BANPU

3Q19 results

Opportunity Day

20th November 2019

BANPU

SAM

Sustainability Award
Gold Class 2019

MEMBER OF
Dow Jones
Sustainability Indices
In Collaboration with RobecoSAM

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

MSCI
ESG RATINGS

CCC	B	BB	BBB	A	AA	AAA

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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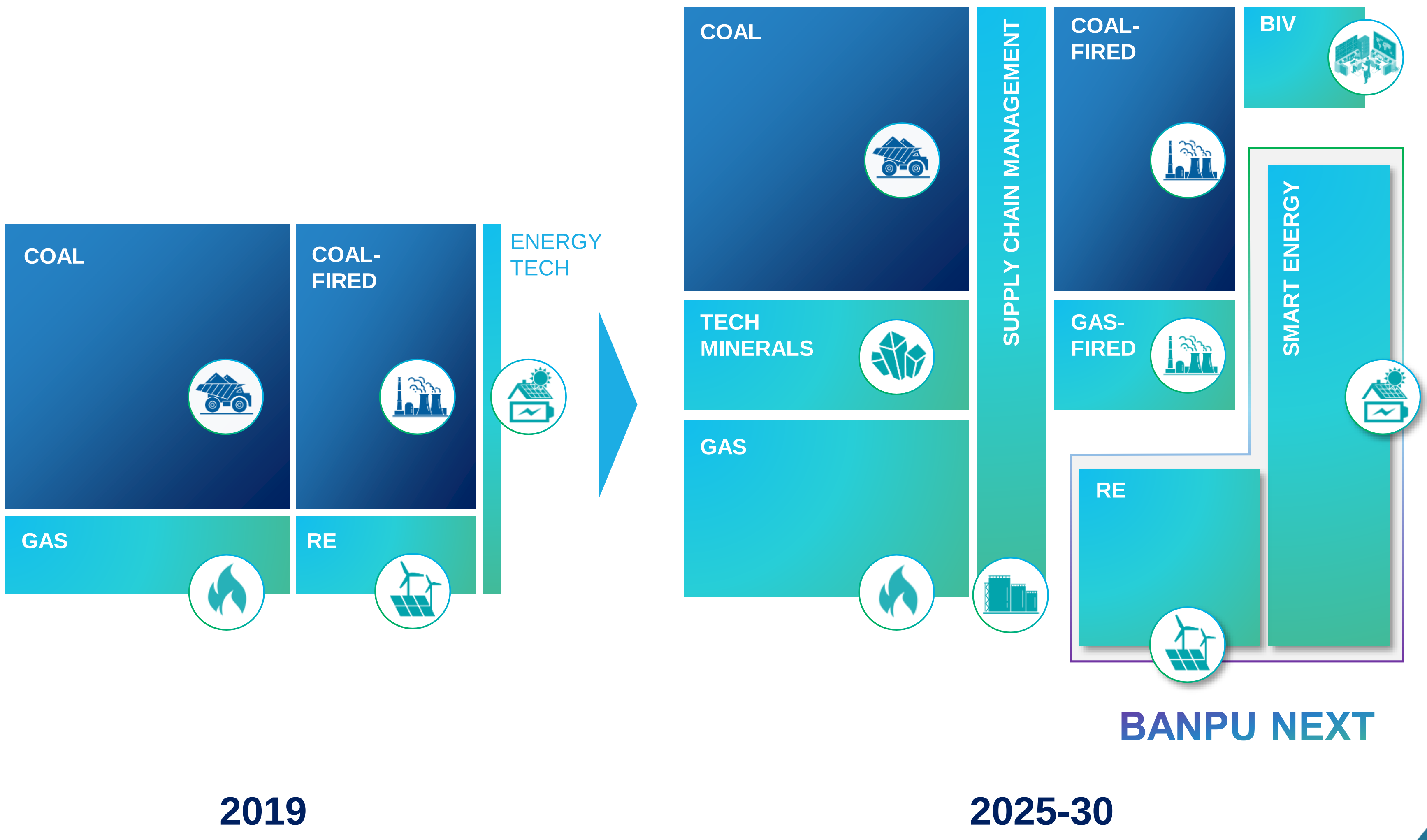
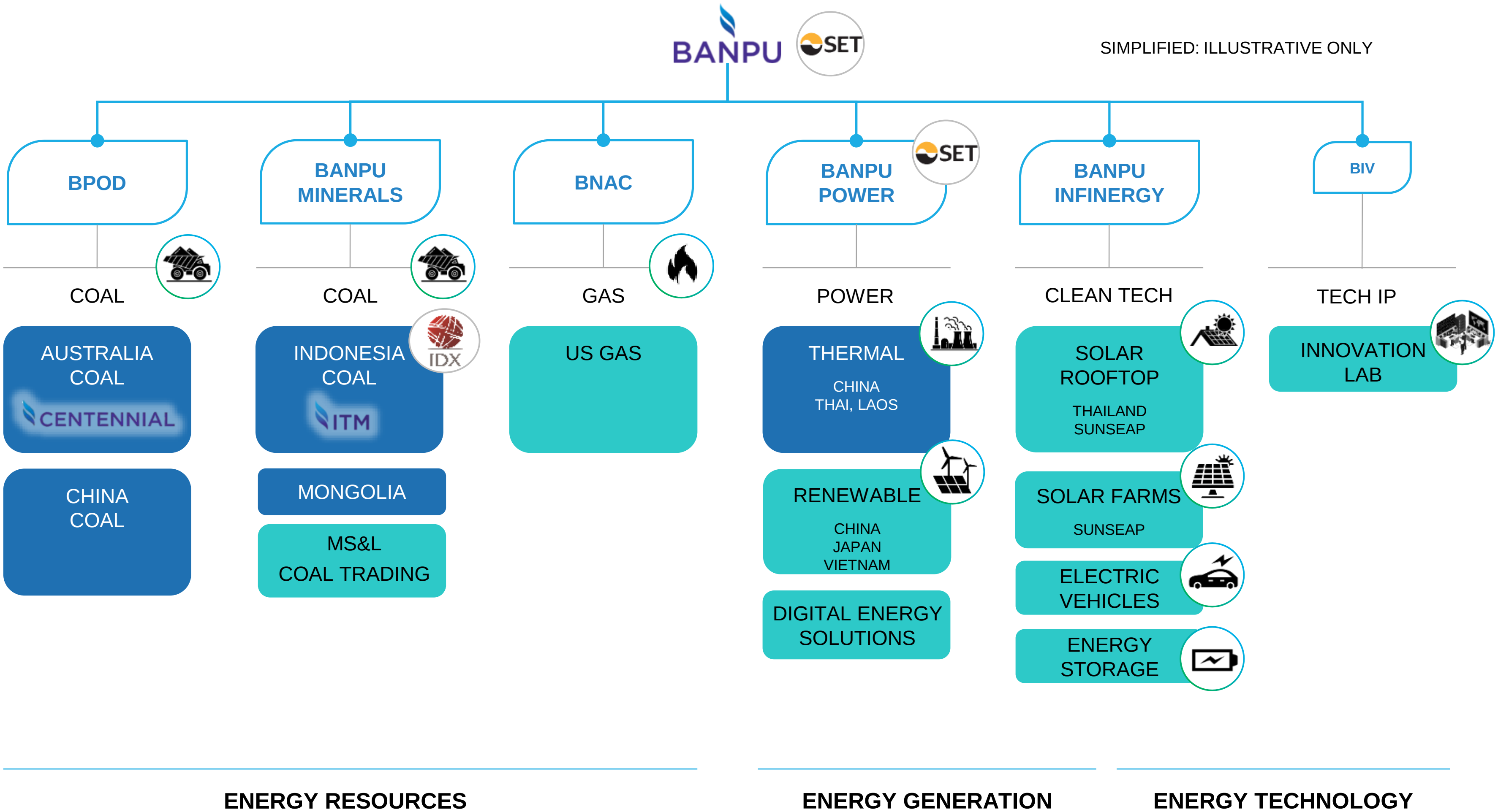
Banpu asset value structure: indicative long term plan

