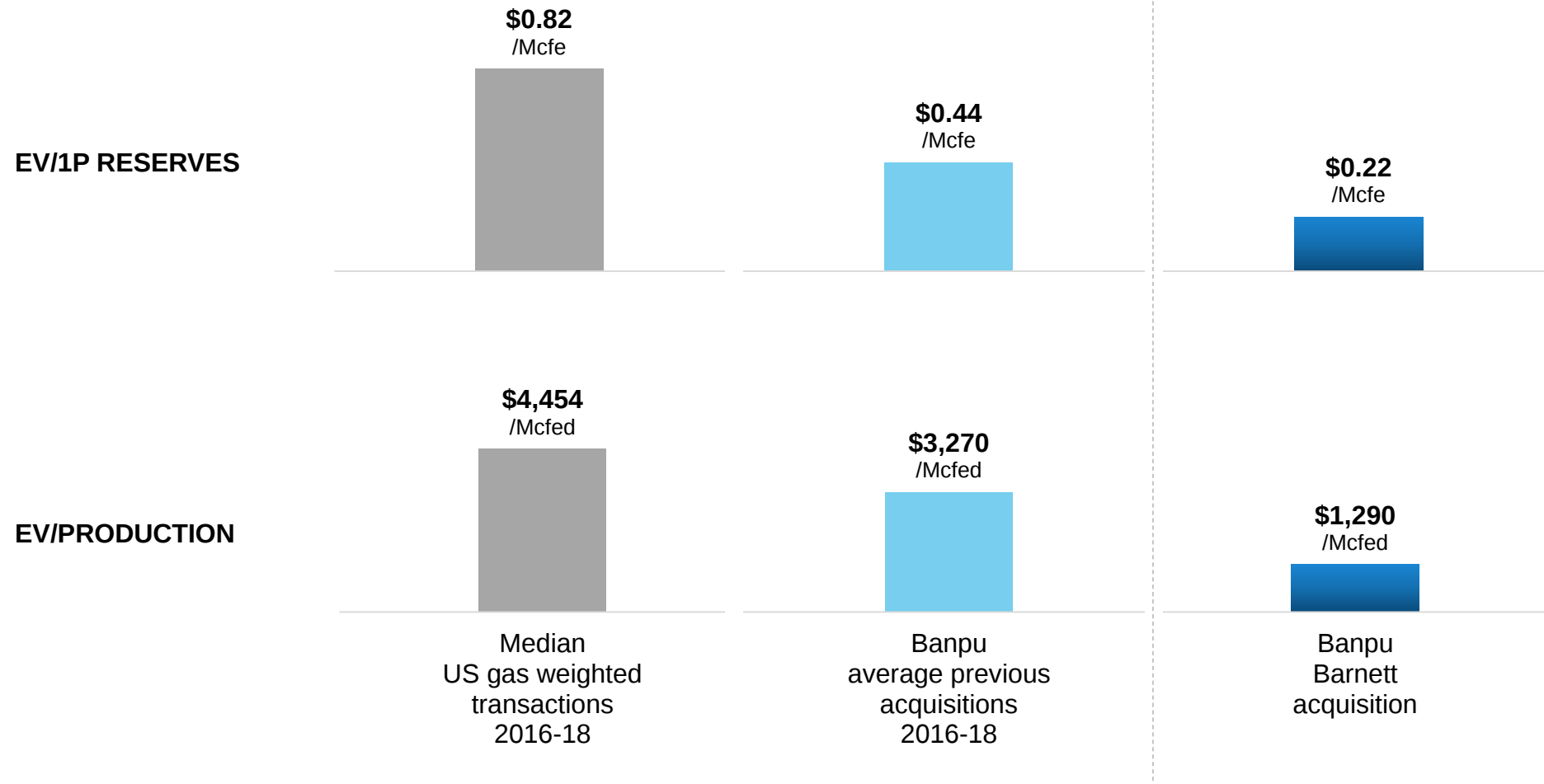


Barnett: Banpu diversifies to wet gas value chain



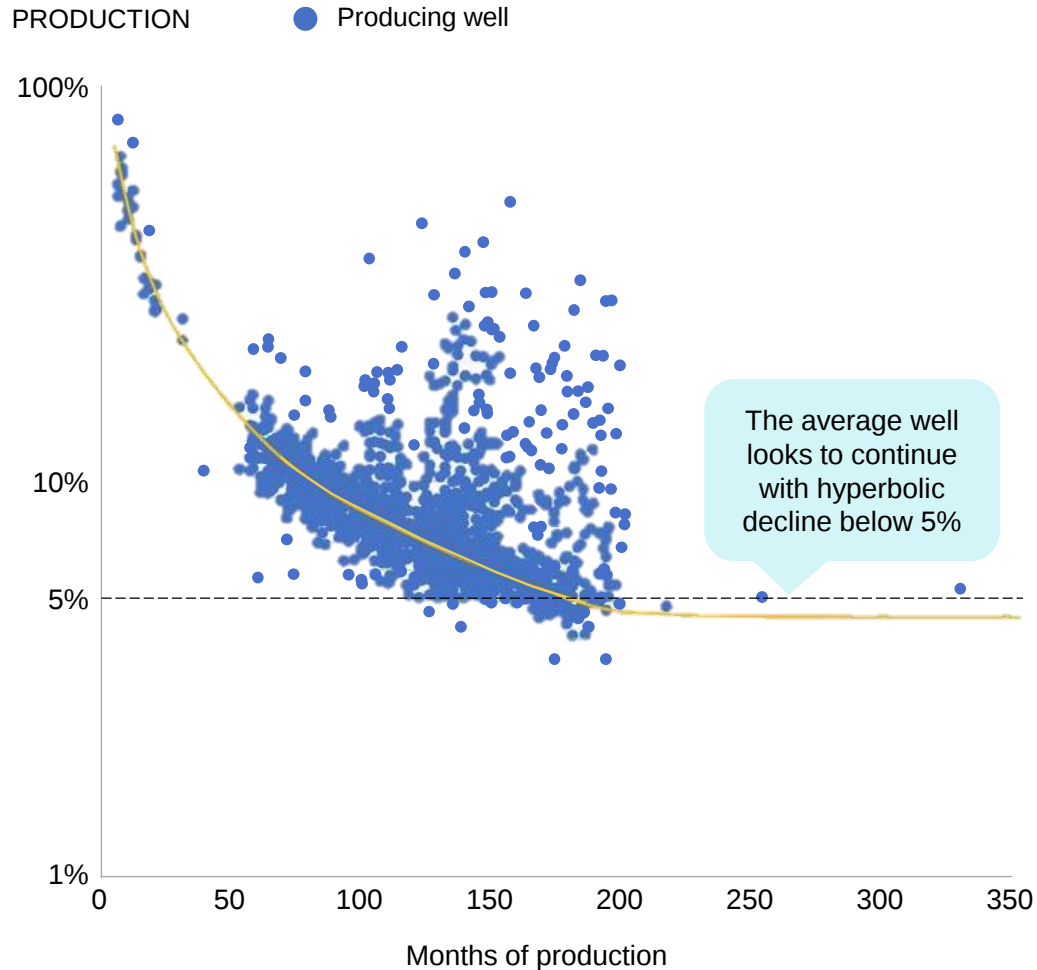
Barnett: attractive acquisition price

Acquisition timing and Banpu's reputation as buyer-of-choice led to acquisition price at lower-end of the spectrum



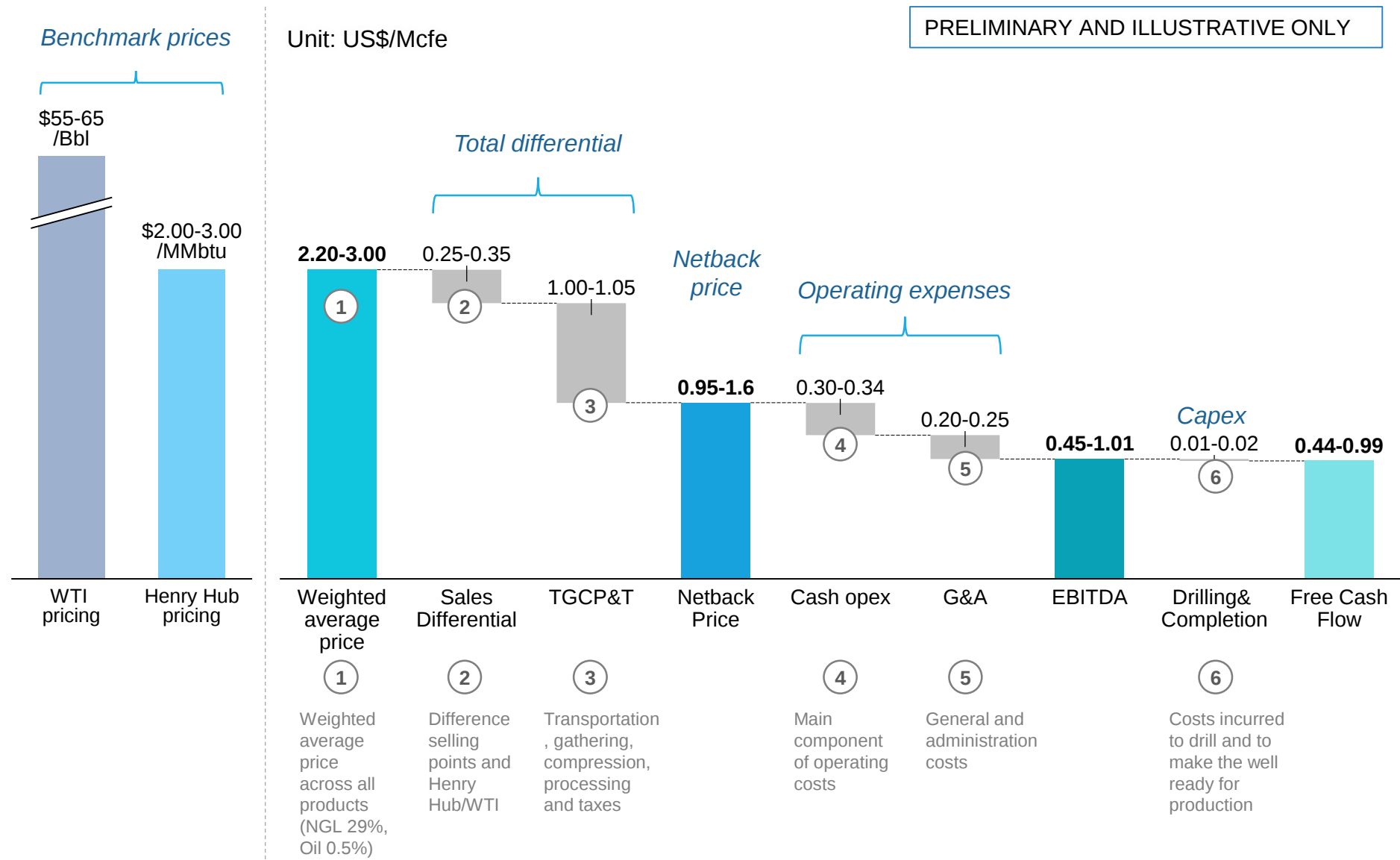
Barnett: low-risk and low capex

BARNETT'S EFFECTIVE DECLINE RATE OF EACH WELL



- Barnett requires low capex to maintain production providing high free cashflow generation even with weaker gas prices
- 20 years of reserve life
- Production has been stable with low decline rate (5%)
- Barnett has over 4,000 producing wells, most online for over a decade: lower risk, lower capex
- Predictable production over the long term offers high certainty of volume delivery

Barnett: illustrative economics

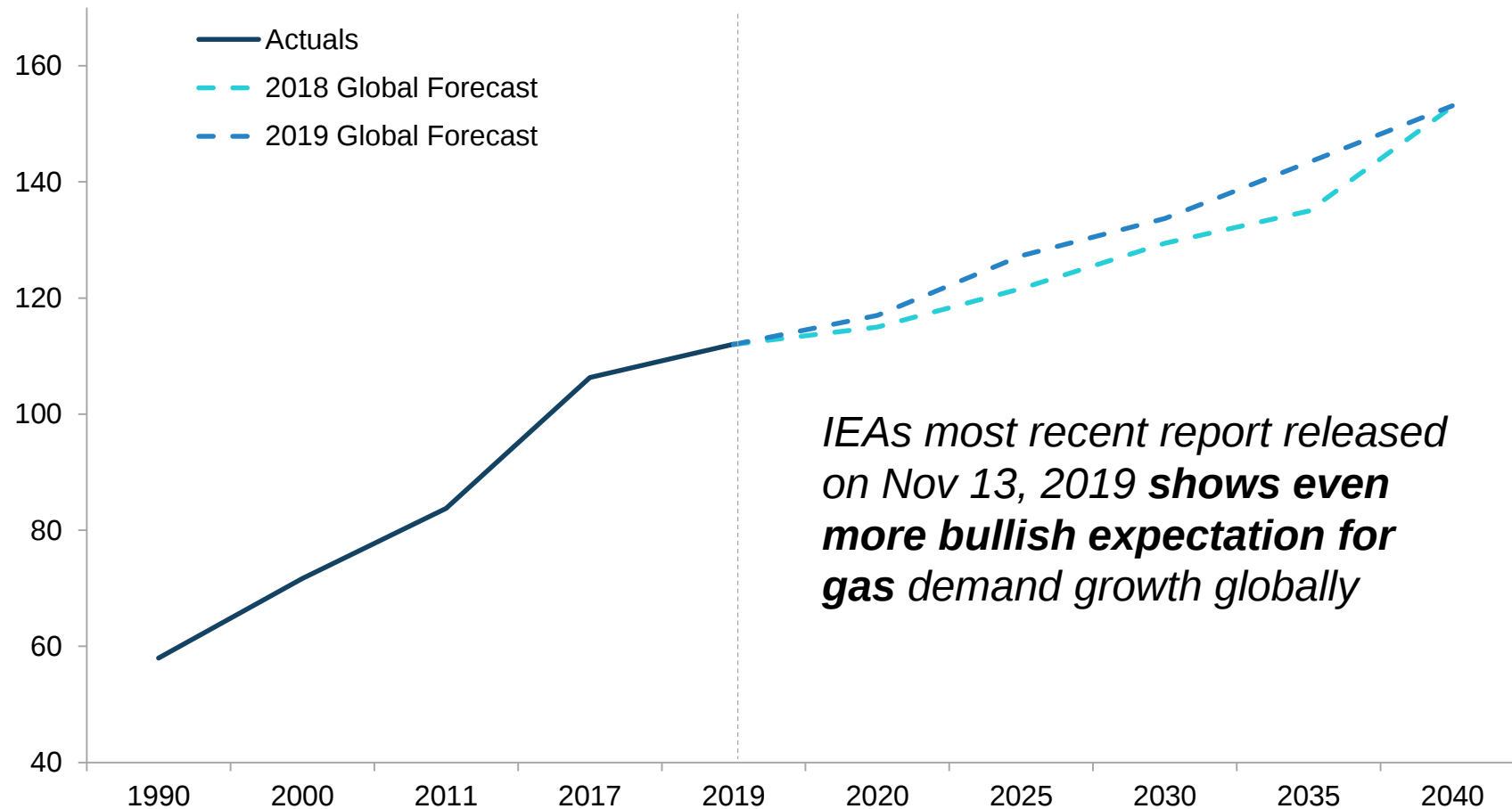


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Natural gas demand outlook remains strong

IEA'S GLOBAL GAS DEMAND OUTLOOK (2019-2040)

Unit: Bcf/d

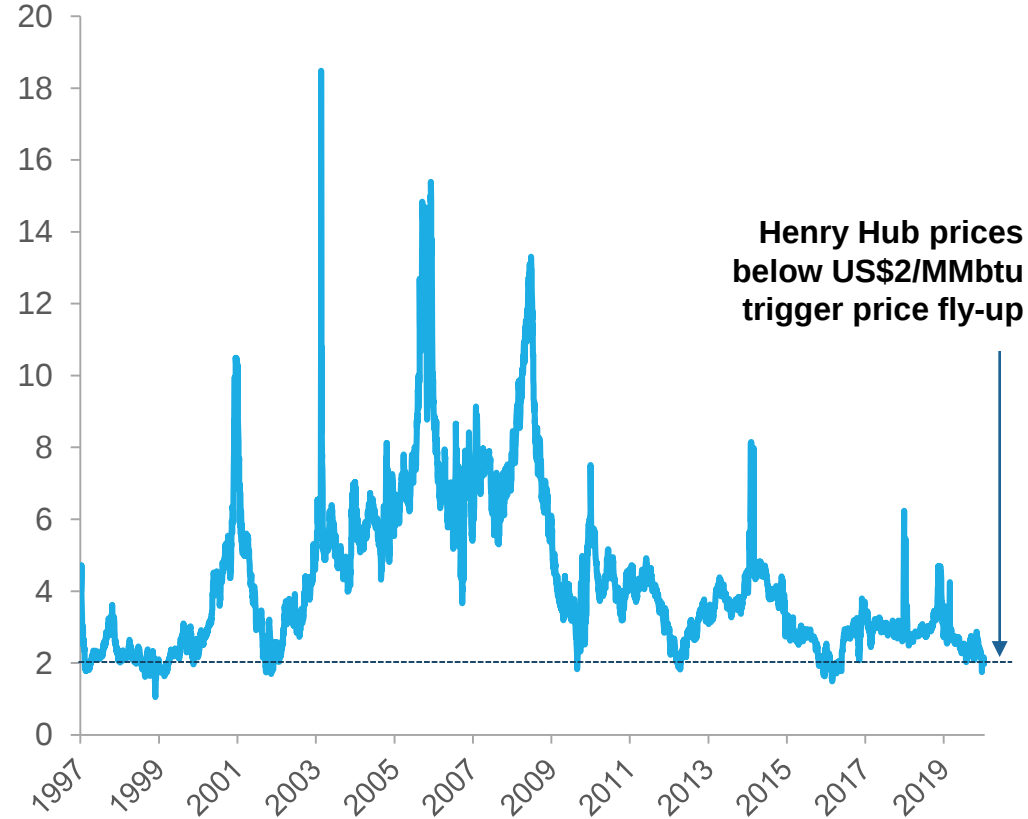


Barnett: option to capture additional value

Build systems and process to allow flexible capex spend to capture during “fly-ups” and conserve cash in downturns