ILLUSTRATIVE ONLY

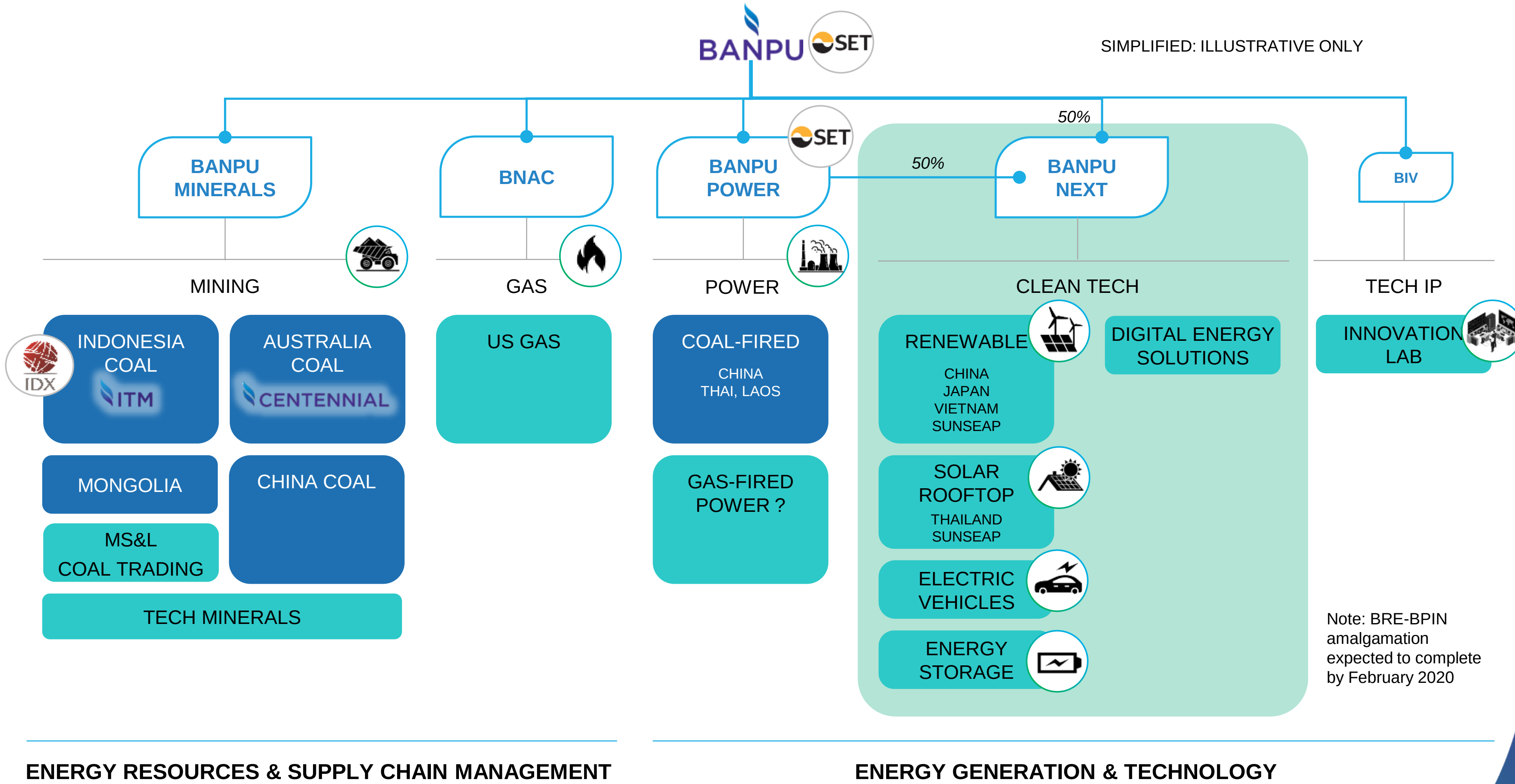


Banpu group structure – current



Conventional   Greener, Smarter

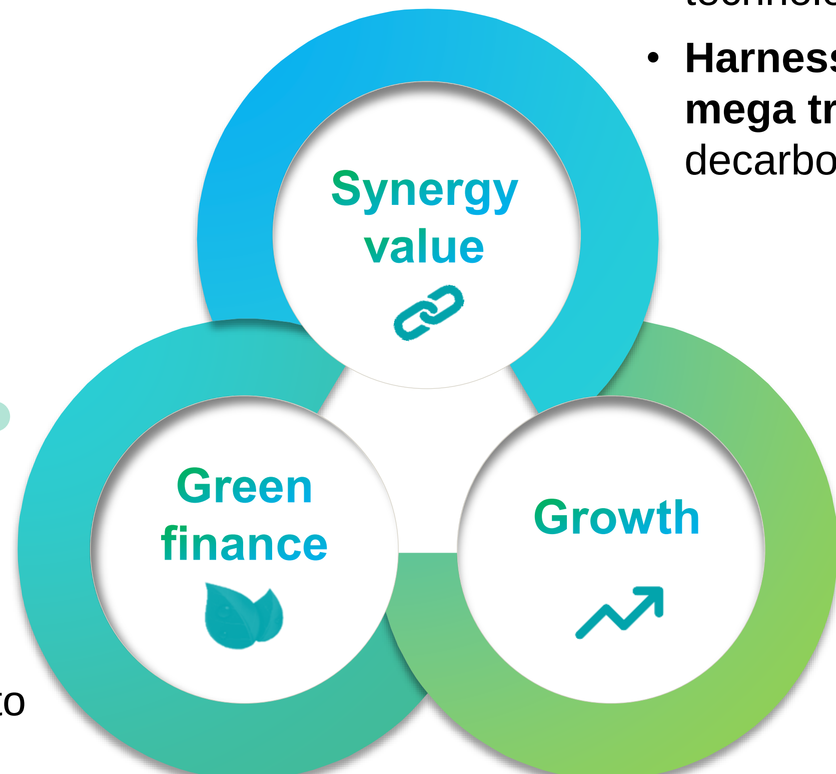
Banpu group structure – new



Conventional   Greener, Smarter

BANPU NEXT: driving the Greener, Smarter transition

- **Capture maximum synergy value** around core clean energy technology themes
- **Harness and leverage the '3D' mega trends**: decentralization, decarbonization, digitalization



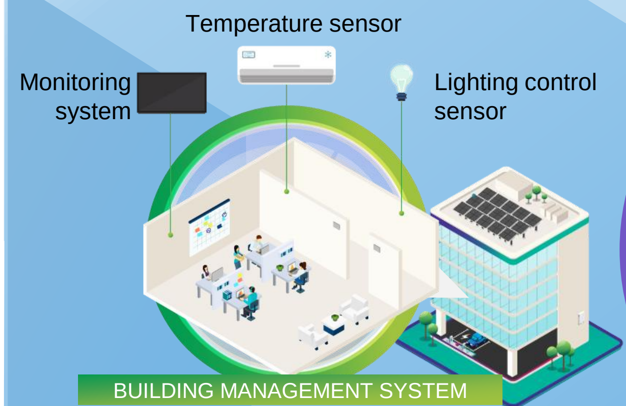
Attract green and clean tech funding to secure the capital needed for the accelerated growth