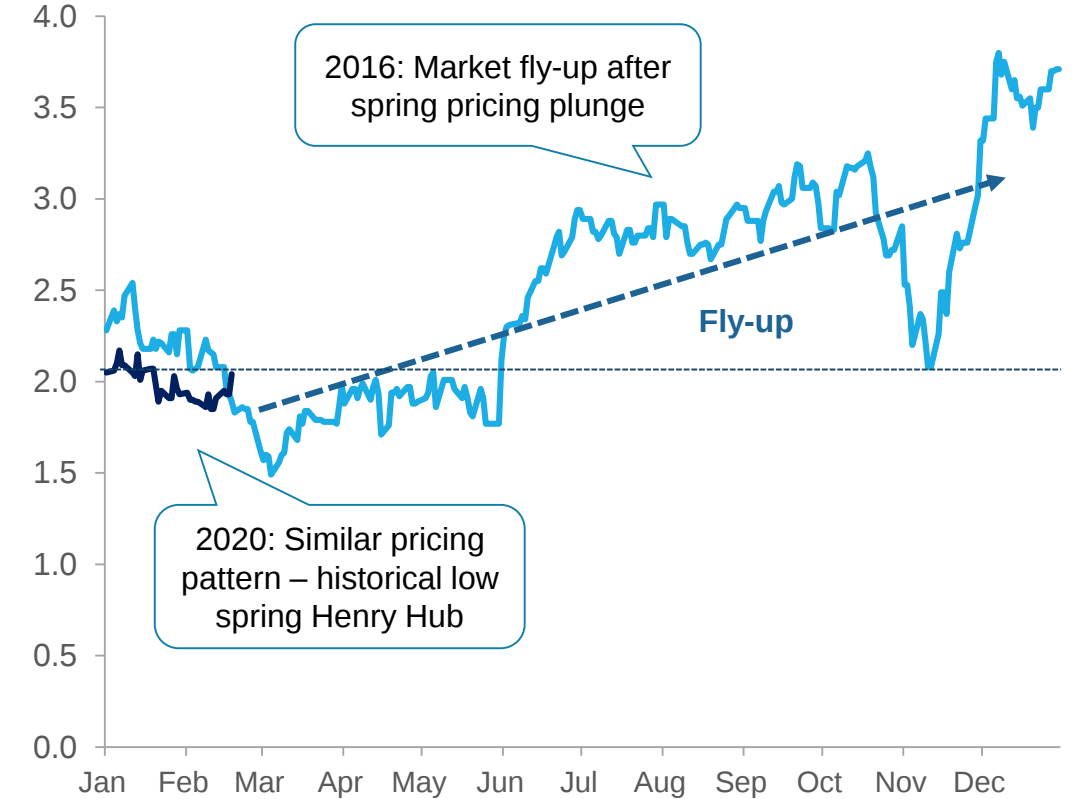
HENRY HUB NATURAL GAS SPOT PRICE

Unit: US\$/MMBtu

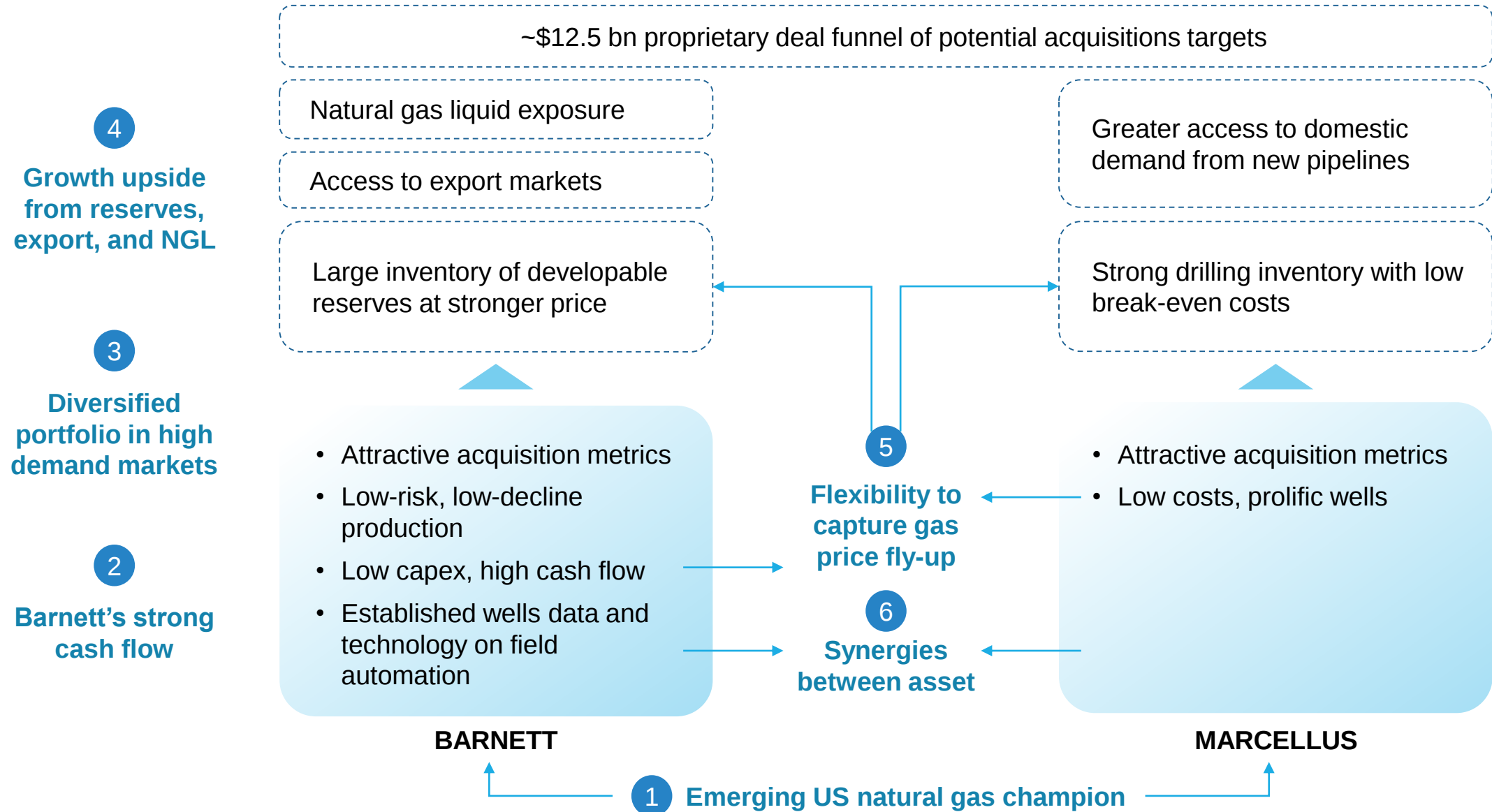


HENRY HUB PRICE – HISTORICAL LOW 2016 VS 2020

Unit: US\$/MMBtu

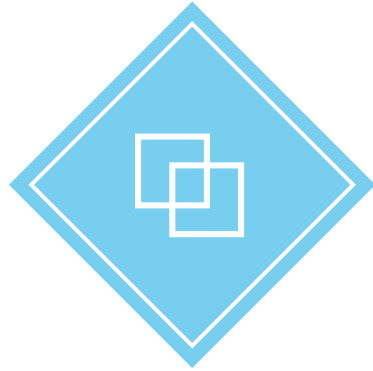


Banpu Gas: strong fundamentals with upside and synergies



Banpu Gas: way forward

2020



BARNETT INTEGRATION

- Complete integration and operational planning process
- Transition service agreement rolling
- Portfolio consolidation



OPERATIONAL STRATEGIES

- Develop drilling inventory at Marcellus to capture gas price fly-ups
- Improve efficiencies at Marcellus with technology transfer from Barnett e.g. field automation, real-time monitoring
- Centralized planning system

GOING FORWARD



RESERVES/ PRODUCTION

- Evaluate developable reserves in Upper Marcellus and Barnett
- Evaluate ~133 accretive refracturing locations in Barnett
- Explore opportunities in Pennsylvanian carbonates and sands plays



MARKETING STRATEGIES

- Study on potential to supply gas directly to gas-fired power plants
- Strengthen market power with vendors and midstream gas sales
- Explore LNG export opportunities

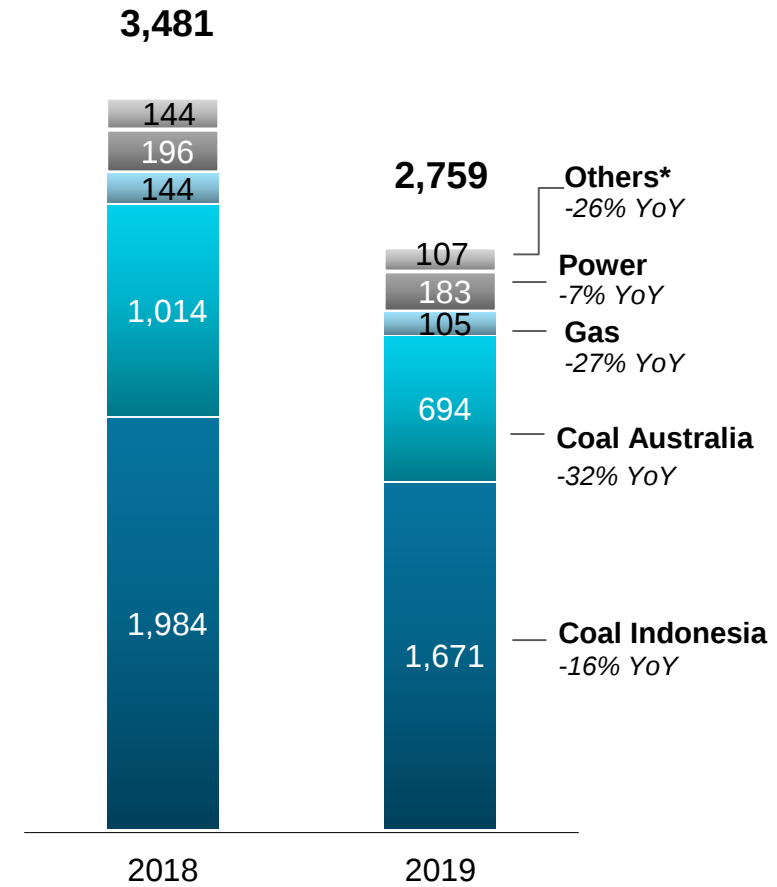
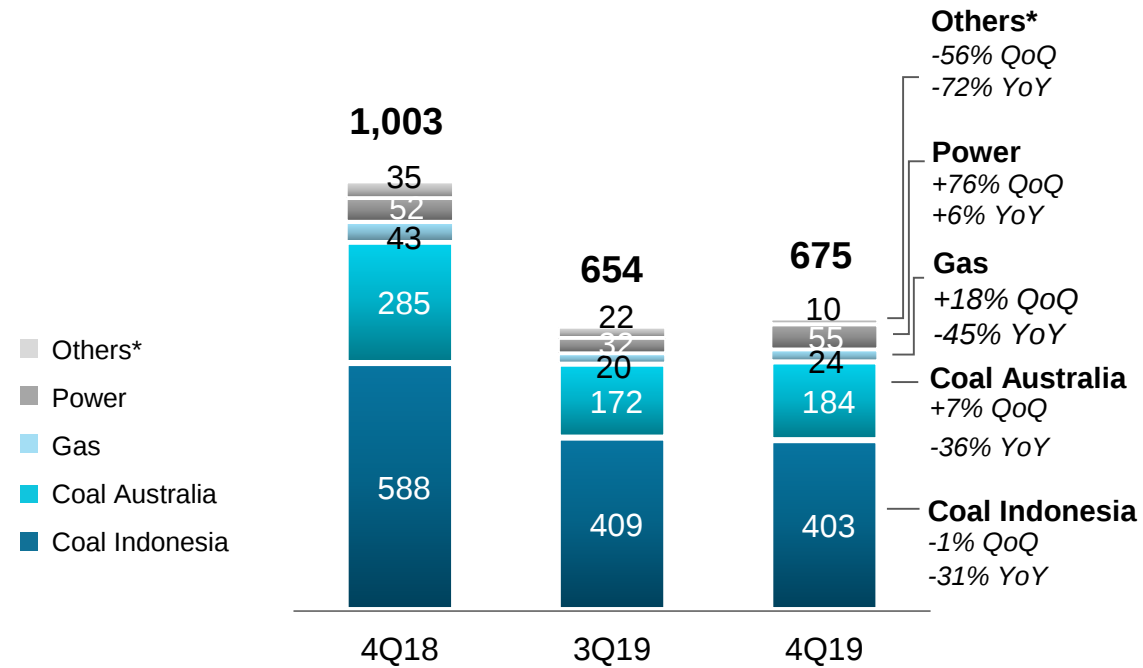
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Banpu consolidated sales revenues

USD million

+3% QoQ
-33% YoY

-21% YoY



Banpu consolidated coal gross margin 2019: 27%

COAL GROSS MARGIN 4Q19 : 28%

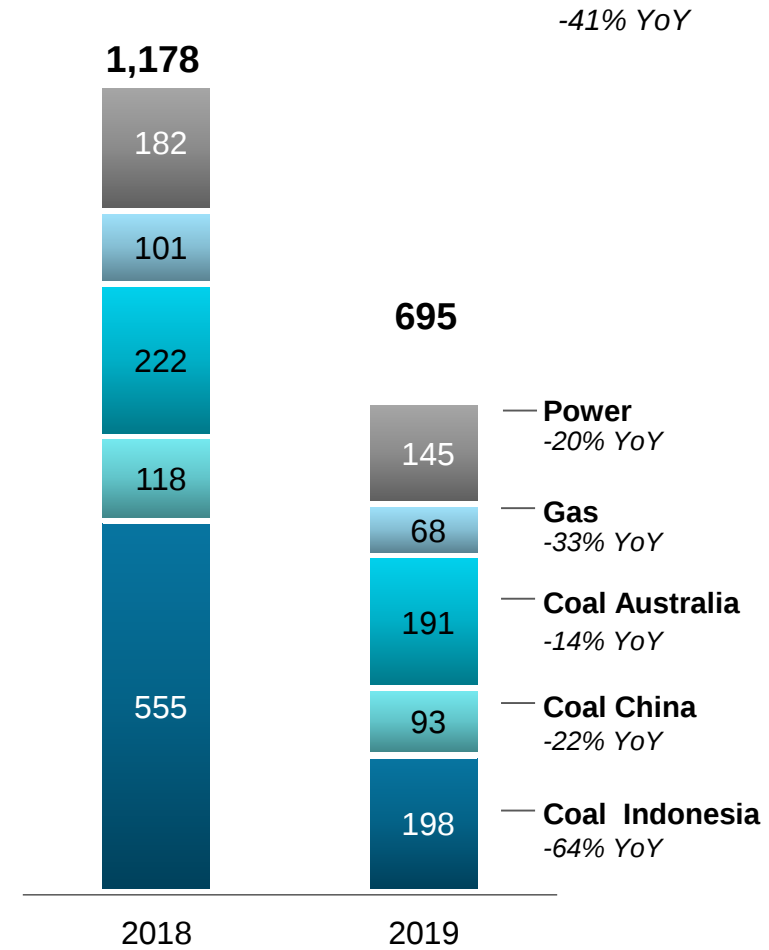
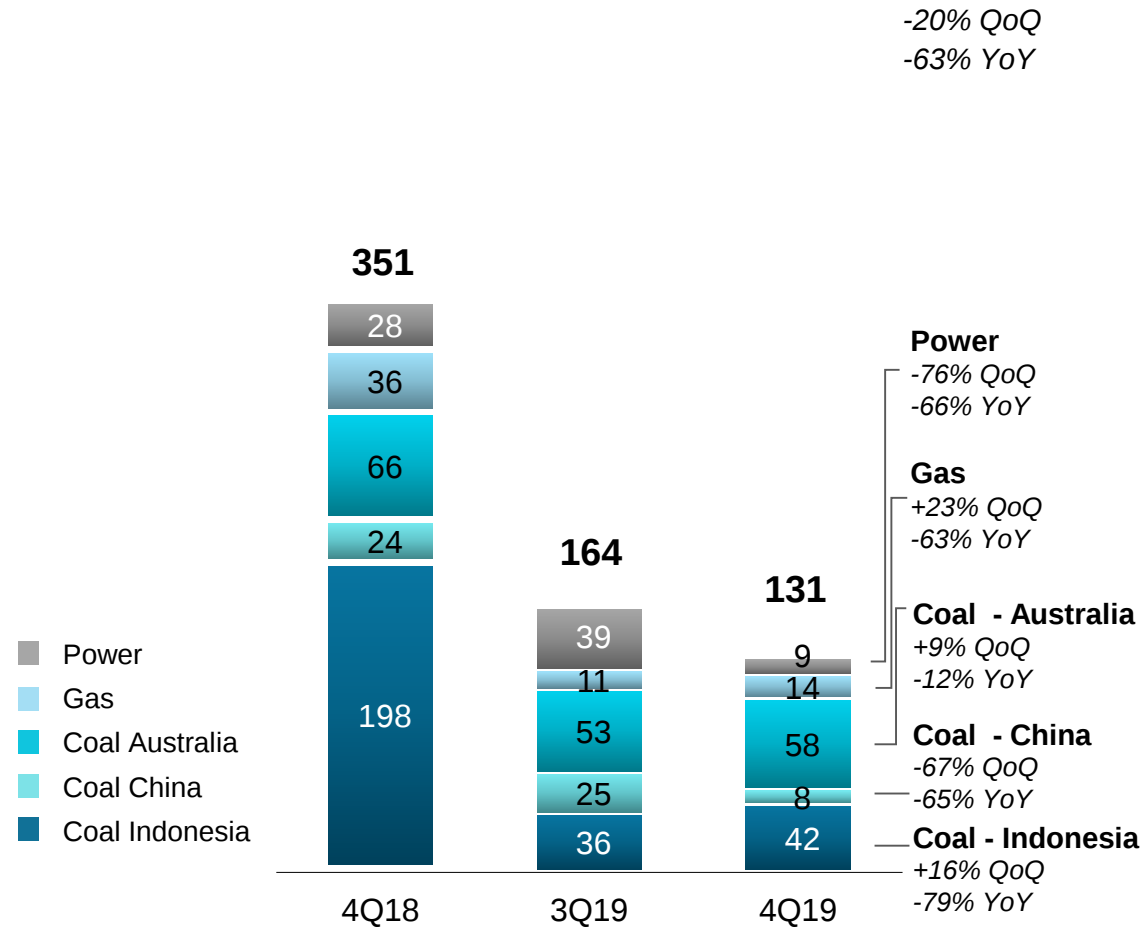