Develop and implement new business plan to **maximize growth and shareholder returns** with a focused and directly accountable management team

BANPU NEXT: harnessing the 3Ds

Digitalization
of energy solutions

Development of Energy Management Systems, Energy Trading, and eMobility solutions



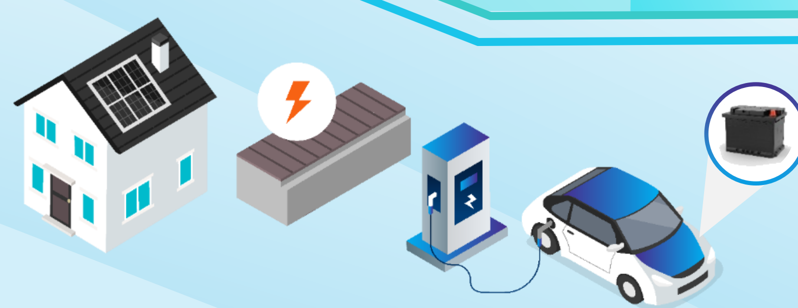
Decarbonization
of energy mix

Portfolio of renewable power plants including solar farms and wind farms

BANPU NEXT 3Ds

Decentralization
of energy products

Driving decentralized energy generation and storage through Solar Rooftop installation, Energy Storage Systems, Electric Vehicles, and Smart City/Campus development