COAL GROSS MARGIN 2019 : 27%



Banpu consolidated EBITDA

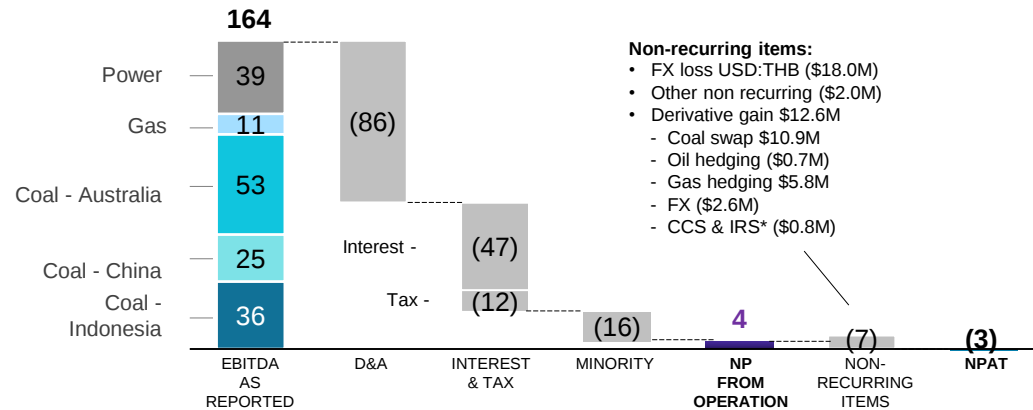
USD million



Banpu consolidated NPAT

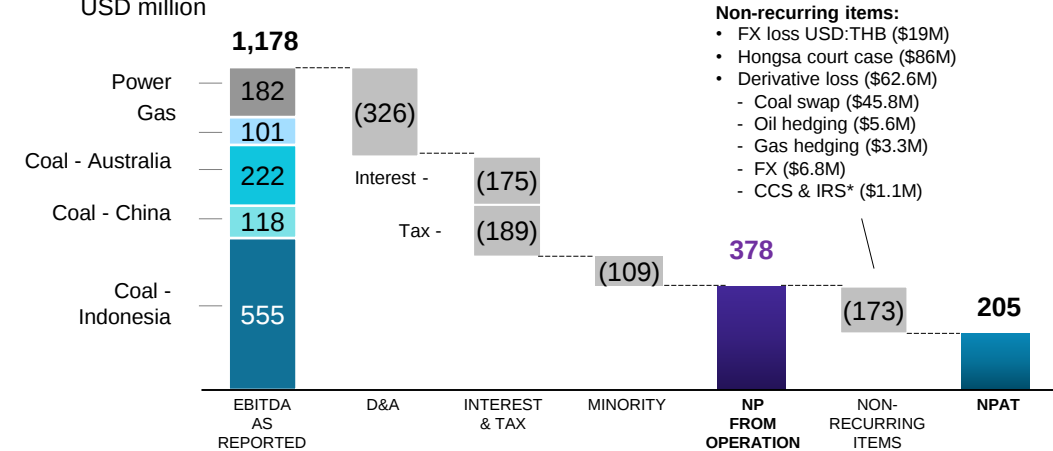
3Q19 NET PROFIT AFTER TAX

USD million



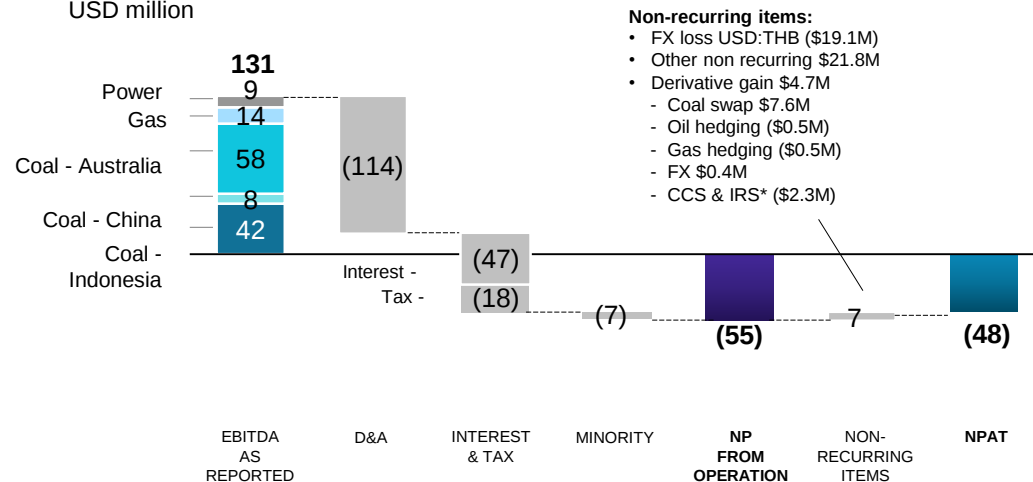
2018 NET PROFIT AFTER TAX

USD million



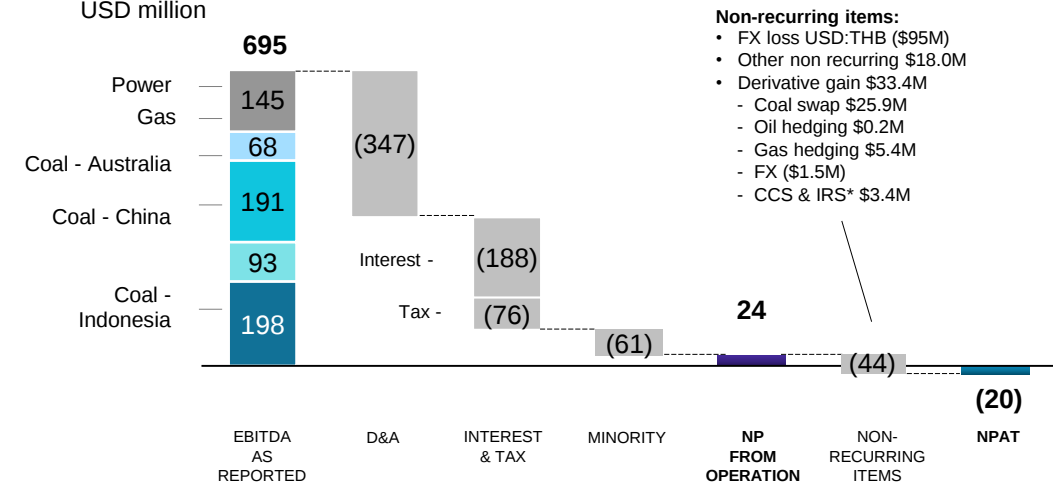
4Q19 NET PROFIT AFTER TAX

USD million



2019 NET PROFIT AFTER TAX

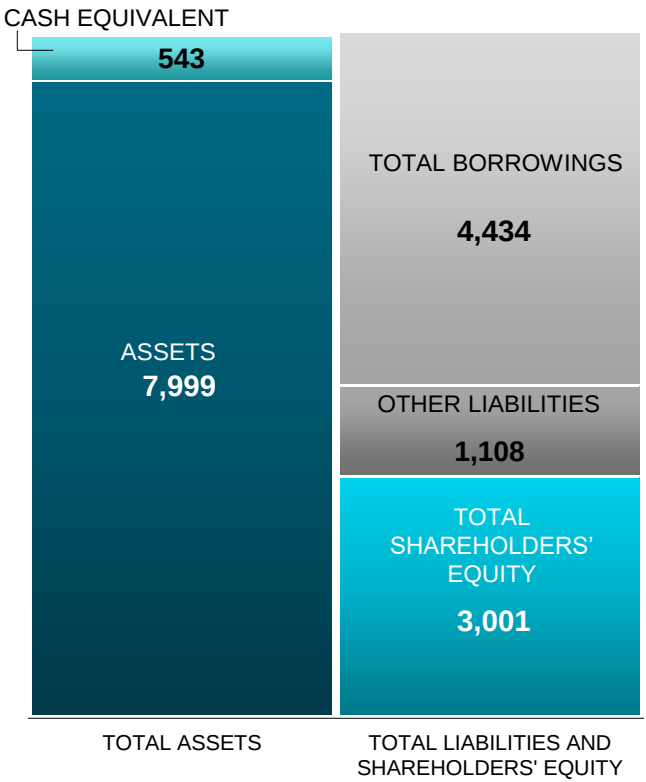
USD million



Banpu consolidated financial position

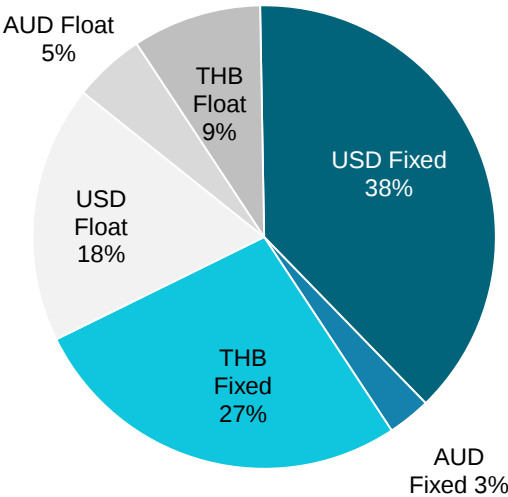
2019 CONSOLIDATED FINANCIAL POSITION

USD million



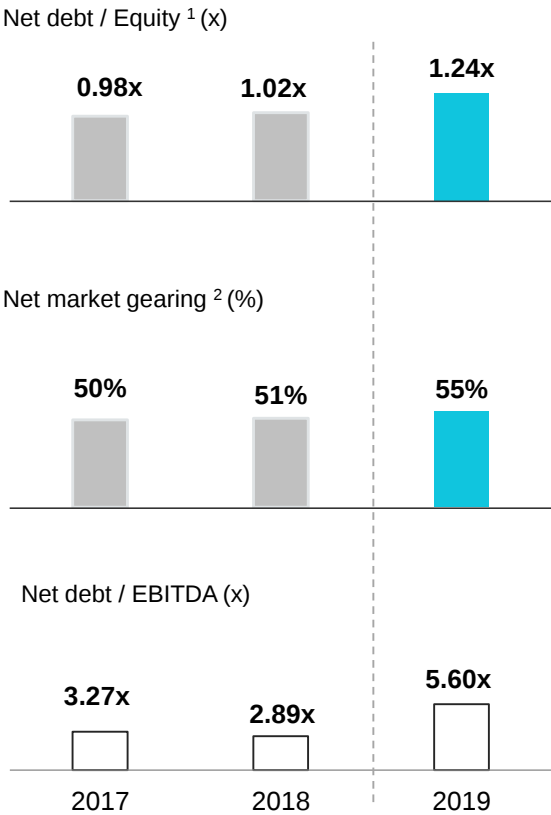
Note:
1 Net debt to book value of shareholders' equity
2 Net debt to enterprise value (enterprise value = net debt + market capitalization as at 31 December 2019)

DEBT FX STRUCTURE



Total gross debt: US\$4.4 billion
As of 31 December 2019

GEARING RATIOS



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 - **Coal**
 - Gas
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Global coal demand trends: 2019 vs 2018

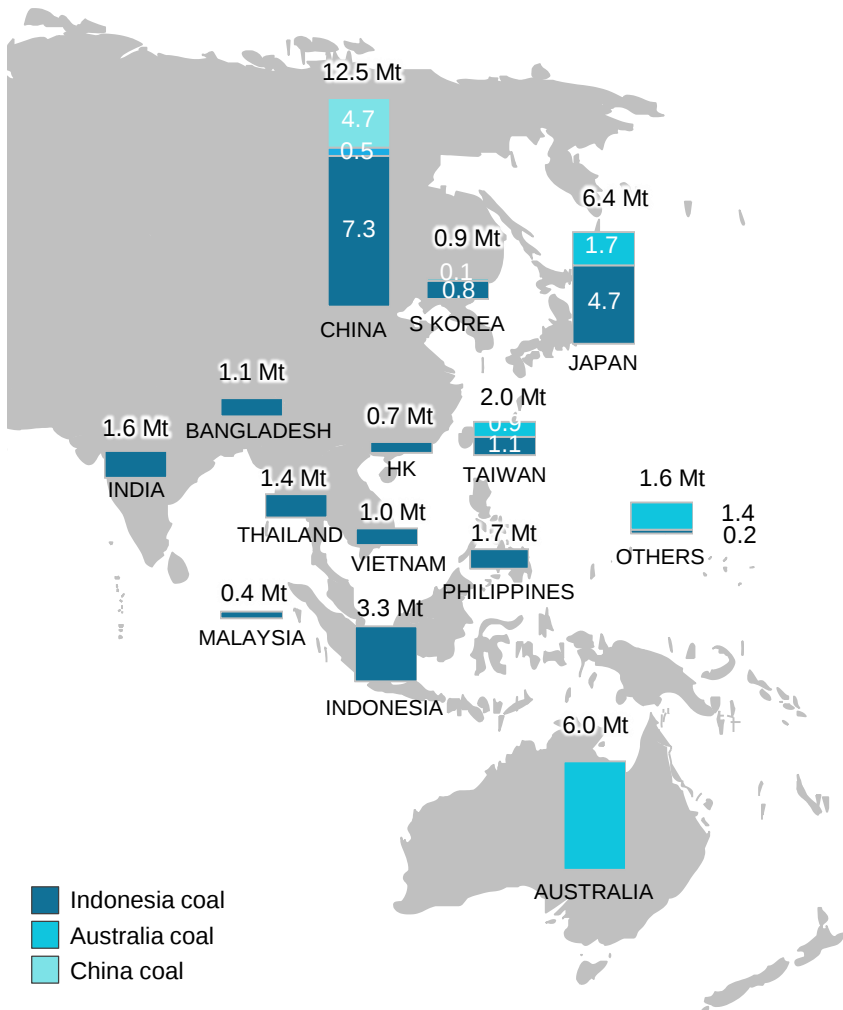
GEOGRAPHY		CHANGE 2019-18 (Mt)	COMMENTS
	CHINA	+11	- Strict import control resulted in significant drop of imported coal in Q4 - Weak demand due to mild winter and weak economy. - Domestic supply continued improve despite a series of mine accidents. - Coronavirus outbreak could lead to a decline of overall coal demand / supply especially in Q1 2020
	INDIA	+9	- Weak demand due to slow economy, recovered domestic supply and stronger hydro generation - Imported coal-based output grew despite a fall in overall coal burn. - High stocks limited spot demand
	OTHER N.ASIA	-12	- A mild weather curbed overall power demand in north Asia. - Japan brings 1GW new coal-fired power plant online in December 2019 which will support coal burn in 2020. - Coal plant curtailment in South Korea and Taiwan to tackle dust emissions hit coal burn during winter.
	EUROPE	-28	- Fundamentals are largely bearish with a combination of mild weather, poor economic conditions, increasingly challenged by environmental reforms, and ample, cheap gas pushing coal demand lower. - Market remained oversupply.
	OTHERS	+29	- Vietnam coal imports near double on surging power demand. - Philippines and Bangladesh also contributed to the demand growth in Asia.
	GLOBAL	+9	Poor economic conditions, mild weather and low gas prices reduced imported coal demand in Europe significantly. However, strong Asian demand grew outpacing declines in European demand. Oversupplied LNG is struggling to compete in Asia resulted in more distressed coal displacement in Europe.

Global coal supply trends: 2019 vs 2018

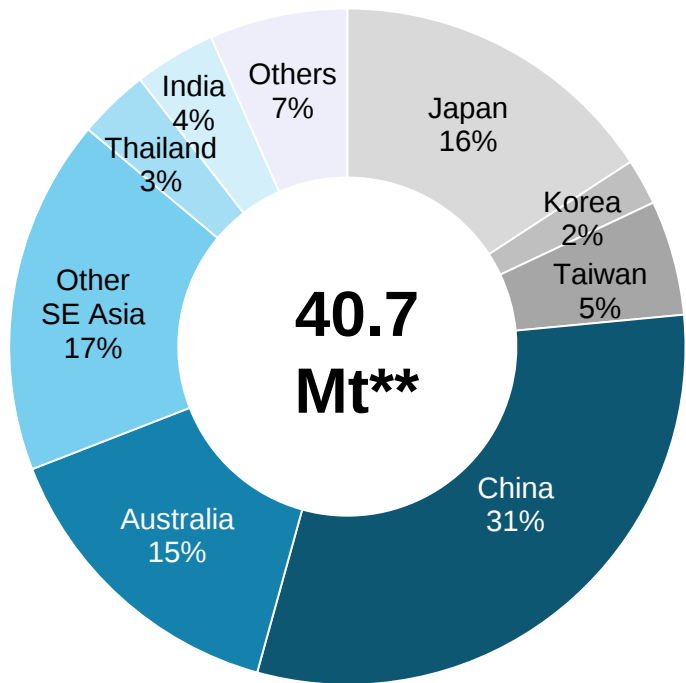
GEOGRAPHY	CHANGE 2019-18 (Mt)	COMMENTS
 INDONESIA	 +33	▪ Rain started to impact supply ▪ China's import restriction has limited impact as producers prepared in advance to face this situation. ▪ Implementation of online monitoring system has limited impact on exports
 AUSTRALIA	 +4	▪ Bushfires has minimal impact to coal exports. ▪ Strong export despite China's import restriction. ▪ Increased export to Vietnam
 COLOMBIA	 -5	▪ Producers reduced output due to weak European demand and low prices ▪ Some producers face a lawsuit challenge on environmental problems.
 RUSSIA	 +2	▪ Continue divert more coal to Asia on declining European demand. ▪ Snow and icy slowed coal transport late last year. ▪ Shipments to far eastern ports grew by around 6% despite limited rail capacity
 S.AFRICA	 -3	▪ Strong domestic demand ▪ Heavy rain led to a sharp drop in production in December 2019. ▪ Price rally supported by tighten supply and demand from Indian sponge iron
 USA	 -15	▪ Due to a declining domestic thermal market, some operations have been forced to close as contracts expire ▪ Producers have struggled to book shipments for 2020 exports due to low international prices.
 OTHERS	 +6	▪ Significant export growth from the Philippines ▪ Canada and China also contributed to the growth
 GLOBAL	 +22	<i>Atlantic suppliers are looking to growing Pacific markets. But Colombia and the US are disadvantaged by higher transportation costs. Russia is catching up by building out infrastructure to support eastern flows. Indonesia is the most advantage as it located close to demand growth.</i>

Banpu group coal sales 2019

COAL SALES* SOURCE – DESTINATION ANALYSIS 2019



GLOBAL COAL SALES* 2019e BY REGION



Notes:

* Sales from Indonesia are included on 100% basis, sales from Australia and China are included on equity basis. Excluding Mongolia coal

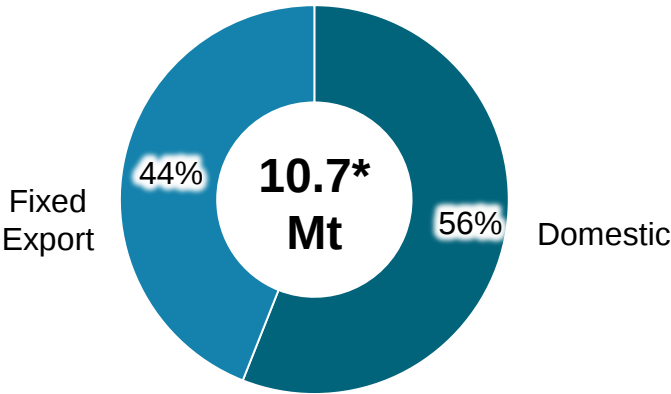
** Illustrative target

** Includes coal sales from domestic production in China

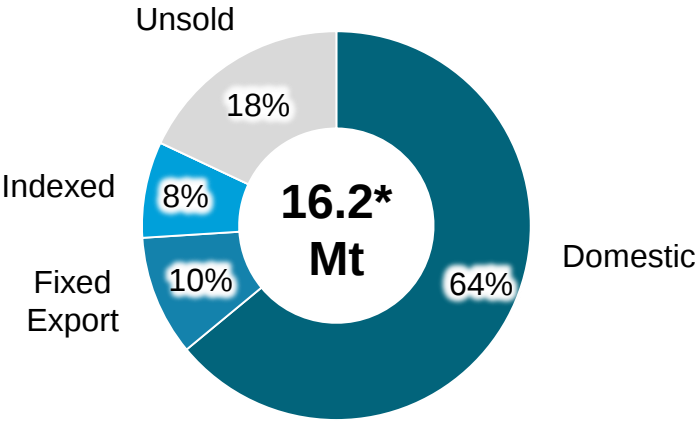
Banpu coal sales pricing status

AUSTRALIA COAL

2019

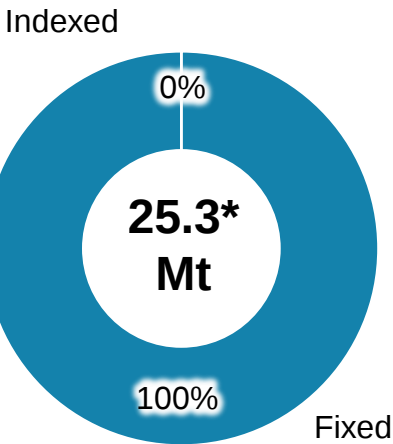


2020e

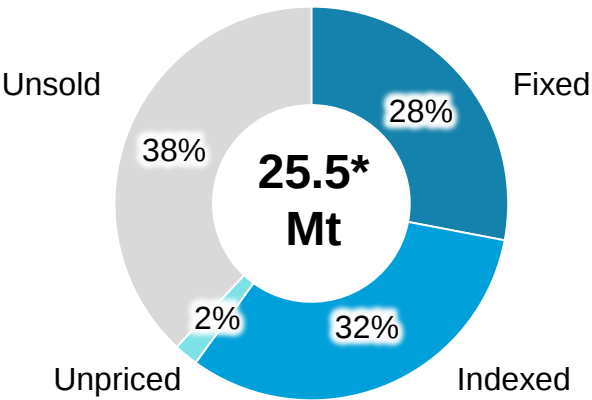


INDONESIA COAL

2019



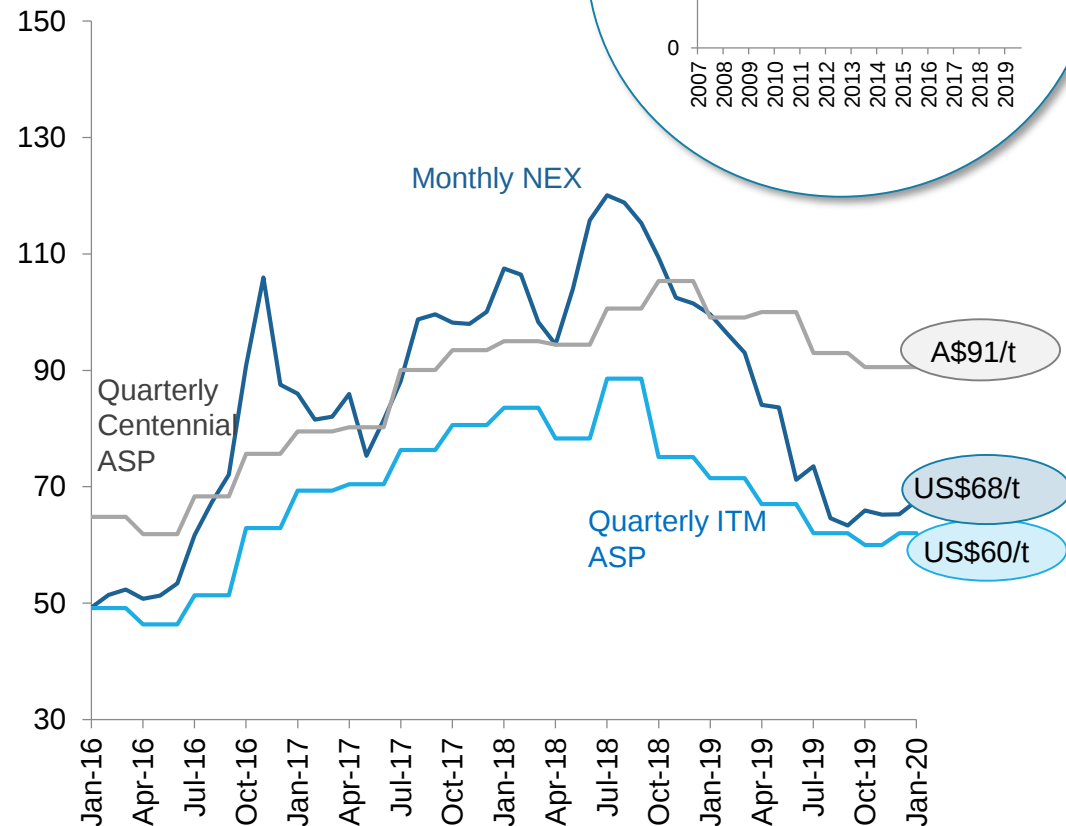
2020e



Banpu ASPs vs thermal coal benchmark prices

BANPU ASP VS BENCHMARK PRICES

Unit: US\$/t; A\$/t for CEY



COMMENTS

- Price stabilize through 4Q19 in upper \$60's.
- Mild winter Weak global economy flatten demand.
- Bottom reached in late 3Q then slight recover.
- ASP slightly reduced from previous quarter. CEY export prices declined but underpinned by stable domestic price.
 - ITM ASP: US\$60/t* (-3% QoQ)
 - CEY ASP: A\$91/t* (-2% QoQ)
 - NEX (February 21, 2020)**: US\$68.1/t
- October Benchmark surfaced at US\$72.75 above spot price. Future price on contango trend. China – USA trade conflict ease. Price move in narrow band. Impact of COVID-19 press the growth, also interrupt production from stranded workforces.