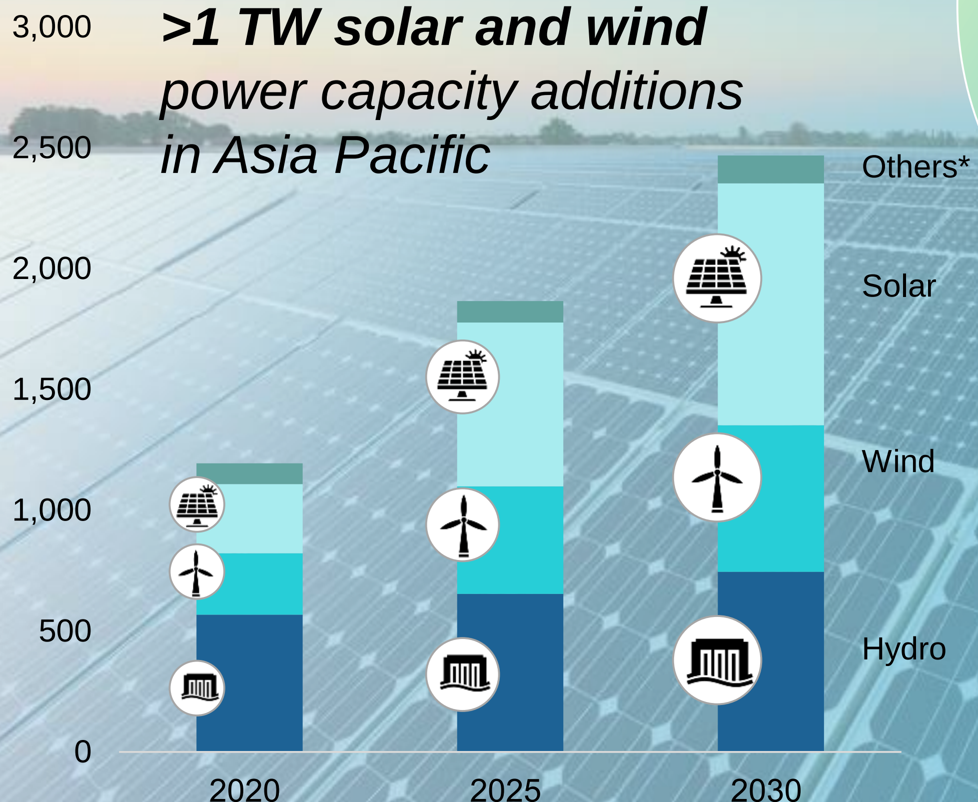


Renewable power generation

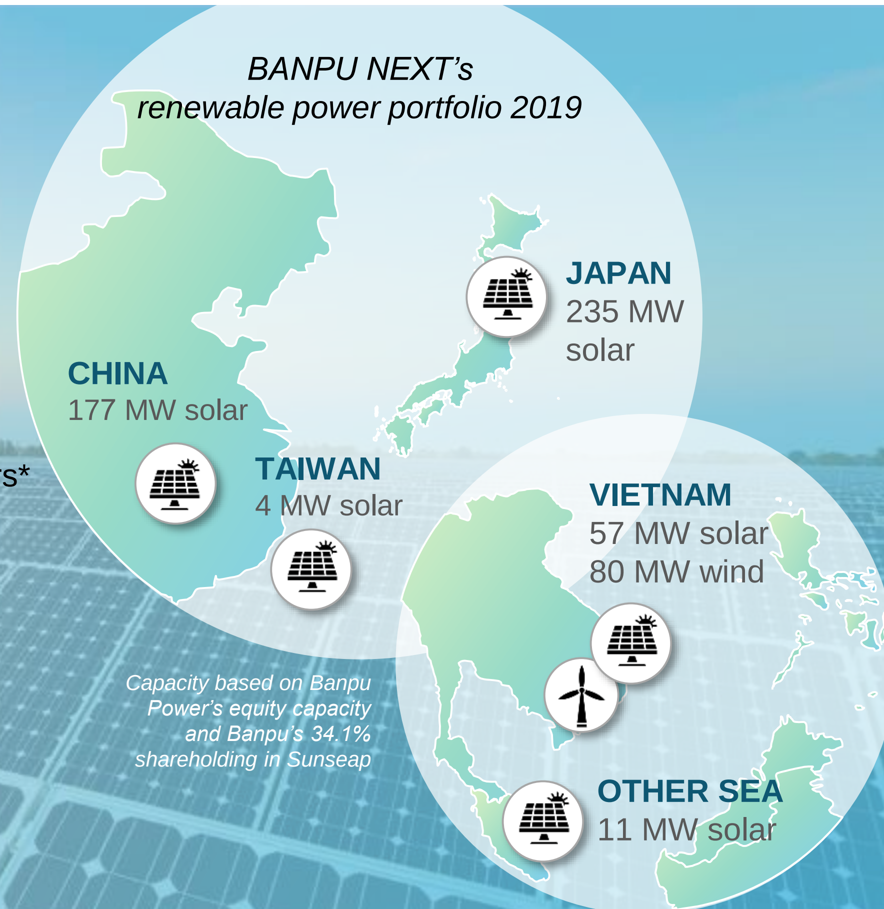
SOLAR AND WIND CONTINUE TO LEAD RENEWABLE POWER CAPACITY ADDITIONS

Asia-Pacific renewable power generation capacity
Unit: GW

***>1 TW solar and wind** power capacity additions in Asia Pacific*



Source New Policies Scenario, World Energy Outlook 2018
Note: *Others include Bioenergy (solid biomass, biofuels and biogas), Geothermal, CSP, and marine



Renewables strategy: actively explore new opportunities in existing countries and beyond

Solar rooftop

POLICIES OPEN OPPORTUNITIES FOR SOLAR ROOFTOP IN SOUTHEAST ASIA

Policy support initiatives:

THAILAND

$0.05/kWh residential solar rooftop FiT for 10 years; target additional capacities from solar rooftop of 10 GW by 2037

VIETNAM

Extended $0.0935/kWh FiT for solar rooftop until 2021; launched solar rooftop promotion program target 1 GW by 2025