OUR WAY IN ENERGY

Note: * Included post shipment price adjustments as well as traded coal
 ** The Newcastle Export Index (previously known as the Barlow Jonker Index – BJI)

Limited impact on Banpu's operations from COVID-19

MAP OF BANPU'S OPERATIONS IN CHINA

- >10,000 cases of COVID-19
- >1,000 – 10,000 cases
- >100 – 1,000



- 
 Coal operations
- 
 Conventional power development
- 
 Conventional power
- 
 Solar PV
- 
 Batteries

Coal supply disruptions could support coal price

Demand

- Short-term impact from some industrial sectors
- Strong demand for medical product manufacturing customers e.g. medical glove manufacturers

Supply

- Coal truck transportation constraint since cross-province truck transportation is limited, while rail transportation recovered as government required coal mines to resume operation
- Need more imports because domestic production struggles. Also, lower coal inventory at QHD - hit lowest at 3.9 Mt in Feb 2020, but has been recovering

Limited and manageable impact on Banpu's operations



COAL MINING

- No impact on coal sales through Gaohe's railway spur with requirement to increase from 5 trains to 6-7 trains
- Some short-term impacts on production from low worker attendance and production material



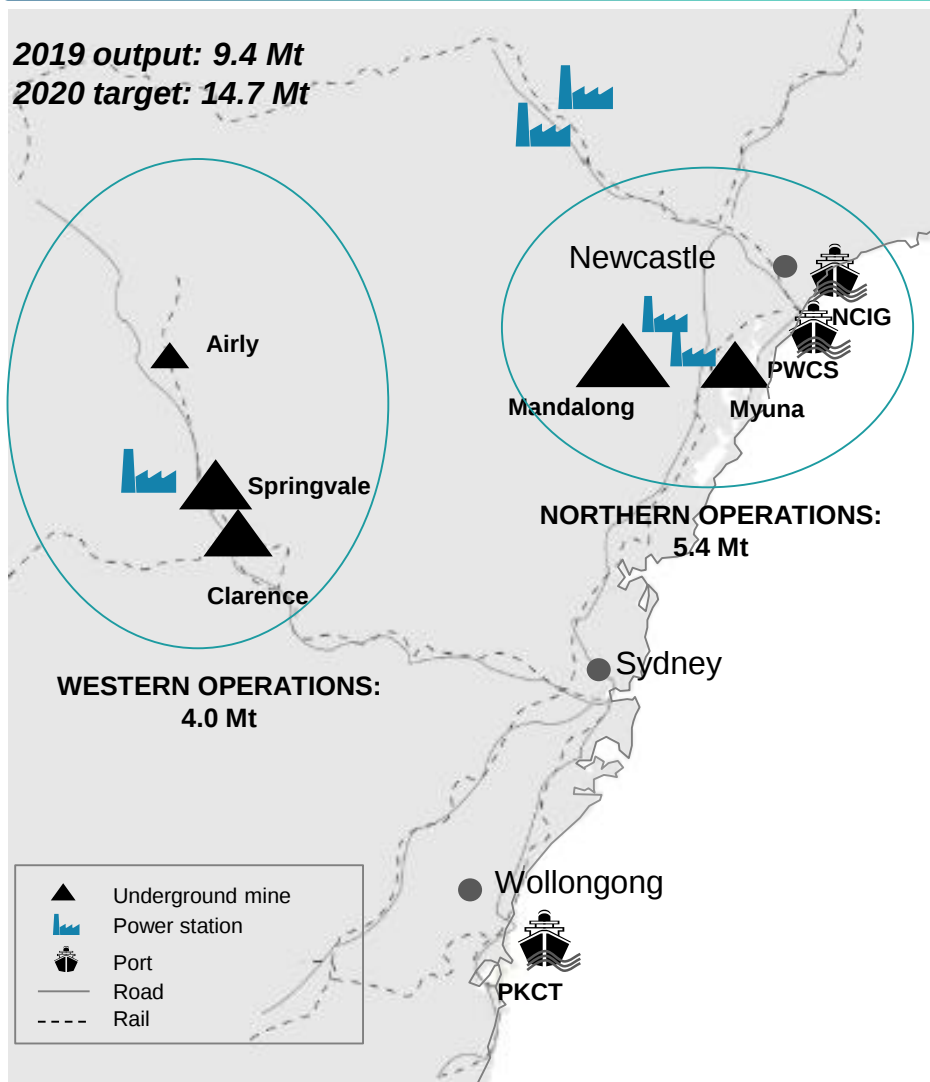
POWER GENERATION

- **CHP:** Potential increase from some industrial customers whose products related to medical treatment while residential demand remains stable
- **SLG:** Short of construction workers and material parts could impact construction, but remain target completion by end 2020

Australia coal: operational summary

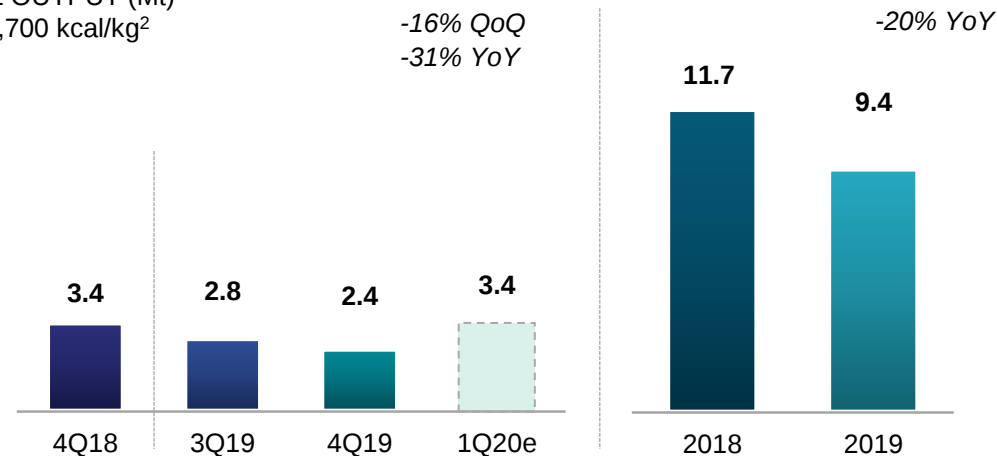
2019 OUTPUT (ROM EQUITY BASIS)

2019 output: 9.4 Mt
2020 target: 14.7 Mt



QUARTERLY OUTPUT (ROM EQUITY BASIS)

COAL OUTPUT (Mt)¹
CV: 6,700 kcal/kg²



Key updates

- Equity ROM: 2.4 Mt (down 16% QoQ, down 31% YoY) with both longwalls undergoing changeovers.
- Mandalong - as a result of faulted zone, there were two longwall changeovers. Production nonetheless achieved daily production record.
- Springvale's changeover to LW426 supported by successful ramp-up to full production in November 2019.
- Acquired 50% interest in Springvale, 100% reflected from 1 Dec 2019.
- Productivity and efficiency improvements continue, with further production records achieved at Airly.
- Clarence commissioned 2nd FCT and implemented double-sided extraction in early Dec. Good productivity rates achieved after panel commissioning completed.

OUR WAY IN ENERGY

Note: NCIG = Newcastle Coal Infrastructure Group; PWCS = Port Waratah Coal Services; PKCT = Port Kembla Coal Terminal.

1 ROM output on an equity basis, 2 CV figures are air-dried basis

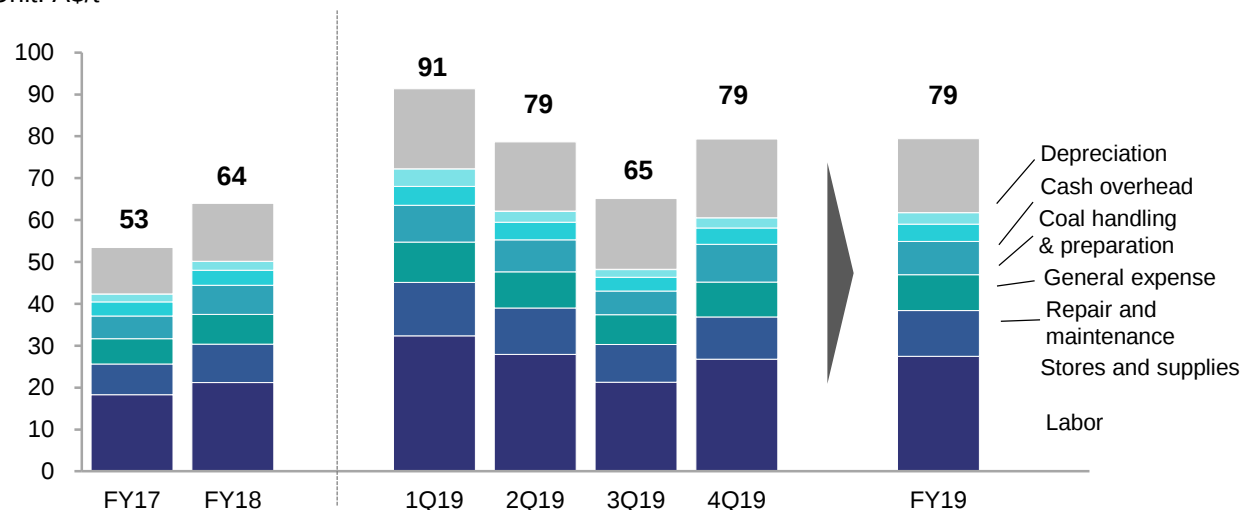
Australia coal: financial summary

FINANCIAL SUMMARY

Unit: A\$ M	4Q19	3Q19	QoQ	2019	2018	YoY
Sales (Mt)	3.0	2.7	9%▲	10.7	14.1	24%▼
ASP (A\$/t)	91	93	2%▼	96	97	2%▼
Sales revenue	271	255	6%▲	1,022	1,372	26%▼
EBITDA¹	28	67	58%▼	124	314	61%▼
Gain from acquisition	75	-	-	75	-	-

AVERAGE PRODUCTION COST²

Unit: A\$/t



Comments

- Increased sales predominantly result of higher export sales due to reduction in stockpiles, in particular at Clarence
- ASP underpinned by stable domestic prices however, slightly impacted by decline in export prices
- Higher export sales by 9%QoQ led to increased revenue, with domestic sales remaining stable.
- Looking forward:
 - Domestic prices** escalating with cost indexes and increased contract sales catch-up
 - Springvale** 100 % interest increasing volumes, higher productivity now being achieved
 - Clarence** with the 2nd FCT commissioned together with the new 12CM27 wide-head miner, is achieving good results
 - Airly and Mandalong** all increasing production in 2020
 - Myuna** has commenced an exploration program to determine optimal areas to mine

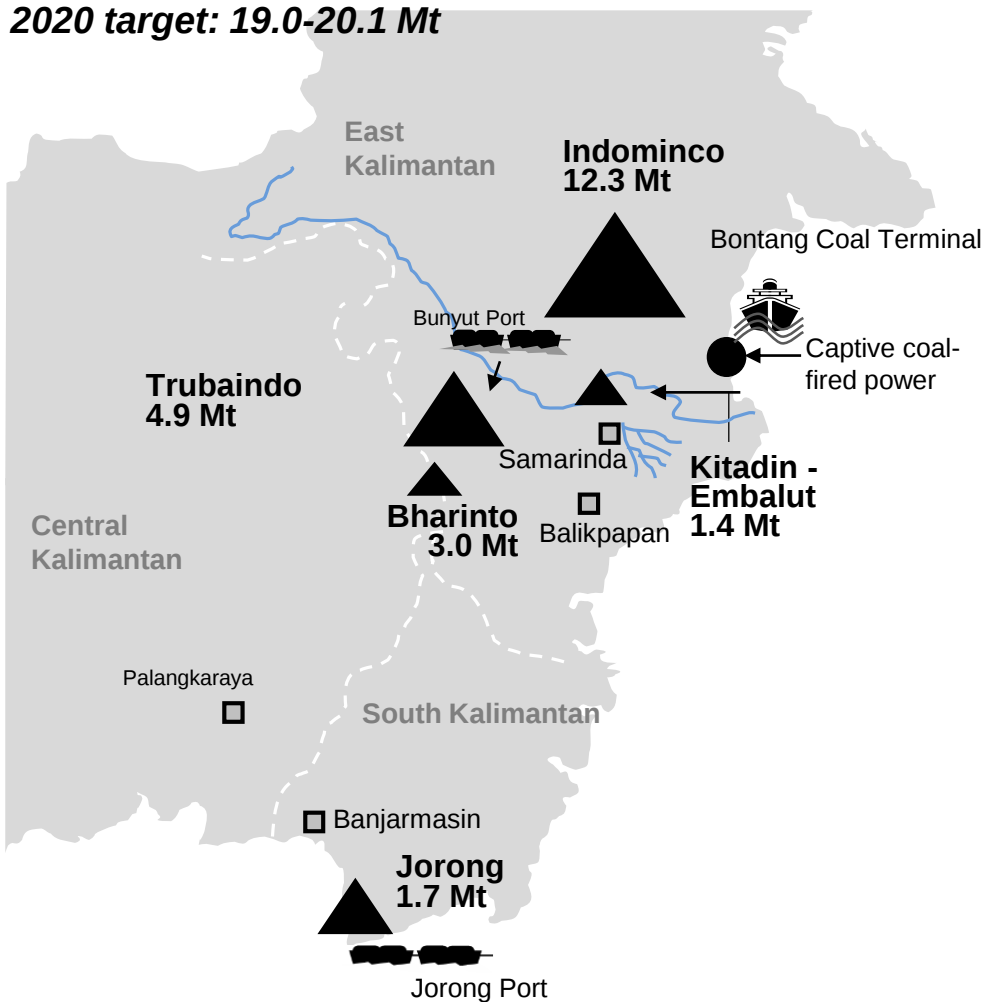
OUR WAY IN ENERGY

Note: 1 Excludes other income, gain on sale of assets and gain in acquisition, 2 These figures do not include selling, distribution and royalty costs; based on 'sold' production

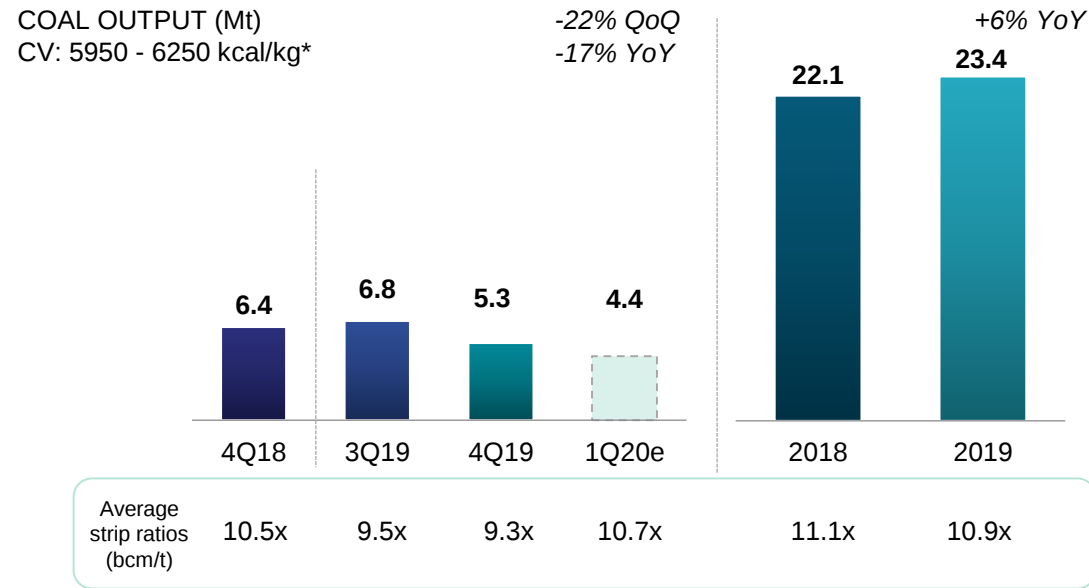
Indonesia coal: operational summary

2019 OUTPUT (SALEABLE TONNE BASIS)

2019 output: 23.4 Mt
2020 target: 19.0-20.1 Mt



QUARTERLY OUTPUT (100% BASIS)



Key updates

- Indominco: 4Q19 output was slightly lower than target of 2.7Mt as rainy season had started
- Trubaindo: achieved target output of 1.2 Mt
- Bharinto: achieved target output of 0.7 Mt
- Embalut: achieved target output of 0.3 Mt
- Jorong: achieved target output of 0.5 Mt

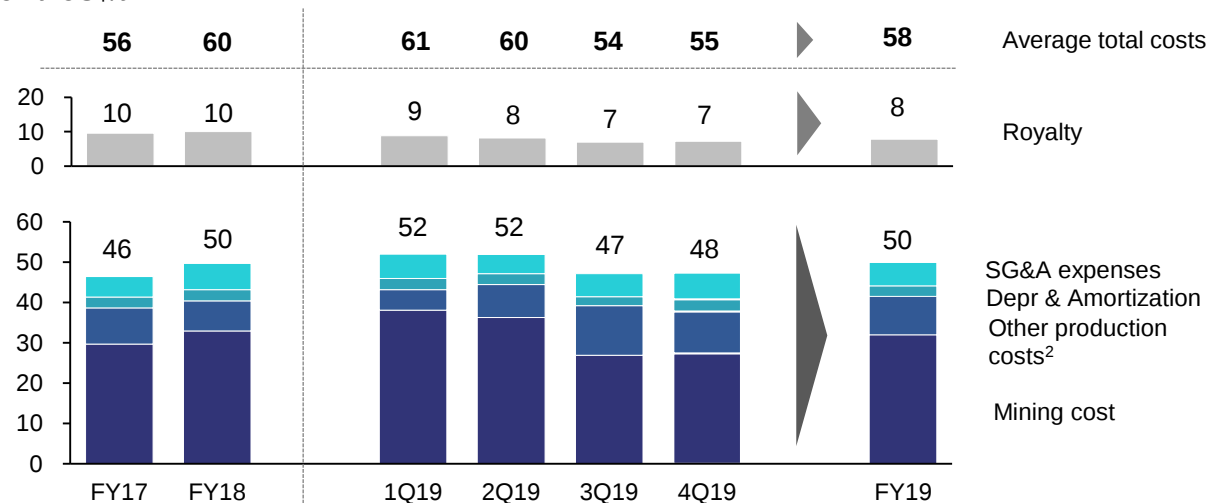
Indonesia coal: financial summary

FINANCIAL SUMMARY

Unit: US\$ M	4Q19	3Q19	QoQ	2019	2018	YoY
Sales (Mt)	6.5	6.5	+1%▲	25.3	23.5	+7%▲
ASP (US\$/t)	60	62	-3%▼	65	81	-20%▼
Sales revenue	411	412	-0%▼	1,716	2,008	-15%▼
EBITDA	62	53	+16%▲	242	497	-51%▼

AVERAGE TOTAL COST¹

Unit: US\$/t



Comments

- Higher total sales in 4Q19, driven by Bharinto and Jorong
- ASP was again impacted by softening coal market prices, down by 3% QoQ
- Average total cost slightly increased compared to 3Q19 level. Overall FY19 total cost improved due lower royalty and mine plan optimization initiative.