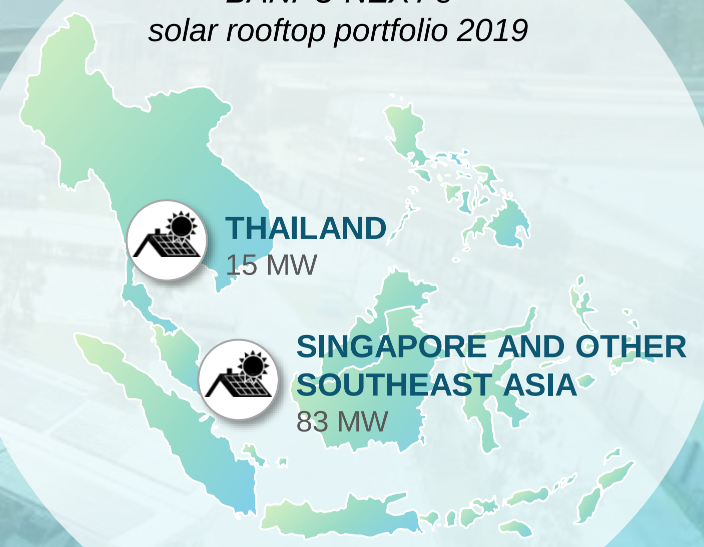
MALAYSIA

Additional 50-100 MW new solar rooftop capacity annually from 2020; new PPA model to help de-risk solar rooftop projects

PHILIPPINES

Solar rooftop capacity to increase after 2020 from falling costs; mandated market to procure minimum portion of supply from renewables*

BANPU NEXT's solar rooftop portfolio 2019



Capacity based on Banpu Infinergy's capacity and Banpu's 34.1% shareholding in Sunseap

Solar rooftop strategy: expand portfolio in Asia Pacific by leveraging team's expert system design, high-standard installation and advanced technologies

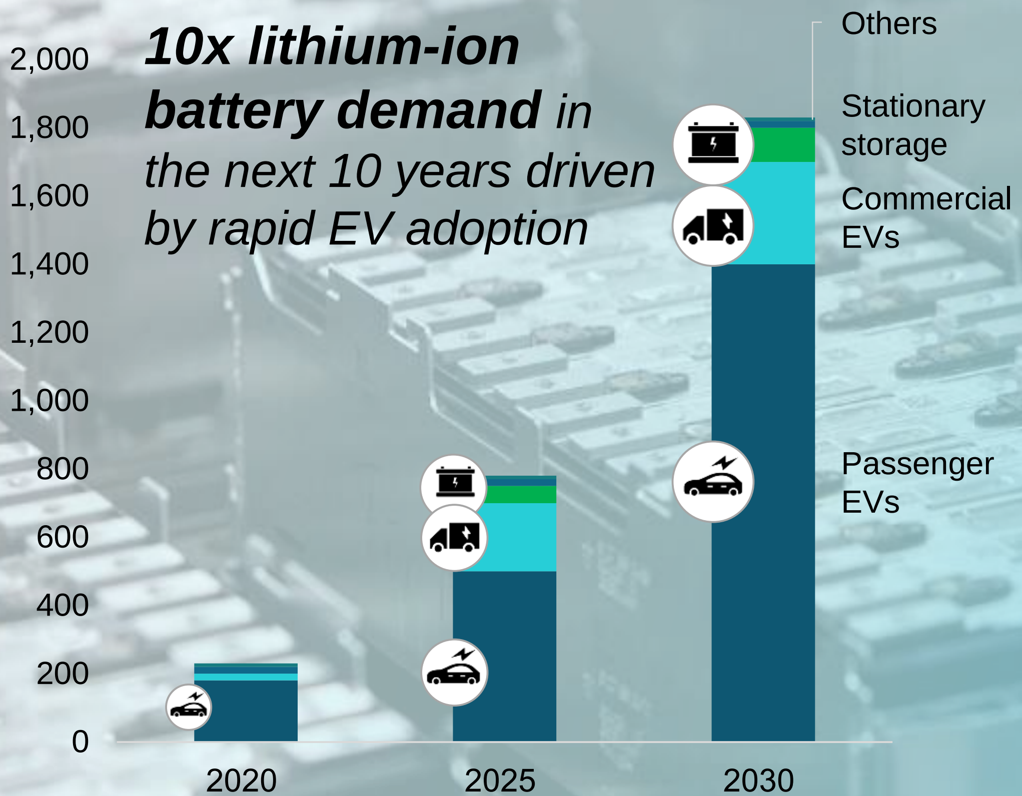
Note: *Renewable Portfolio Standards issued by The Department of Energy
Source: 2019 Southeast Asia Market Outlook , Bloomberg New Energy Finance

Energy storage systems (ESS)