China and Mongolia coal summary

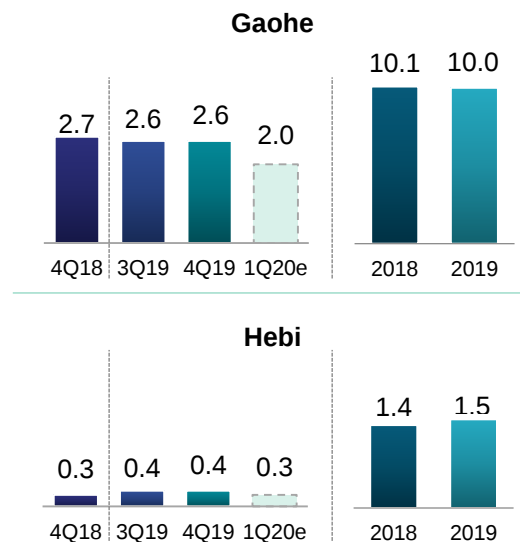
CHINA COAL 2019 PRODUCTION*

Unit: Mt ROM

2019 output: 11.5 Mt



Note: * Output figures are ROM output (100% basis)



GAOHE'S FINANCIAL SUMMARY

Unit: US\$ M	4Q19	3Q19	QoQ	2019	2018	YoY
Sales (Mt)	2.7	2.1	29%▲	9.2	9.7	5%▼
ASP (US\$/t)	81	84	4%▼	87	93	6%▼
Sales revenue	216	176	23%▲	798	896	11%▼
COGS (US\$/t)	72	48	50%▲	56	52	8%▲
EBITDA	42	92	54%▼	365	464	21%▼

GAOHE OPERATIONAL UPDATES

- Stable production with continued focus on safety
- Sales in Q4 up by 29% because of high demand and production resumption during winter season.
- COGS in Q4 increase from expenses relating to plant maintenance and safety fees

HEBI OPERATIONAL UPDATES

- Continue to manage gas drainage and to improve development rate
- higher production in Q4 due to Panel 2509 resumed operation, and enhancement of operation management.
- Continue to focus on safety and environment improvement measures to make sure the production is stable

MONGOLIA PROJECTS UPDATES*

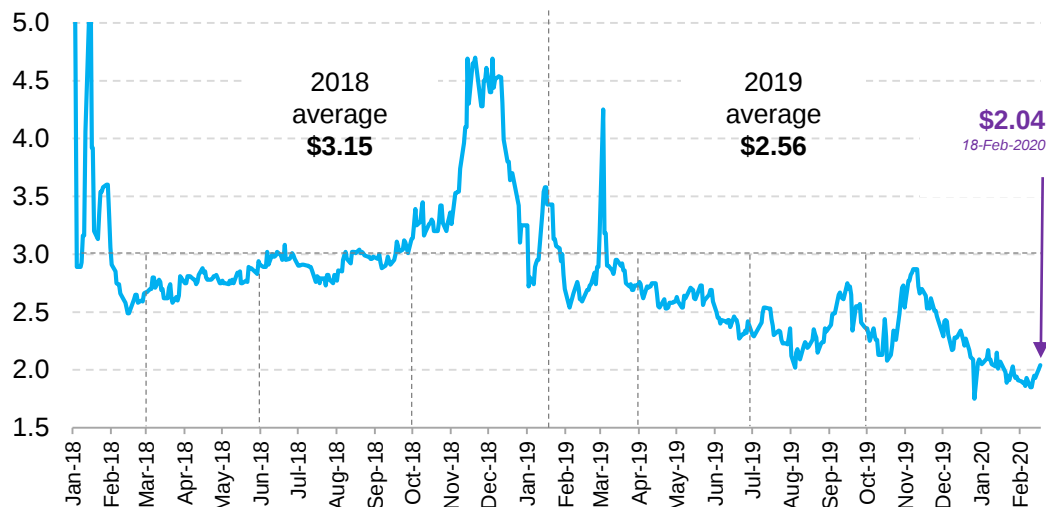
- Preliminary feasibility study for UK coal conversion
- Received MRPAM¹ approval of Feasibility Study for AN Coal Fired Power Plant
- Received approval DEIA² report for AN Coal Fired Power Plant from MEGD³

- 1 2019 highlights
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U.S. gas market update

AVERAGE HENRY HUB PRICE AS OF 16 FEB 20

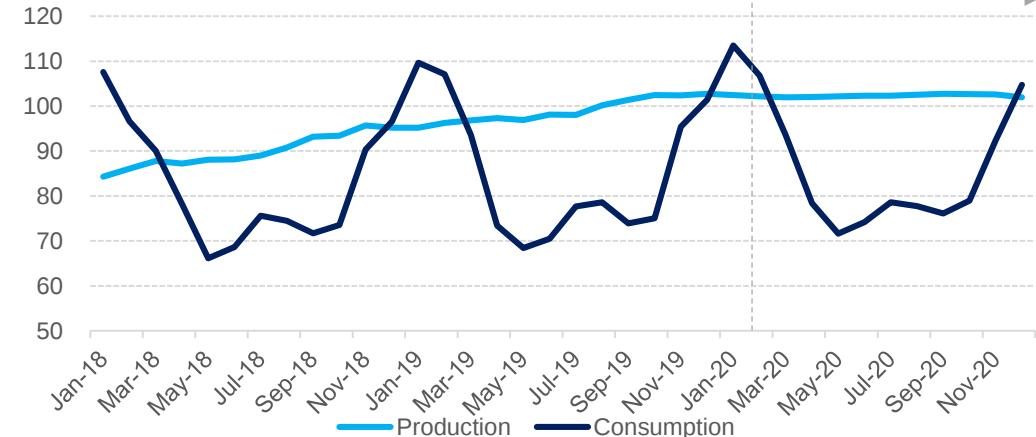
Unit: US\$/MMBTU



- **Gas Price:** Henry Hub price averaged around \$2.56 per MMBtu in 2019, lower than 2018 average price by 19%.
- Although production set a new record in 2019, averaging 92.1 Bcf/d and is expected to rise to 94.2 Bcf/d in 2020, monthly production is expected to generally decline through 2020, falling from an estimated 95.4 Bcf/d in January to 92.5 Bcf/d in December.
- Consumption averaged 85.3 Bcf/d in 2019 and is expected to increase by 1.7% to 86.7 Bcf/d in 2020. The growth will come from electric power and industrial sectors
- **Outlook:** Natural gas pricing recovery will most likely arrive in 2nd or 3rd quarter, as a result of production declines and increase demand for power generation.

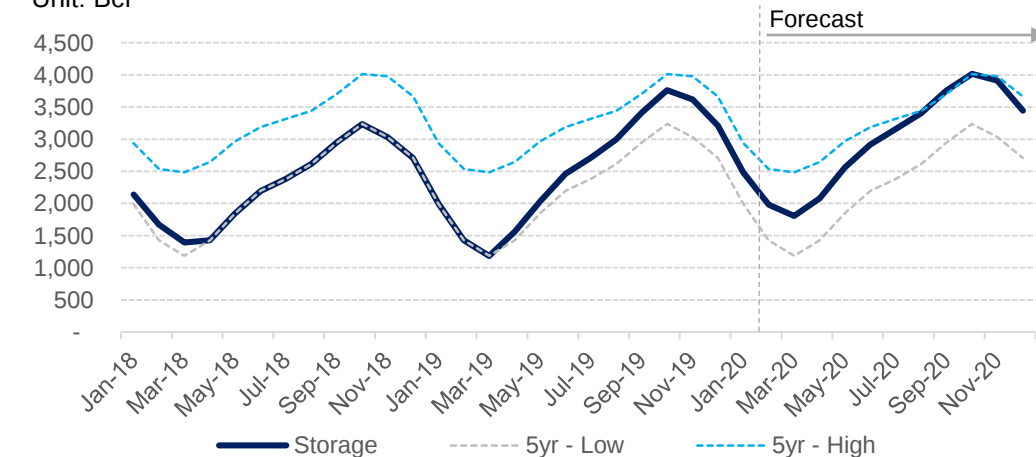
U.S. TOTAL NATURAL GAS PRODUCTION – CONSUMPTION

Unit: Bcf/d



U.S. STORAGE LEVEL

Unit: Bcf

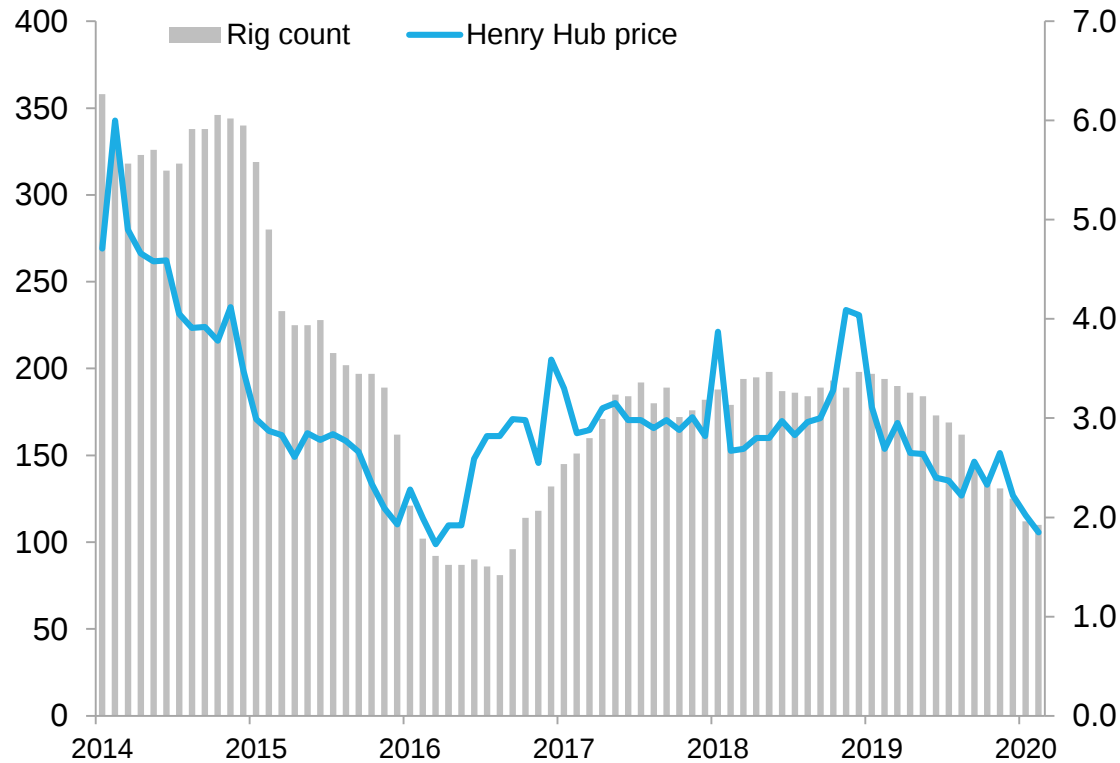


U.S. natural gas production is responding to price

US NATURAL GAS RIG COUNT VS HENRY HUB PRICE

US NATURAL GAS RIG COUNT
Unit: Rigs

HENRY HUB SPOT PRICE
Unit: \$/MMBtu



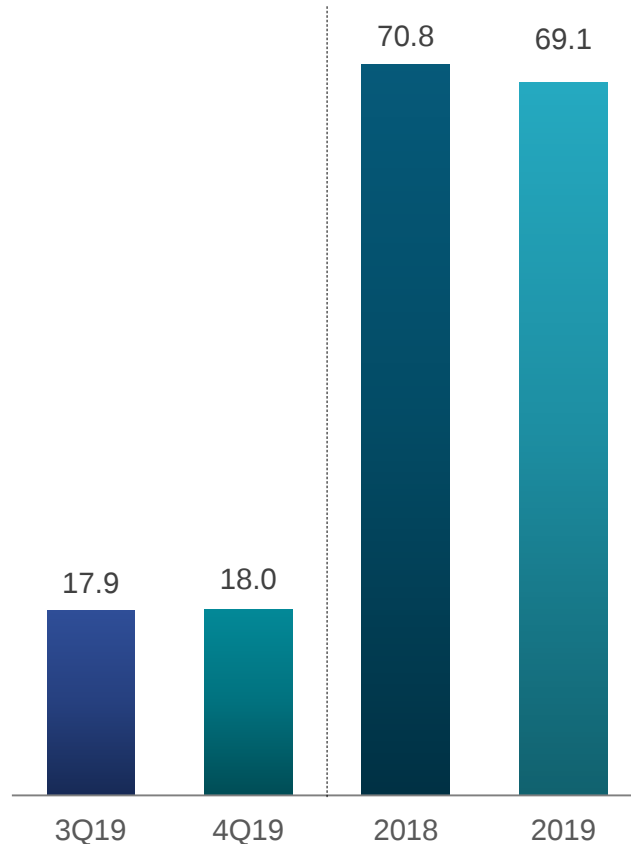
- Falling natural gas prices lead to slowing upstream investment
- Natural gas rig count has been declining, c.44% decrease since January 2019
- Without an uptick in drilling activity, natural gas production is set to decline
- Permian pipeline bottlenecks will cap further associated gas supply growth, until new pipeline enters service in early 2021

Gas business 4Q19 performance and FY2019 (Marcellus)

Slight decline in FY19 sales volumes as a result of strategic frac curtailment and drilling & completion delays. Full-year EBITDA shortfall largely characterized by low pricing environment despite continuous saving in operating costs.

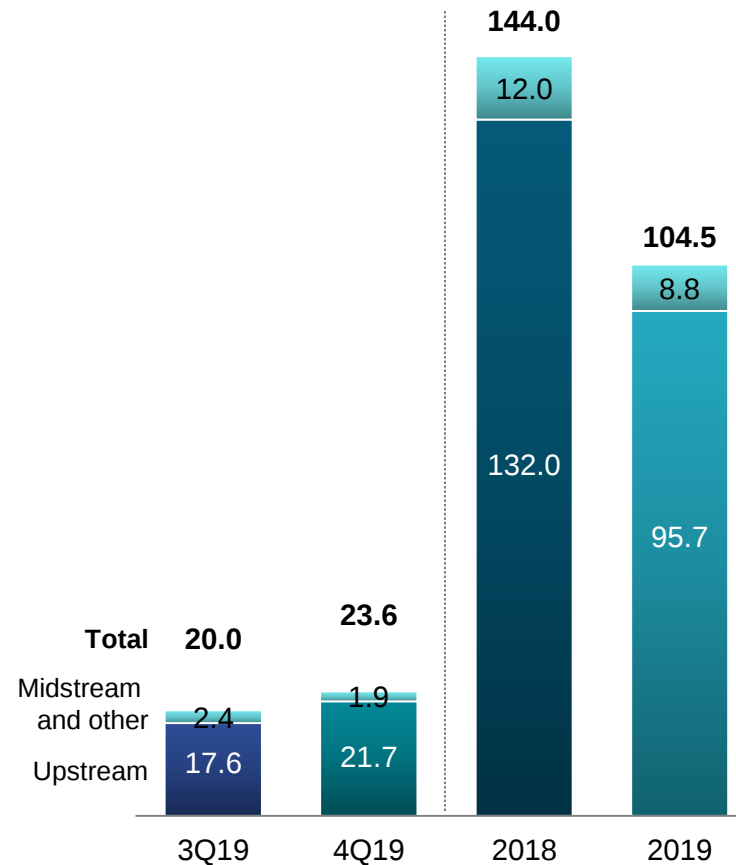
SALES VOLUMES

Unit: Bcf ¹



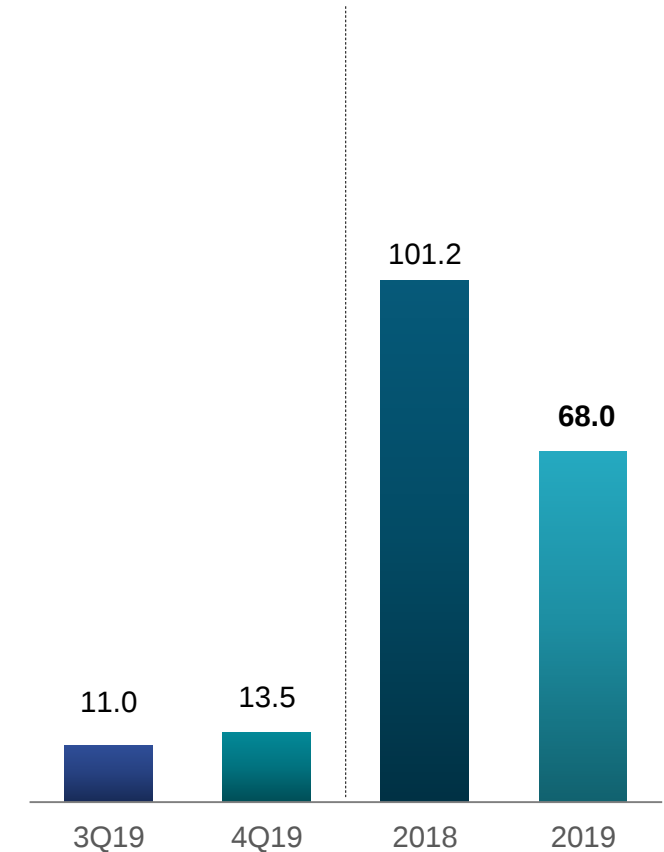
TOTAL REALIZED REVENUE

Unit: US\$M



EBITDA

Unit: US\$M



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Banpu Power 4Q19 and FY19: thermal power



THAILAND

BLCP

Performance affected by planned minor inspection at unit 1 and 2 during 4Q19

- EAF* of 4Q19 reported at 68% from planned minor inspection. FY19 EAF remained strong at 90%
- 4Q19 EBITDA of THB 31 M, -96% QoQ. FY19 EBITDA of THB 4.0 bn
- Reported net loss of THB 159 M in 4Q19 and FY19 profit at THB 840 M, mainly from AP structure decline and planned minor inspection



LAOS

Hongsa

Performance impacted by earthquake in Laos on 21st November 2019

- EAF reported at 67% from earthquake incident. FY19 EAF reported at 81%
- 4Q19 EBITDA of THB 1.8 Bn, -45% QoQ. FY19 EBITDA at THB 11.8 bn
- Profit contribution of THB 212 M in 4Q19, and THB 2.8 bn for FY19
- All 3 units are fully operated since January 2020



CHINA

China CHP

Higher demand in winter and higher production and tariff at Zouping resulted in better performance QoQ

- Reported 4Q19 revenue of THB 1.4 Bn, improved 98% from higher electricity and steam sold. FY19 revenue reported at THB 4.8 bn

SLG

- Construction progress reached 73%
- Expected COD in 2H20 to synchronize with transmission line construction completion

Banpu Power 4Q19 and FY19: renewable power



CHINA

China Solar

Lower irradiation during winter affected the capacity factor and power sold

- 4Q19 capacity factor reported at 12.5%, -3% QoQ. FY19 capacity factor remained at 14.8%, flat YoY
- Power sold reported at 49 GWh, -21% QoQ. FY19 power sold reached 214 GWh, +8% YoY
- Reported revenue of RMB 34 M, -33% QoQ. FY19 revenue increased to RMB 168 M, +15% YoY



JAPAN

Japan Solar

Lower average capacity factor and lower power sold due to seasonally unfavorable weather conditions during winter

- 4Q19 capacity factor reported at 10%, -6% QoQ. FY19 capacity factor increased to 13%, +2% YoY
- Power sold reported at 17 GWh, -35% QoQ. FY19 power sold increased to 89 GWh, +119% YoY from COD of 18.9MW Kurokawa
- Cash contribution of JPY 103 million in 4Q19



VIETNAM

Vietnam Wind

Start phase 1 construction and continue to conduct pre-feasibility study of phase 2 and 3 (remaining 50 MW)

- Ground breaking ceremony for phase 1 construction on 22 Feb 2020
- Due diligence process by potential lender's advisors
- Submitted of pre-feasibility study of phase 2
- PPA agreement with EVN is finalized and to be signed first week of March

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Energy Technology: 2019 highlights

SOLAR FARMS



68_{MW}

+51 MW
operating across Asia

SOLAR ROOFTOP



109_{MW}

+33 MW
operating across Southeast Asia and Taiwan

ENERGY STORAGE SYSTEMS



0.5_{GWh}

+440 MWh
lithium-ion battery
production capacity
(1.0GWh in 100% basis)

ELECTRIC VEHICLES



0.3_{M km/year}

and 100 EVs sold
EV tuk tuk service provided
and EV sale

SMART CITIES



4_{projects}

+3 projects
across Thailand

INVESTMENTS



38.5% shareholding in Sunseap



100% shareholding in
Banpu Infinergy
38.5% shareholding in Sunseap



47.7% stake in Durapower



30.7% shareholding in
Urban Mobility Tech,
21.5% shareholding in FOMM



100% shareholding in
Banpu Infinergy

PARTNERS



Energy Technology: update



SOLAR ROOFTOP

1.7 MW solar rooftop projects secured

- Banpu Infinergy secured 2 solar rooftop projects in Thailand with total capacity of **1.7 MW** including:
 - 1.61 MW at Rayong Star
 - 122 kW at Boat Pattana, a Phuket smart city pilot project
- Banpu Infinergy's solar rooftop portfolio in Thailand reached **17 MW**, with total aggregated portfolio of over **109 MW** across Asia-Pacific



ELECTRIC VEHICLES

Partnership with Thailand Post for EV fleet management

- First provider of '**Integrated electric vehicle fleet management**' for Freight-Parcel Postage service
- Project aims to benefit from over **1,000 electric postal vehicles within 4 years**
- Customize the strengths as one stop service provider, offering consultation and EV procurement to after sale service with best quality
- Continues to offer more variety of EVs suitable for Thailand Post operations such as electric-tricycles, e-trucks and e-trolleys



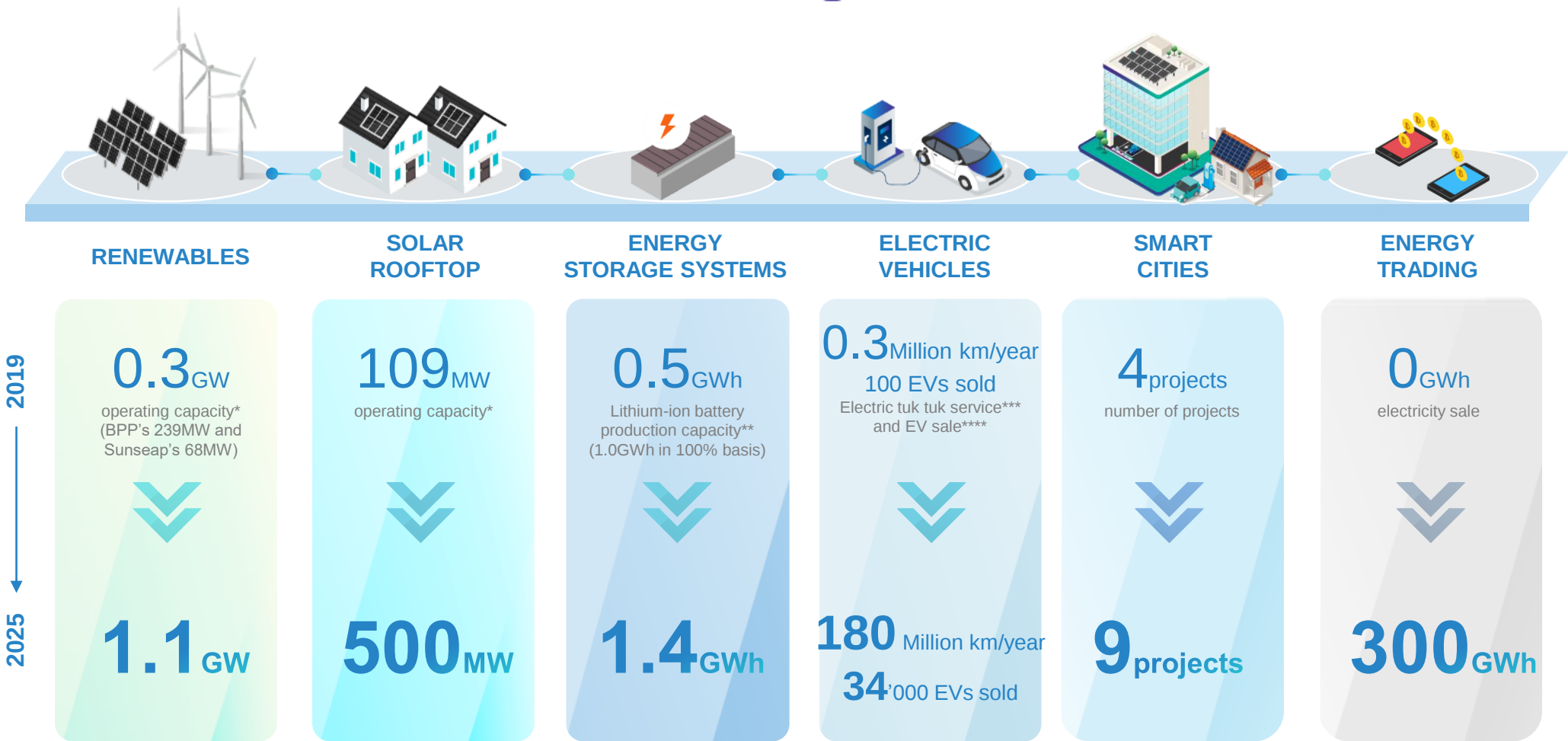
GREEN FINANCING

Secured green financing from UOB's U-Solar program

- Banpu in collaboration with UOB will support transition to clean energy in Thailand under U-Solar program with maximum credit of **THB45 M for contractors**
- U-Solar offers a range of financial solutions in support of the solar power value chain from project developers, contractors to end-users

Banpu NEXT: growth targets 2025

BANPU NEXT



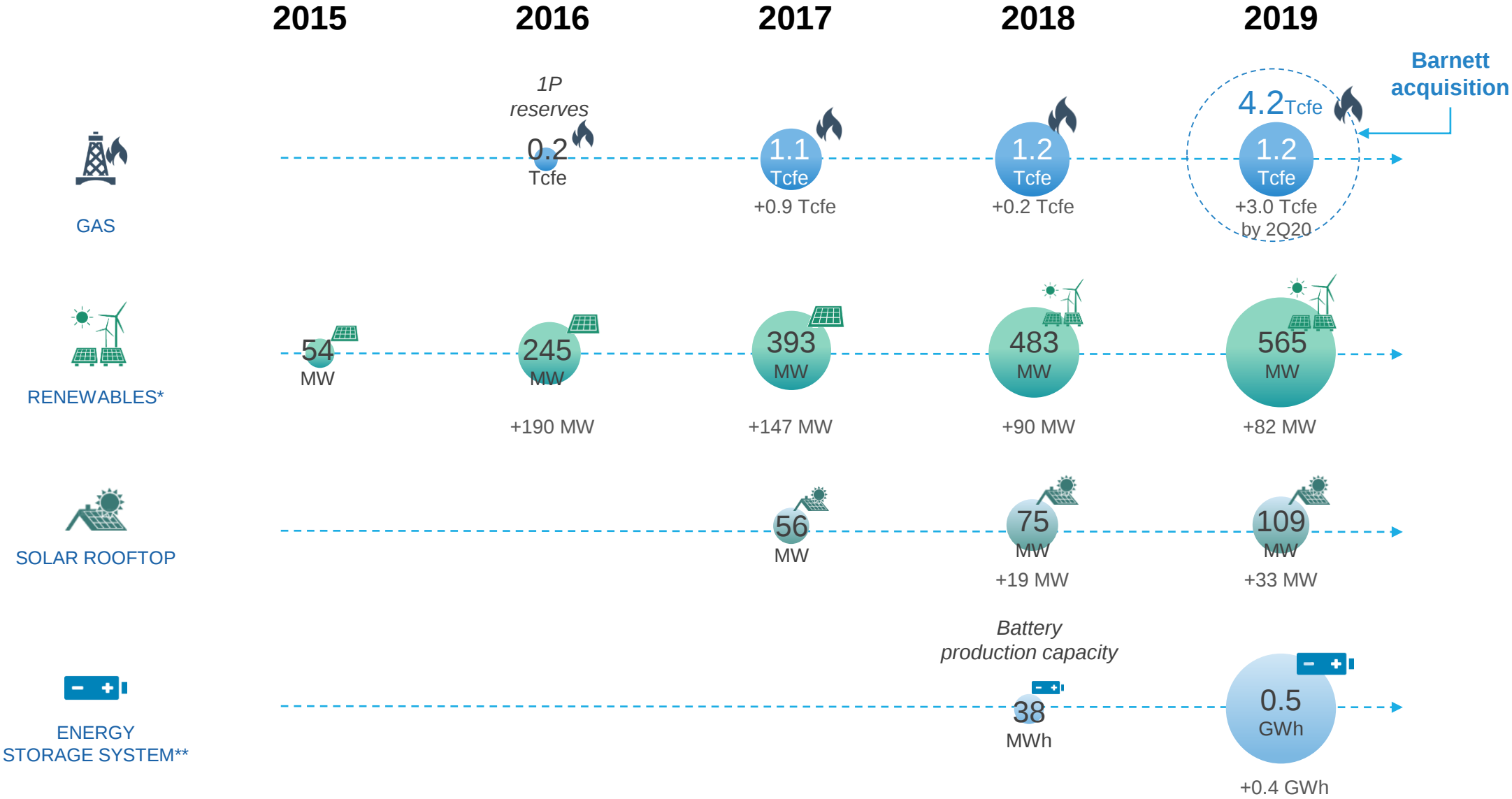
Note: *Capacity based on Banpu Power's equity capacity and Banpu's 38.5% shareholding in Sunseap, **Based on Banpu's 47.7% shareholding in Durapower, *** Based on Banpu's 30.7% shareholding in UMT, ****Based on Banpu's 21.5% shareholding in FOMM

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Key takeaways

	 Energy Resources	 Energy Generation	 Energy Technology
	Establishment of BANPUNEXT		
2019	- Barnett acquired during low asset price window - Banpu becomes a Top 20 US gas producer - Gaohe contribution remained strong (stable domestic coal prices) - CEY impacted by mining conditions, but ASP stable (domestic prices)	71MWe COD achieved with additional 31 MW solar capacity - SLG >70% completion - Consistent performance from China CHP - Earthquake in Laos: major maintenance at Hongsa's unit 1 earlier than plan	- Installed 33 MW solar rooftop across Southeast Asia +440 MWh (equity) battery production capacity ramp up - First provider of Integrated EV fleet management service - Secured 3 new smart city projects in Thailand
2020 & Beyond	- Gas – focus on integration and value creation of new assets - Coal – limited impact from COVID-19 so far, prepare to adjust according to market situation	- Contribution from additional 451MWe target COD in 2020 - No major maintenance for Hongsa plant in 1H20 - Evaluate new gas-fired investment - Grow renewables and energy tech through Banpu NEXT	- Expand around current geographic presence - Seek partnership with leading energy technology institutions - Secure green financing - Explore new business model ventures along value-chain

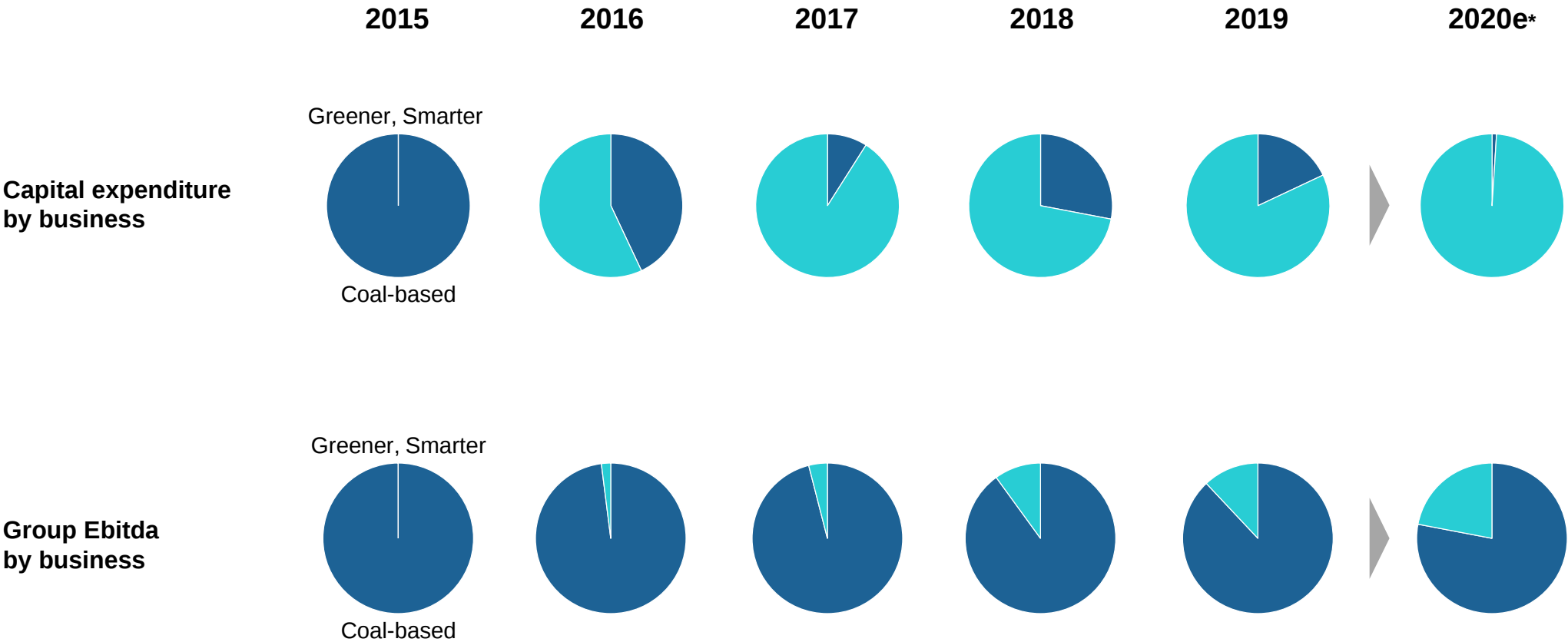
Greener & Smarter: 2015-2019



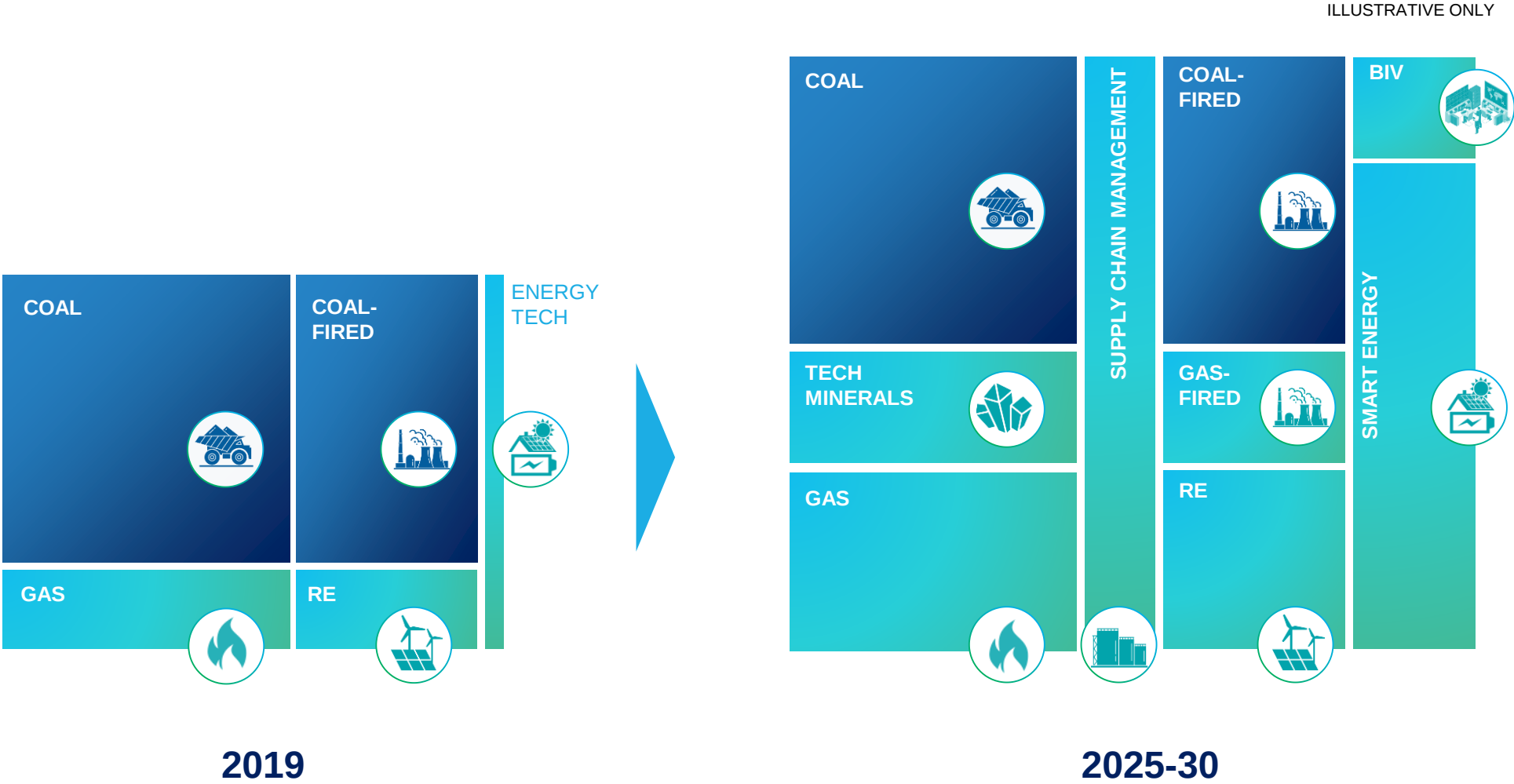
Note: *Capacity based on Banpu Power's equity capacity and Banpu's 38.5% shareholding in Sunseap, **Based on Banpu's 47.7% shareholding in Durapower

Capex and Ebitda: Greener & Smarter transition 2015-20e

*Illustrative target

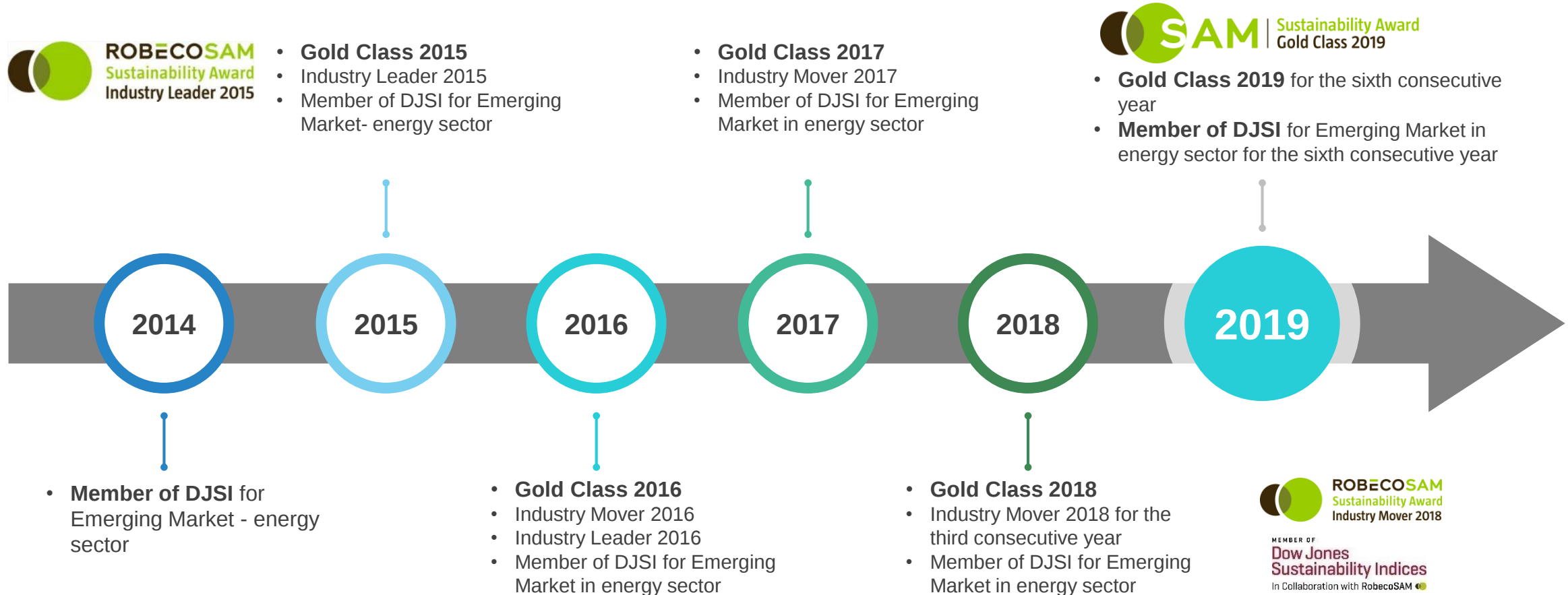


Delivering the transformation...