GLOBAL DEMAND FOR LITHIUM-ION BATTERY DRIVEN BY ELECTRIC VEHICLES

Annual lithium-ion battery demand
Unit: GWh

***10x lithium-ion battery demand** in the next 10 years driven by rapid EV adoption*



Source: Electric Vehicle Outlook 2019, Bloomberg New Energy Finance

BANPU NEXT's lithium-ion battery production 2019

Banpu 47.7% shareholding in Durapower

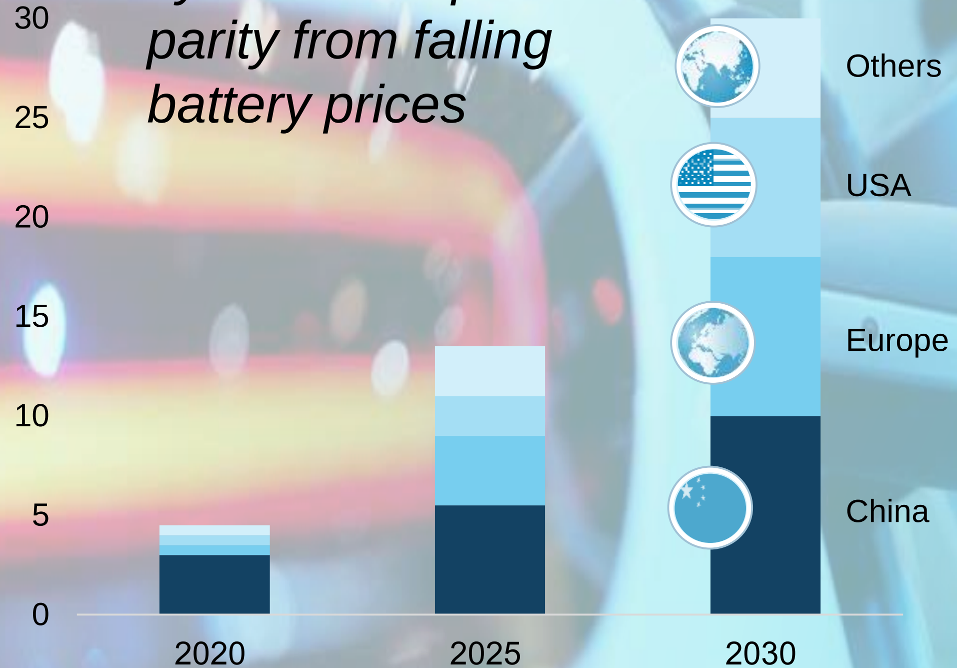
ESS strategy: increase battery production capacity and improve battery plant to produce stationary energy storage systems

Electric vehicles (EV)

EV GROWTH SUPPORTED BY PRICE PARITY BETWEEN EVS AND ICE* VEHICLES

Annual passenger EV sale by region
Unit: Million EVs

+ c.20 Million EVs *by 2030: EV price parity from falling battery prices*



Note:* Internal combustion engine
Source: Electric Vehicle Outlook 2019, Bloomberg New Energy Finance

BANPU NEXT's EV portfolio 2019

FOMM First One Mile Mobility
JAPAN
Compact EVs

Banpu 21.5% shareholding in FOMM

UMT
THAILAND
Electric Tuk Tuks

Banpu 30.7% shareholding in Urban Mobility Tech (UMT)

EV strategy: increase fleet capacity and evaluate new technologies and investment opportunities through partnership with BIV

Smart cities

BANPU NEXT TO BECOME LEADING SMART CITY DEVELOPER IN THAILAND

Smart city business model concept

BANPU NEXT's smart city portfolio 2019

THAILAND
1 operating project;
3 projects under development

BANGKOK AND CHONBURI
- Rugby school
- Chula Smart city
- Bangsean

PHUKET
- Phuket Smart City

Smart city strategy: target to develop 1 smart city project per year with wider range of smart city solutions and services

BANPU NEXT: growth targets 2025

RENEWABLES
Operating capacity*

0.3 GW → 4x → 1.1 GW

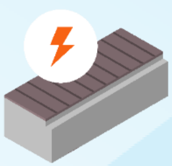
>$300 M
equity invested to date

SOLAR ROOFTOP
Operating capacity*

0.1 GW → 5x → 0.5 GW

>$30 M
equity invested to date

ENERGY STORAGE SYSTEMS
Lithium-ion battery production capacity**



1.0 GWh → 3x → 3.0 GWh

>$30 M
equity invested to date

ELECTRIC VEHICLES
EV sale and electric tuk tuk service

100 EVs sold → 340x → 34 '000 EVs sold***

0.3 Million km/year → 600x → 180 Million km /year****
(electric tuk tuk service)

>$20 M
equity invested to date

SMART CITIES
Number of projects

4 projects → 2x → 9 projects

Equity invested to date included in solar rooftop and EVs investments

ENERGY TRADING
Electricity sale

0 GWh → 300x → 300 GWh

<$1 M
equity invested to date

Note: *Capacity based on Banpu Power's equity capacity and Banpu's 34.1% shareholding in Sunseap, **Based on Banpu's 47.7% shareholding in Durapower, ***Based on Banpu's 21.5% shareholding in FOMM, ****Based on Banpu's 30.7% shareholding in UMT

BANPU NEXT: senior management team

Chanit Suwanparin
Managing Director of Banpu Electric Vehicle Business

>30 year experience in BD and product development driving S-curve businesses

Kanokwan Jitchobtham
Managing Director of Banpu Infinergy

One of Banpu Infinergy founders with a decade of experience in international M&A including investment in Sunseap, Durapower and FOMM