...with continued emphasis on ESG performance

6 CONSECUTIVE YEARS OF GLOBAL ESG LEADERSHIP



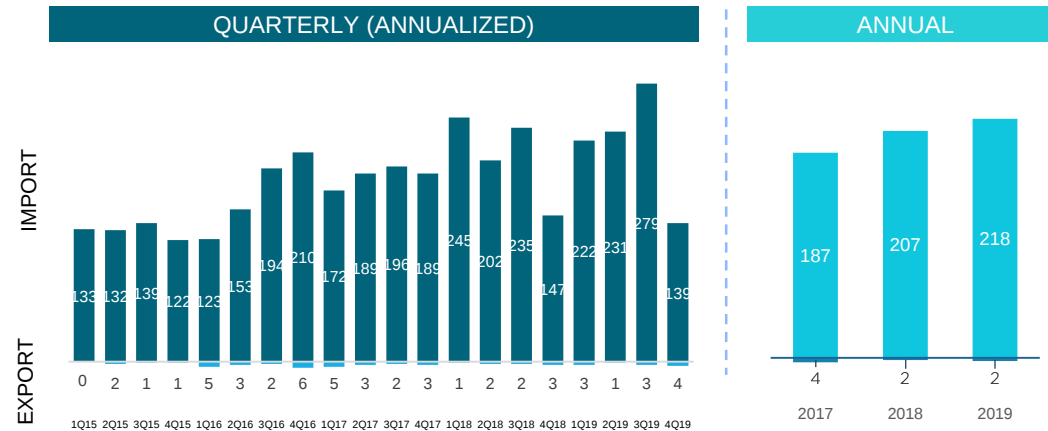
GOLD CLASS: Within each industry, companies with a minimum total score of 60 and whose score is within 1% of the top performing company's score in their industry receive the SAM Gold Class award

APPENDIX

China: strictly import control hampered coal import in Q4

CHINA THERMAL COAL IMPORTS/EXPORTS*

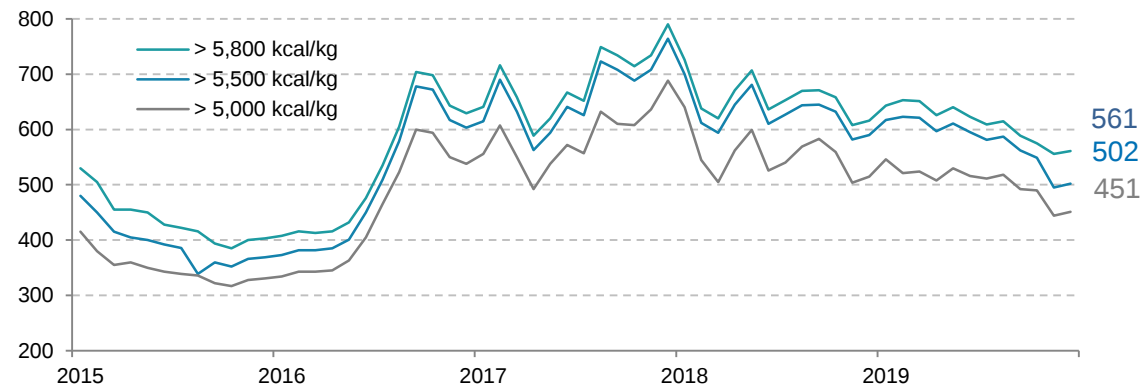
Unit: Mt



Sources: Banpu MS&L

CHINA DOMESTIC COAL PRICES

Unit: RMB/t



4Q19

- Strictly import controls resulted in a significant cut coal imports in Q4 2019 although imported coal remained competitive in the coastal area.
- Domestic coal prices declined on weak demand and improved domestic supply.
- Domestic coal production continued improve despite a series of mine accidents.
- High inventory limited spot demand
- Chinese coal market is shifting to oversupply.
- Tighten import control were limited impacts to international market.

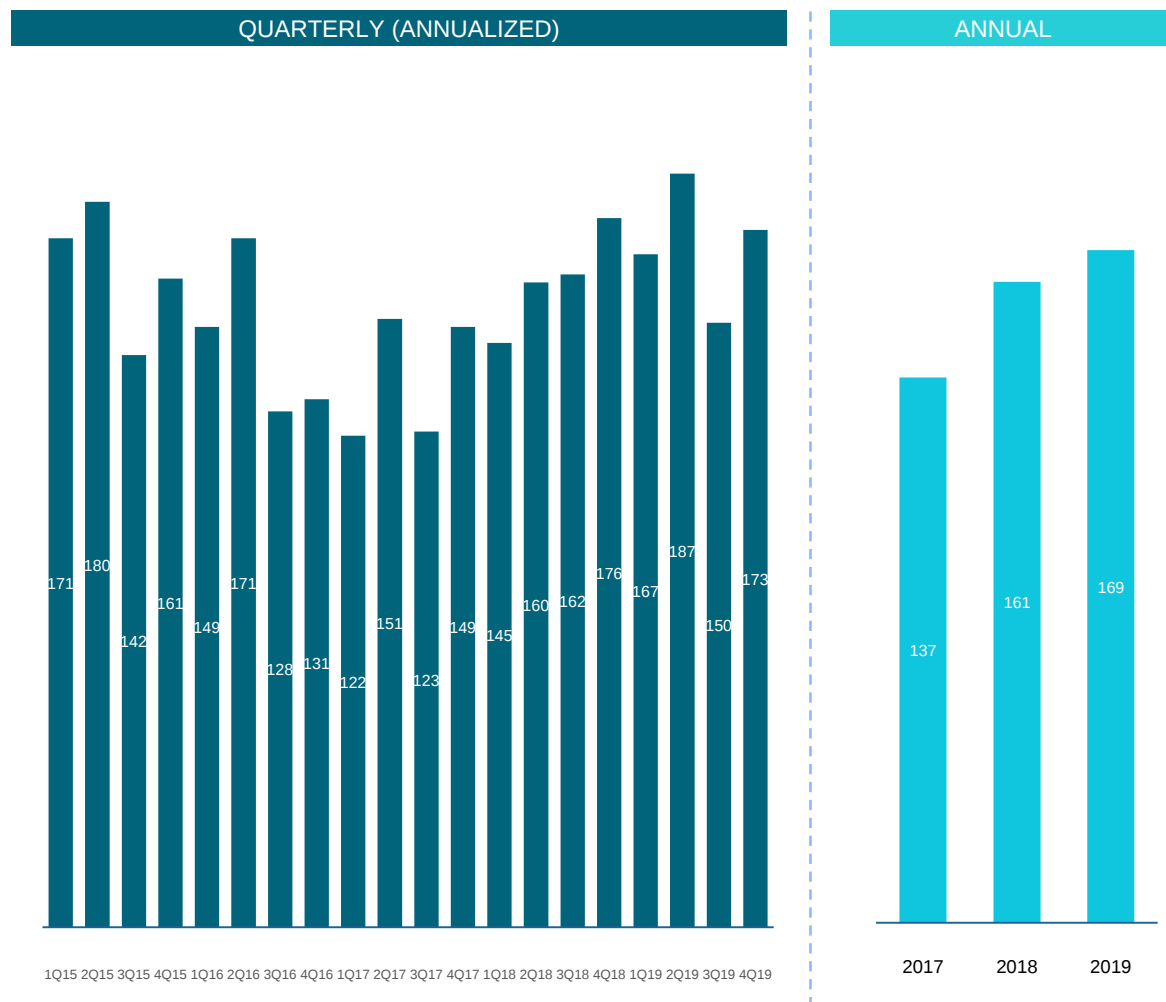
Outlook

- Coronavirus outbreak could slow economic growth in 2020, February would be the big hit.
- Implementation of various controls against the spread of Coronavirus including public holiday extension and travel bans would hurt thermal coal demand and domestic coal production.
- Extended resuming of coal mines tighten domestic supply and push traders and users rush to the international market to secure coal and drive coal prices up.
- Impact to global coal prices is likely to be short-term as demand also recover slowly.
- Expect economic stimulus later in the year.

India: signs of economic recovery

INDIA THERMAL COAL IMPORTS*

Unit: Mt



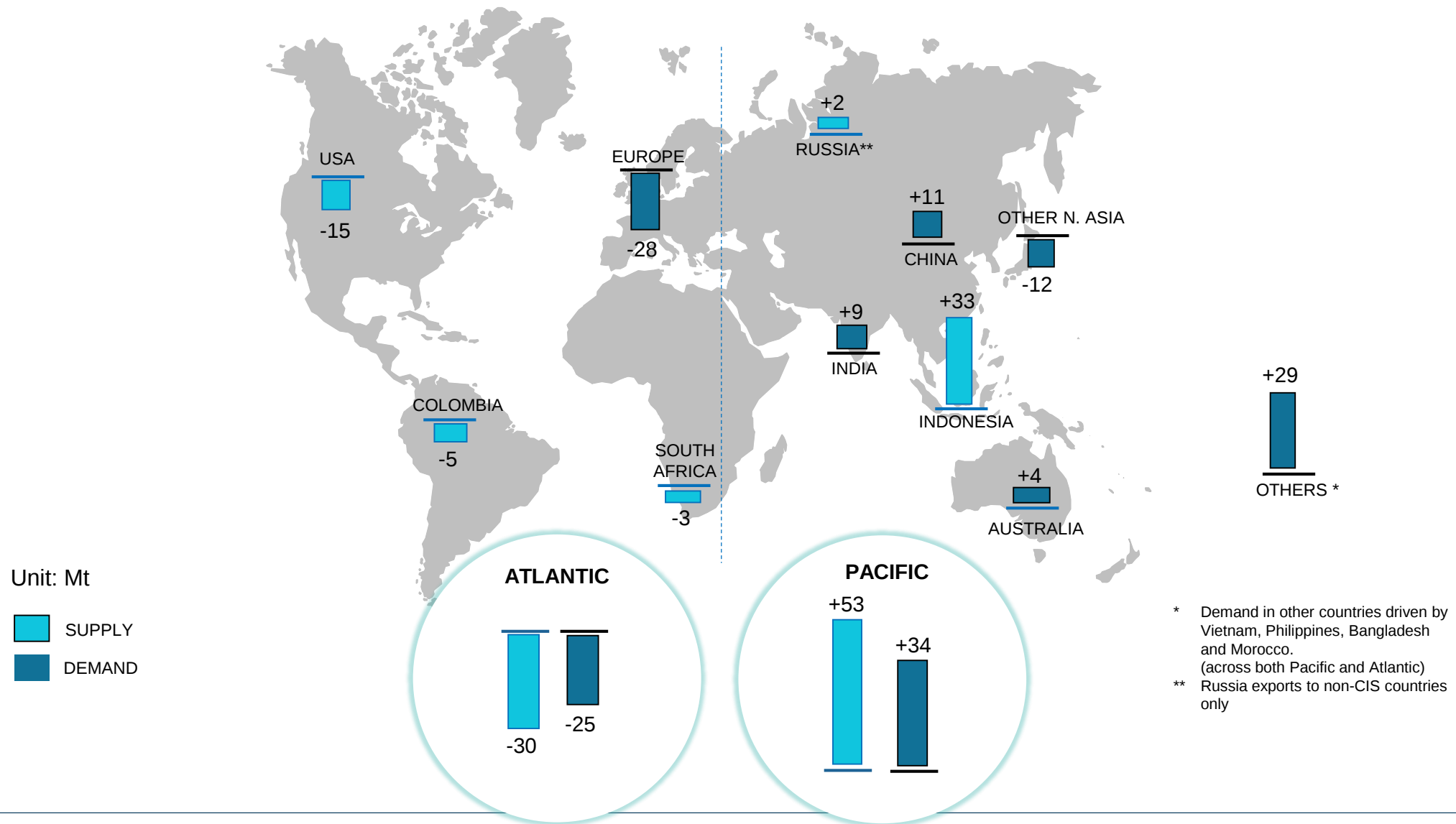
4Q19

- GDP growth dropped to 4.3% in Q4 2019 due to tepid consumer demand, liquidity issues in financial market and muted corporate investments.
- Total power generation declined 7% in Q4 2019 while higher nuclear and hydro generations resulted in 12% declining in coal generation.
- Coal production down by 4.6% in Q4 2019 but mine stocks and power plant stocks increased due to low consumption.
- Domestic coal surplus resulted in Coal India offered more tonnage in spot market.
- However, imports remained steady as imported coal-based power plants continued to generate more electricity.

Outlook

- Power generation is expected to recover in Q1 2020 as government announced measures to improve economy include lowering interest and corporate tax rates, improving liquidity and reviving housing sector.
- Improving domestic coal production will increase stocks at mines and power plants in Q1 2020.
- Despite high domestic supply we expect thermal coal import will remain flat on the year in Q1 as imported-coal plants will also have benefits from recovery of power demand.

Regional thermal coal market: 2019 vs 2018



Coal quarterly output summary

AUSTRALIA OPERATIONS: COAL OUTPUT (MT) – ROM OUTPUT ON EQUITY BASIS					
Mines	CV (kcal/kg)*	4Q18	3Q19	4Q19	1Q20e
Western operations		1.0	1.0	1.0	1.6
Springvale	6,700	0.3	0.1	0.3	0.8
Clarence	6,700	0.4	0.5	0.3	0.5
Airly	6,700	0.3	0.4	0.4	0.3
Northern operations		2.4	1.8	1.4	1.8
Mandalong	6,700	1.9	1.3	1.1	1.3
Myuna	6,700	0.5	0.5	0.3	0.5
Total Australia coal		3.4	2.8	2.4	3.4

INDONESIA OPERATIONS: COAL OUTPUT (MT) – ROM OUTPUT ON 100% BASIS									
Mines	CV (kcal/kg)*	4Q18		3Q19		4Q19		1Q20e	
		Output (Mt)	Strip ratios (bcm/t)	Output (Mt)	Strip ratios (bcm/t)	Output (Mt)	Strip ratios (bcm/t)	Output (Mt)	Strip ratios (bcm/t)
Indominco – West block	5,950 – 6,250	0.5	17.1	0.5	22.7	0.5	12.8	0.6	13.2
Indominco – East block		3.4	9.7	2.8	7.5	2.1	9.6	1.6	9.1
Trubaindo	6,550 – 6,700	1.3	11.1	1.5	10.8	1.2	9.5	1.0	11.4
Bharinto		0.7	10.2	1.0	8.4	0.7	8.2	0.7	9.9
Kitadin-Embalut	5,800	0.2	12.8	0.4	8.6	0.3	8.1	0.2	16.9
Jorong	5,300	0.3	6.5	0.5	6.7	0.5	6.0	0.3	9.5
Total Indonesia coal		6.4	10.5	6.8	9.5	5.3	9.3	4.4	10.7

CHINA OPERATIONS: COAL OUTPUT (MT) – ROM OUTPUT ON 100% BASIS					
Mines	CV (kcal/kg)*	4Q18	3Q19	4Q19	1Q20e
Gaohe		2.7	2.6	2.6	2.0
Hebi		0.3	0.4	0.4	0.3
Total China coal		3.0	3.0	3.0	2.3

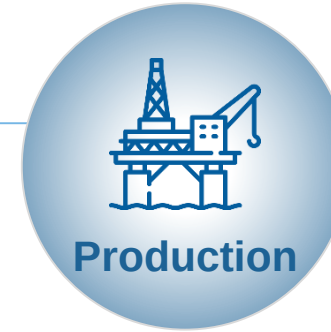
Natural gas : reserve and production term



Reserve

DEFINITION

- Natural Gas Reserve Definitions in the US are defined by the SEC and are the same as used for oil:
 - Proved Developed Producing (PDP)
 - Proved Developed Not Producing (PDNP)
 - Proved Undeveloped (adjacent to a producing well) (PUD)
 - Probable (in the same area as production but not adjacent) (PROB)
 - Possible (contingent on additional drilling) (POSS)
- Reserves have to be economically viable.



Production

PRODUCTION UNIT

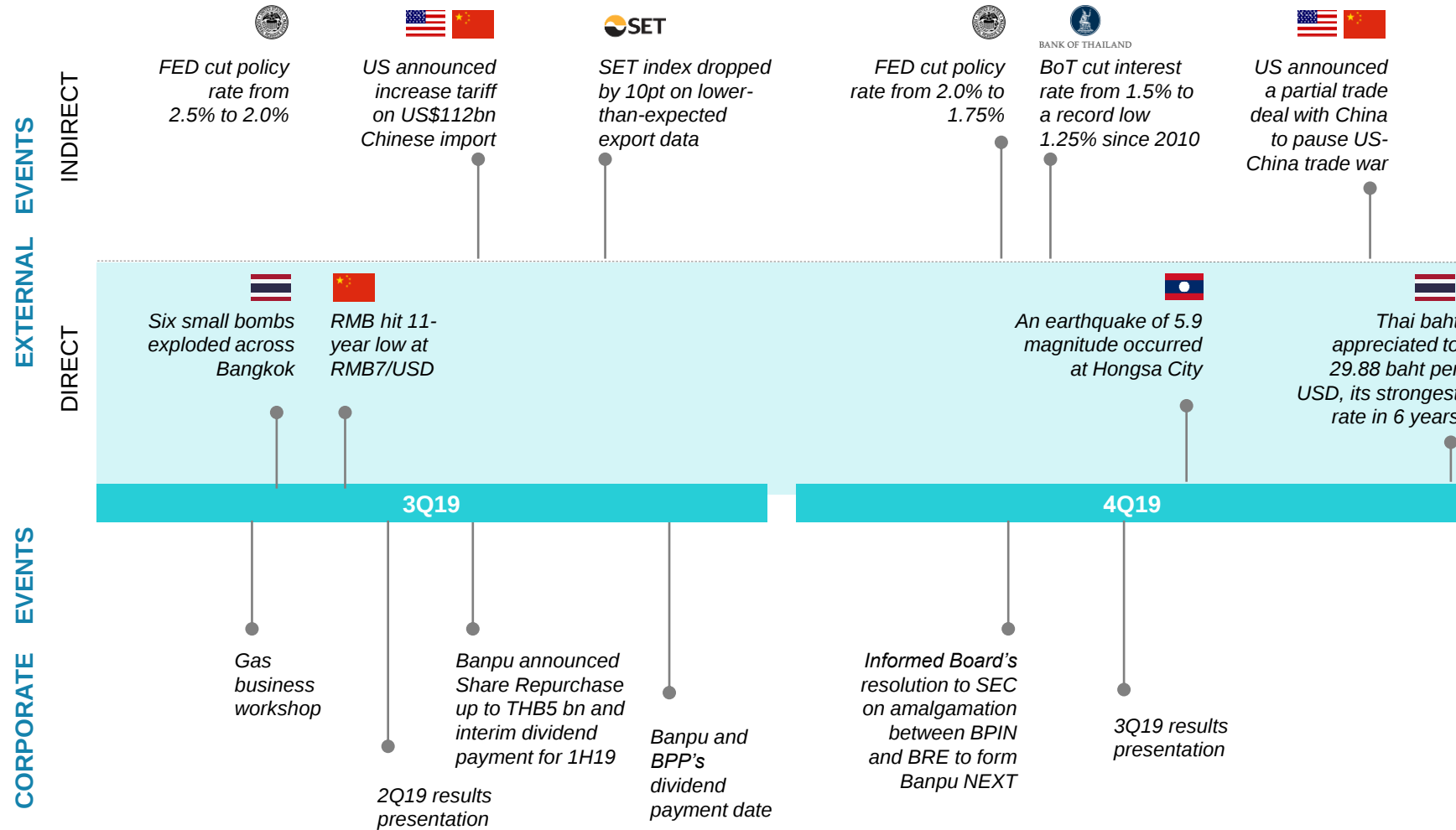
- In the US, production is measured in 1000 cubic feet (MCF)
 - 1000 MCF = 1 MMCF
 - 1,000,000 MCF = 1 BCF
 - 1000 BCF = 1 TCF
 - 1 MCF = 28.3 Meters³
 - 1 MCF = 1.0 Million BTU (MMBTU) or Decatherms (dry gas)
 - 1 BCF = 1.0 Trillion BTU
 - 1 Meter³ = 35.3 MCF
 - 1 Billion Meters³ = 35.3 BCF

2020 indicative guidance (Marcellus)

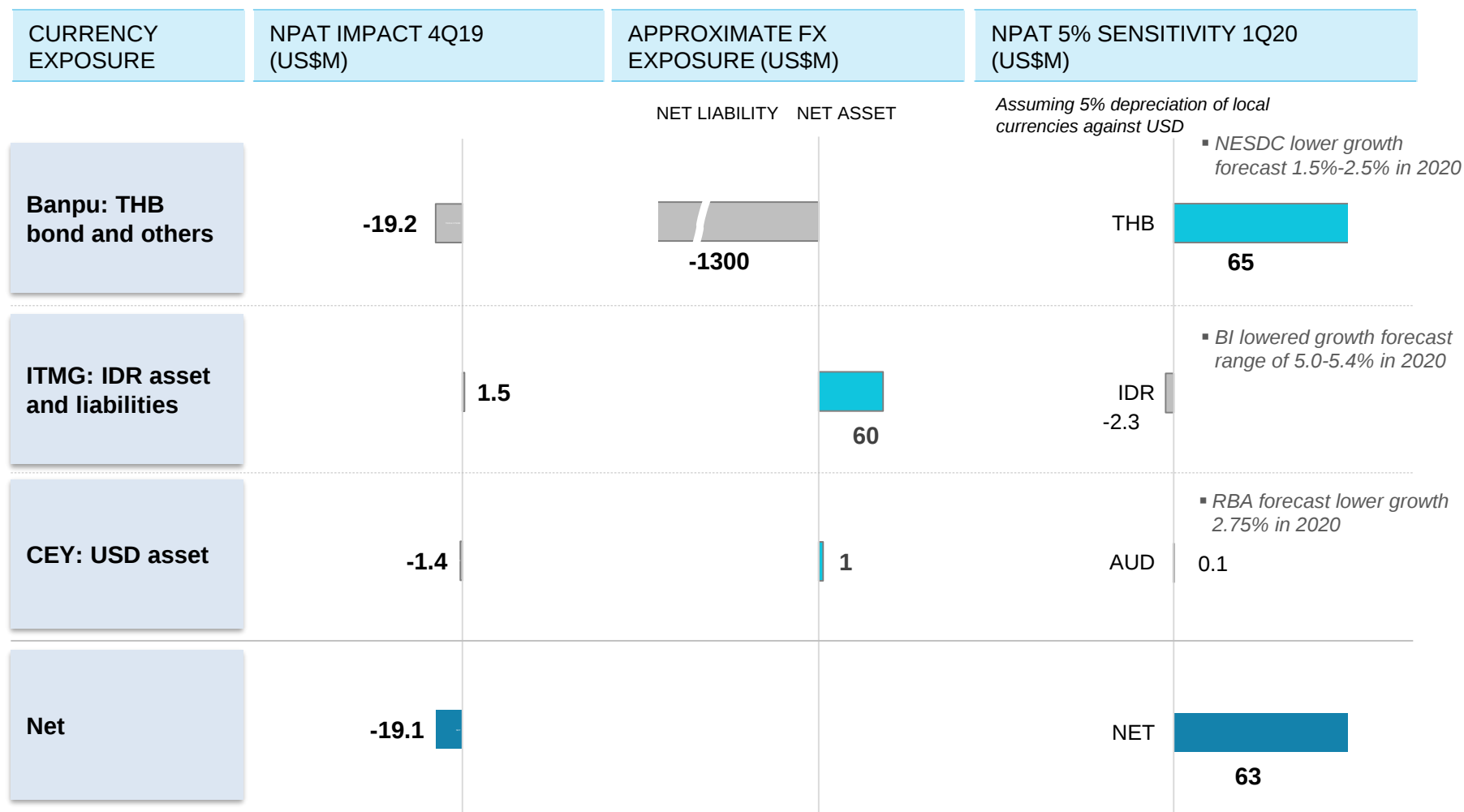
ILLUSTRATIVE AND INDICATIVE ONLY

UNIT GUIDANCE (US\$/MCF)			COMMENTS
REVENUE			
<i>Reserves (Bcf)</i>	<i>1,250</i>		
<i>Production volume (Mmcfd)</i>	<i>190-250</i>		
NET BACK	Average differential to Henry Hub	\$0.20 - \$0.50	Difference selling points and Henry Hub (NYMEX basis)
	G&C costs	\$0.40 - \$0.70	Gathering and compression costs (to intrastate pipelines)
	Transportation	\$0.20	
	Pipeline revenue	\$0.10 - \$0.15	Applicable to Chaffee Corners volume only
COSTS			
	Lease operating costs	\$0.20 - \$0.30	Main component of operating costs
	G&A	\$0.25 - \$0.35	General and administration costs
	Taxes	21%	Currently benefit from tax shield due to accelerated DD&A
	DD&A	\$0.80 - \$0.90	Depreciation, depletion and amortization
	Drilling and completion costs	\$0.80 - \$1.20	Costs incurred to drill and to make the well ready for production

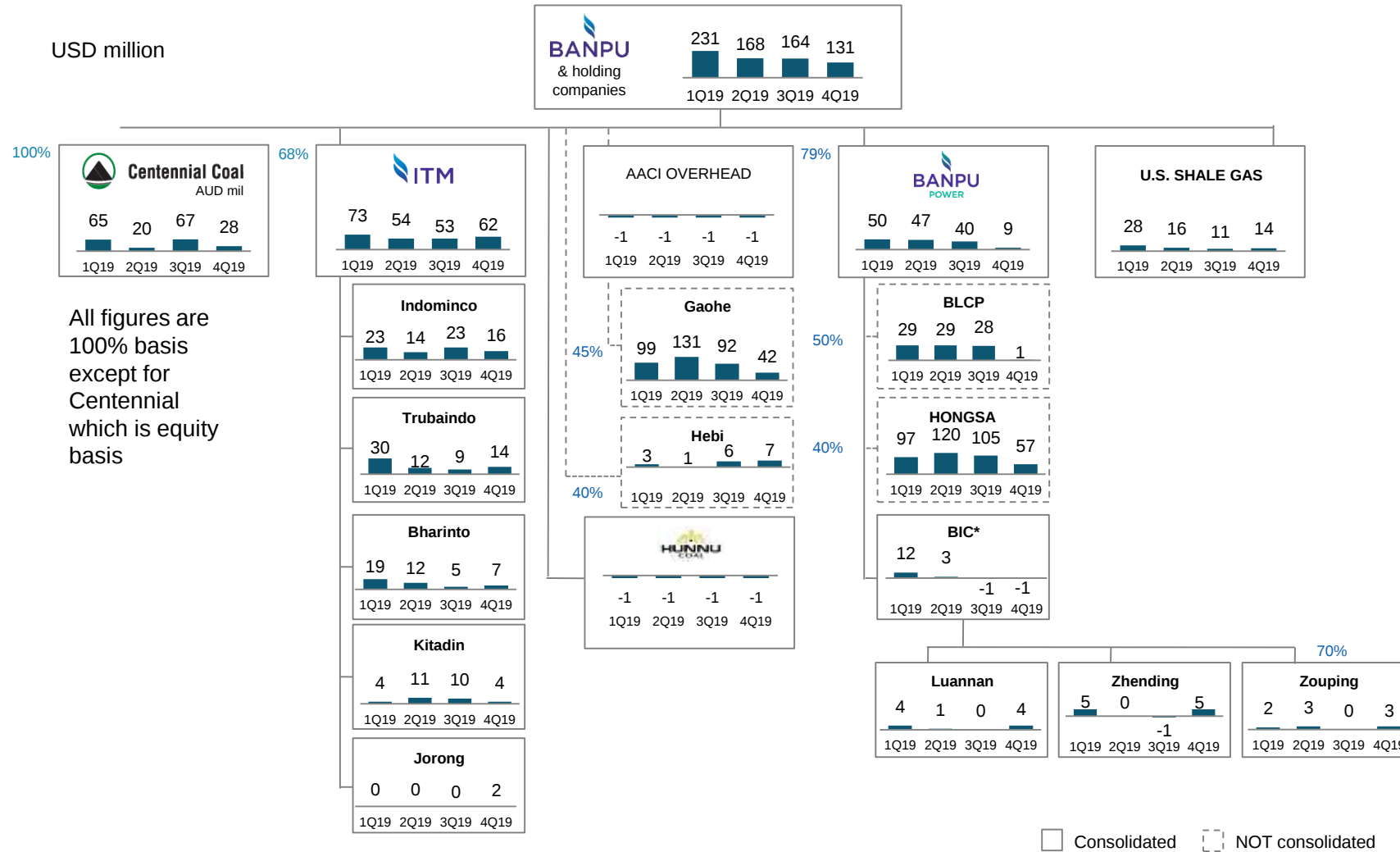
Key external and corporate events



Fx impact analysis guidance on P&L



Banpu group EBITDA breakdown



Banpu group net debt breakdown

USD million



Banpu consolidated : operating profit

USD million	2019	2018	YoY%
Total sales revenues*	2,759	3,481	-21%
Sales revenue – Coal	2,381	3,020	-21%
Sales revenue – Gas	105	144	-27%
Sales revenue – Power	183	196	-7%
Cost of sales	(2,051)	(2,253)	
Gross Profit*	708	1,228	-42%
Gross profit – Coal	627	1,103	-43%
Gross profit – Gas	32	68	-53%
Gross profit – Power	35	41	-15%
GPM	26%	35%	
<i>GPM – Coal</i>	<i>26%</i>	<i>37%</i>	
<i>GPM – Gas</i>	<i>31%</i>	<i>47%</i>	
<i>GPM – Power</i>	<i>19%</i>	<i>21%</i>	

Banpu consolidated : operating profit

USD million	2019	2018	YoY%
Gross Profit	708	1,228	-42%
GPM	26%	35%	
SG&A	(376)	(343)	
Royalty	(241)	(291)	
Income from associates	206	264	
Other income and Dividend	81	33	
Mining property	(29)	(40)	
EBIT	349	852	-59%
EBIT – Coal	210	642	-67%
EBIT – Gas	12	46	-74%
EBIT – Power	127	164	-23%
EBITDA	695	1,178	-41%
EBITDA – Coal	482	895	-46%
EBITDA – Gas	68	101	-33%
EBITDA – Power	145	182	-20%

Banpu consolidated : net profit

USD million	2019	2018	YoY%
EBIT	349	852	-59%
Interest expenses	(182)	(170)	
Financial expenses	(5)	(5)	
Income tax (core business)	(98)	(121)	
Minorities	(61)	(109)	
Net profit before extra items	2	447	-100%
Non-recurring items*	18	(91)	
Gain (Loss) on Derivatives Transactions	33	(63)	
Income tax (non - core business)	(19)	(23)	
Deferred tax income (expenses)	41	(46)	
Net profit before FX	75	224	-66%
FX translation	(95)	(19)	
Net Profit	(20)	205	n.a.
EPS (US\$/share)	(0.004)	0.040	

Banpu consolidated : operating profit

USD million	4Q19	3Q19	4Q18	QoQ%	YoY%
Total sales revenues*	675	654	1,003	3%	-33%
Sales revenue – Coal	575	586	879	-2%	-35%
Sales revenue – Gas	24	20	43	18%	-45%
Sales revenue – Power	55	31	52	76%	6%
Cost of sales	(493)	(483)	(655)		
Gross Profit*	183	171	348	7%	-48%
Gross profit – Coal	161	160	311	1%	-48%
Gross profit – Gas	5	0	23	n.a.	-76%
Gross profit – Power	12	3	12	256%	-1%
GPM	27%	26%	35%		
<i>GPM – Coal</i>	<i>28%</i>	<i>27%</i>	<i>35%</i>		
<i>GPM – Gas</i>	<i>23%</i>	<i>0%</i>	<i>53%</i>		
<i>GPM – Power</i>	<i>21%</i>	<i>10%</i>	<i>23%</i>		

Banpu consolidated : operating profit

USD million	4Q19	3Q19	4Q18	QoQ%	YoY%
Gross Profit	183	171	348	7%	-48%
GPM	27%	26%	35%		
SG&A	(114)	(92)	(99)		
Royalty	(60)	(57)	(85)		
Income from associates	4	63	43		
Other income and Dividend	14	5	16		
Mining property	(9)	(12)	(12)		
EBIT	17	78	212	-78%	-92%
EBIT – Coal	13	48	166	-72%	-92%
EBIT – Gas	(1)	(5)	22	-81%	-104%
EBIT – Power	4	34	24	-87%	-81%
EBITDA	131	164	351	-20%	-63%
EBITDA – Coal	108	114	287	-5%	-62%
EBITDA – Gas	14	11	36	23%	-63%
EBITDA – Power	9	39	28	-76%	-66%

Banpu consolidated : net profit

USD million	4Q19	3Q19	4Q18	QoQ%	YoY%
EBIT	17	78	212	-78%	-92%
Interest expenses	(46)	(45)	(44)		
Financial expenses	(1)	(1)	(0)		
Income tax (core business)	(22)	(29)	(30)		
Minorities	(7)	(16)	(23)		
Net profit before extra items	(59)	(13)	114	n.a.	n.a.
Non-recurring items*	22	(2)	(17)		
Gain (Loss) on Derivatives Transactions	5	13	(28)		
Income tax (non - core business)	(6)	-	(7)		
Deferred tax income (expenses)	10	17	(19)		
Net profit before FX	(29)	15	43	n.a.	n.a.
FX translation	(19)	(18)	2		
Net Profit	(48)	(3)	45	n.a.	n.a.
EPS (US\$/share)	(0.009)	(0.001)	0.009		

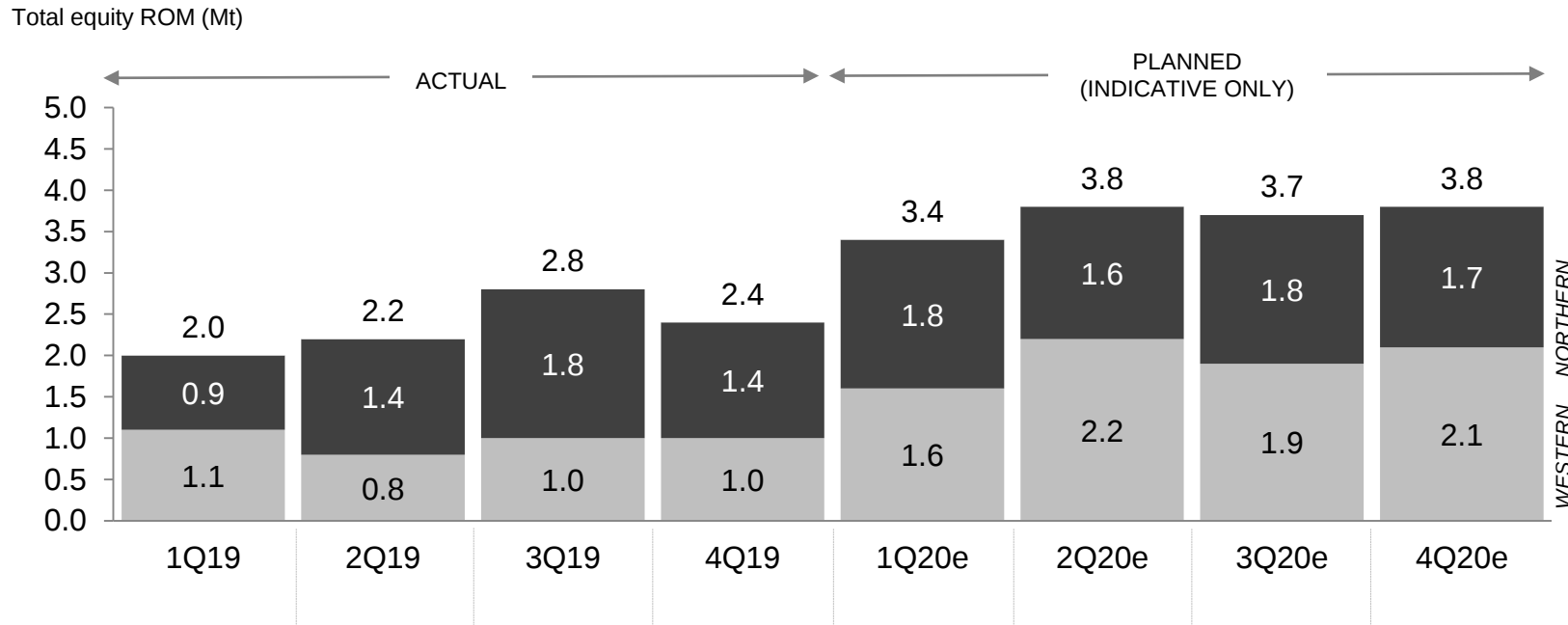
Centennial : Income statement

USD million	2019	2018	YoY%
Sales volume (Mt)	10.6	14.1	-24%
Sales revenue	702.6	1,039.3	-32%
Cost of Sales	(599.4)	(768.3)	
Gross Profit	103.3	270.9	-62%
GPM	15%	26%	
SG&A	(104.9)	(94.4)	
Royalty	(42.6)	(56.3)	
Other income	103.7	12.2	
Other expenses	-	-	
EBIT	59.4	132.4	-55%
Interest expenses	(21.3)	(23.6)	
Financial expenses	(2.0)	(2.5)	
Gain (loss) on exchange rate	(0.8)	3.0	
Gain (loss) on derivative	6.0	(17.3)	
Corporate income tax	1.0	-	
Deferred tax income	(15.9)	(27.6)	
Net Profit	26.2	64.5	-59%

Centennial : Income statement

USD million	4Q19	3Q19	4Q18	QoQ%	YoY%
Sales volume (Mt)	2.9	2.7	3.8	6%	-24%
Sales revenue	183.7	172.2	286.4	7%	-36%
Cost of Sales	(159.4)	(125.2)	(209.1)		
Gross Profit	24.3	46.9	77.3	-48%	-69%
GPM	13%	27%	27%		
SG&A	(31.9)	(23.2)	(24.7)		
Royalty	(10.8)	(11.3)	(15.6)		
Other income	57.8	1.6	6.2		
Other expenses	-	-	-		
EBIT	39.3	14.1	43.1	180%	-9%
Interest expenses	(5.2)	(5.5)	(5.2)		
Financial expenses	(0.4)	(0.5)	1.2		
Gain (loss) on exchange rate	(1.4)	0.3	(0.1)		
Gain (loss) on derivative	1.3	2.3	(5.3)		
Corporate income tax	-	-	-		
Deferred tax income	(12.7)	(3.2)	(10.0)		
Net Profit	20.9	7.4	23.7	181%	-12%

Australia coal: quarterly equity rom output



	2019												2020e											
LW move	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mandalong (100%)																								
Springvale (100%)																								

Normal production
 Bolt-up/commissioning
 LW relocation

Note: 1 Bar width is indicative of the equity production contributions to Centennial

2 Production generally responds to the timing of longwall changeovers (i.e. lower production results during a longwall changeover period)

3 Angus Place was put on care and maintenance from February 2015.

4 As of 1 December 2019, Centennial's economic interest in each of Angus Place and Springvale became 100%.