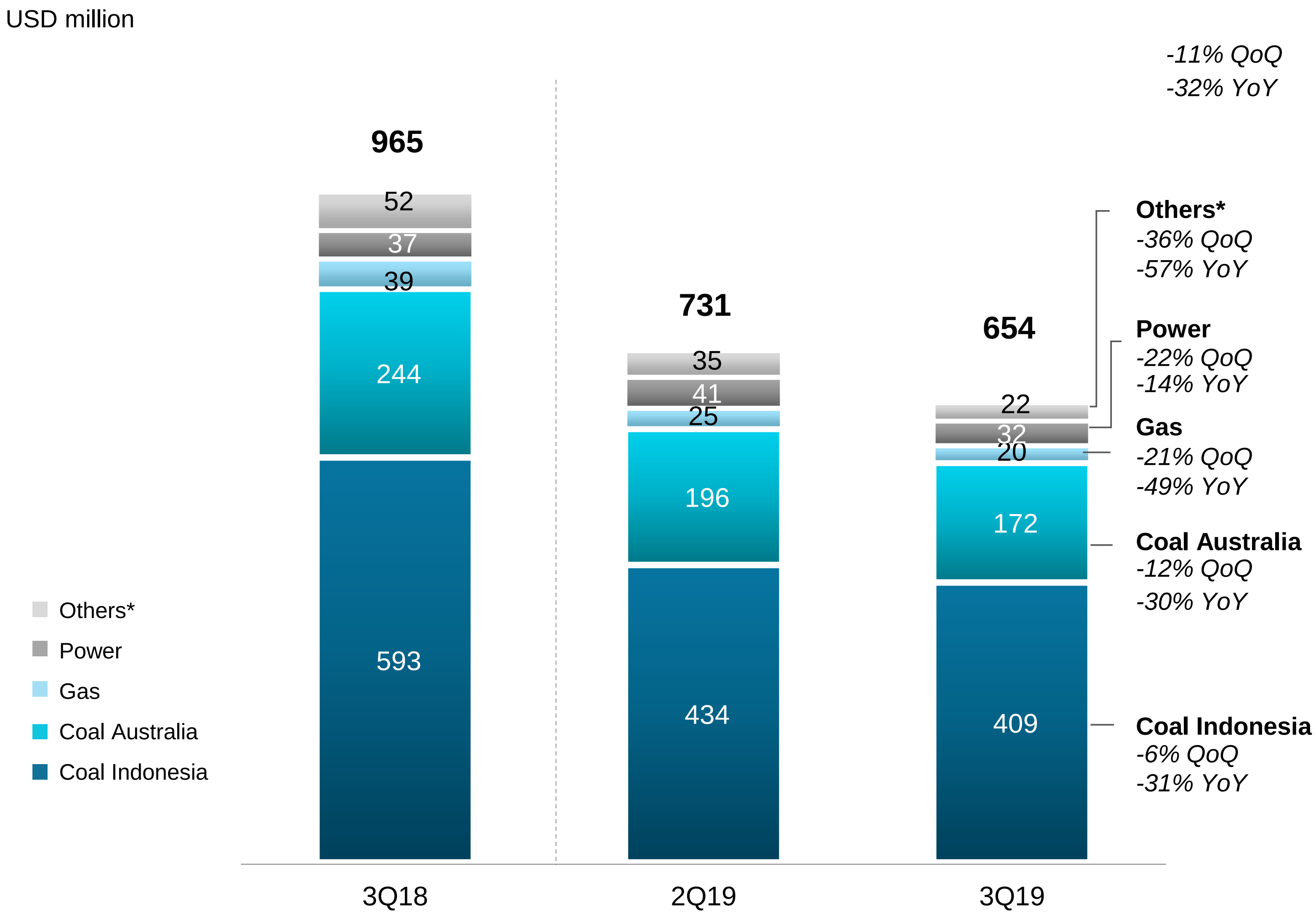
Somruedee Chaimongkol
CEO of Banpu

Leading Banpu to a Greener Smarter future since appointment as CEO in 2015

James Rama Phataminviphas
CEO of Banpu Infinergy

Thailand's youngest executive in banking industry with >20 year experience in banking and telecommunication focus on technology-driven business transformation

Banpu consolidated sales revenues



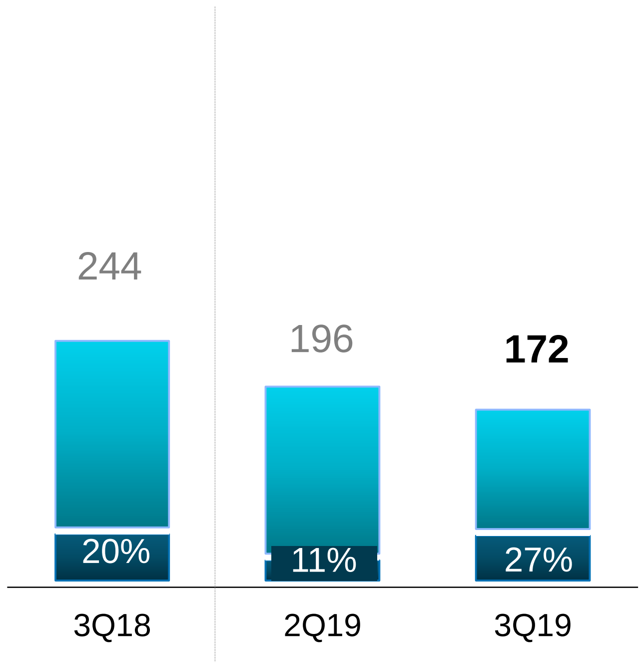
Note: *Revenue from others includes coal trading, fuel business and other businesses

Banpu consolidated coal gross margin 3Q19: 27%

AUSTRALIA COAL

USD million

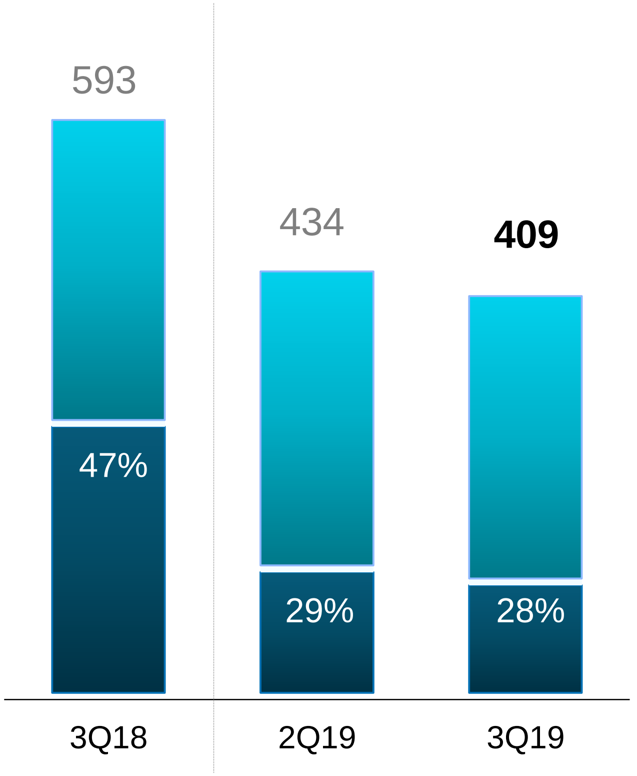
Australia coal gross margin: 27%



INDONESIA COAL

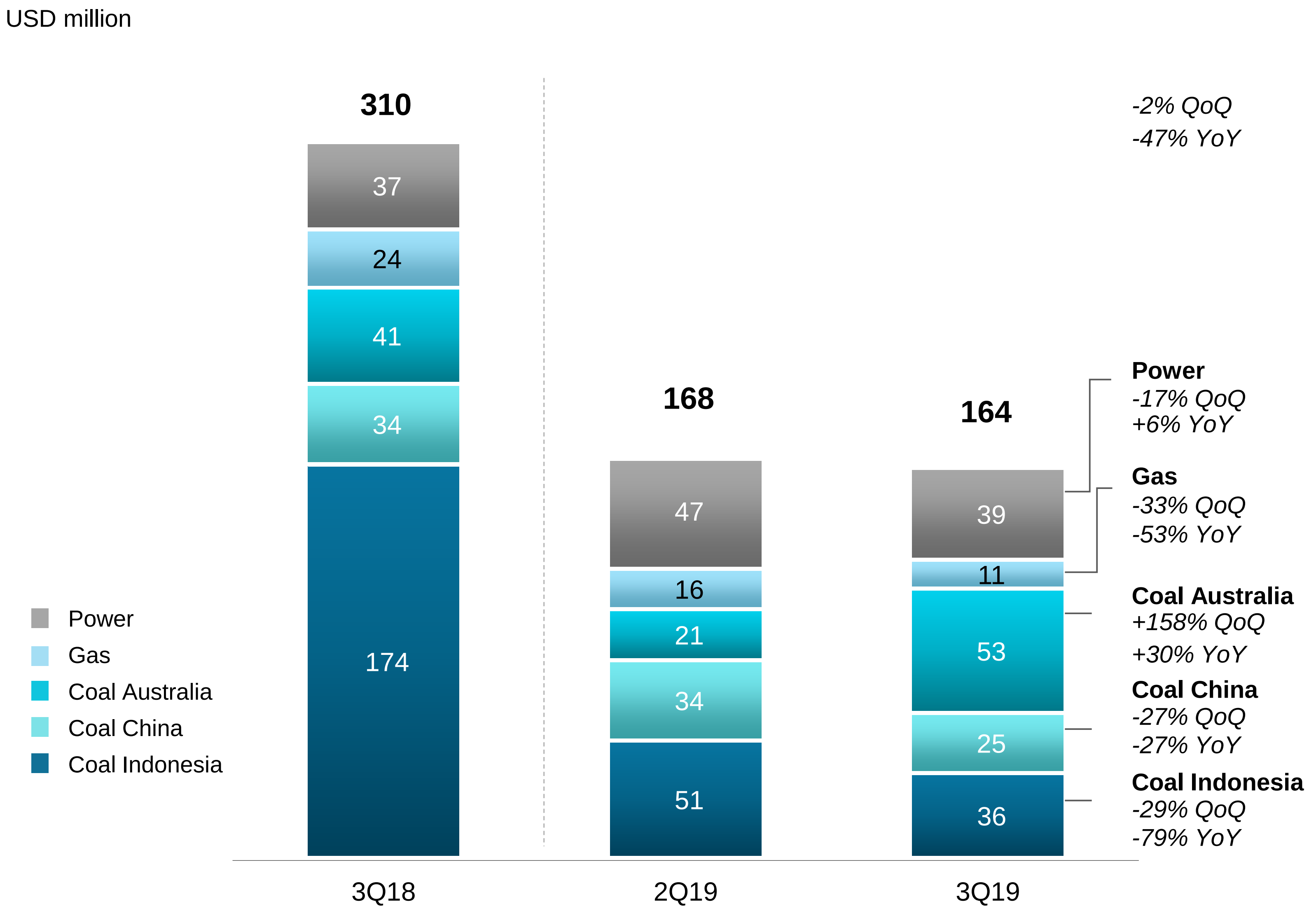
USD million

Indonesia coal gross margin: 28%



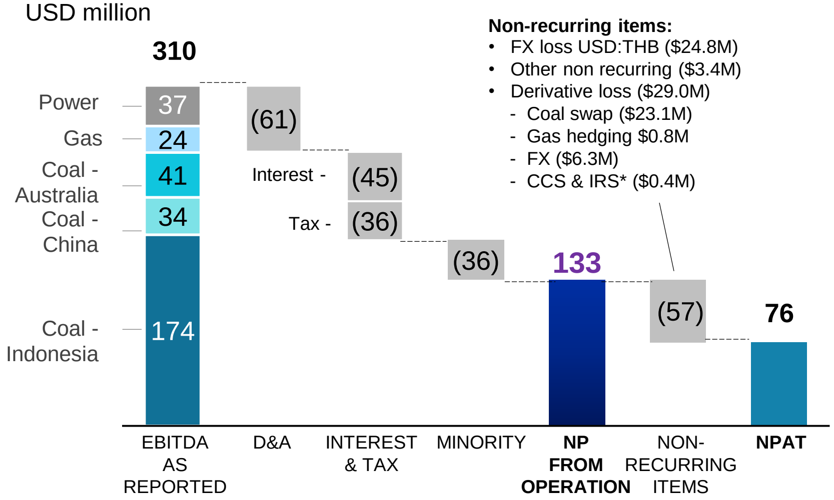
Coal sales Gross margin

Banpu consolidated EBITDA

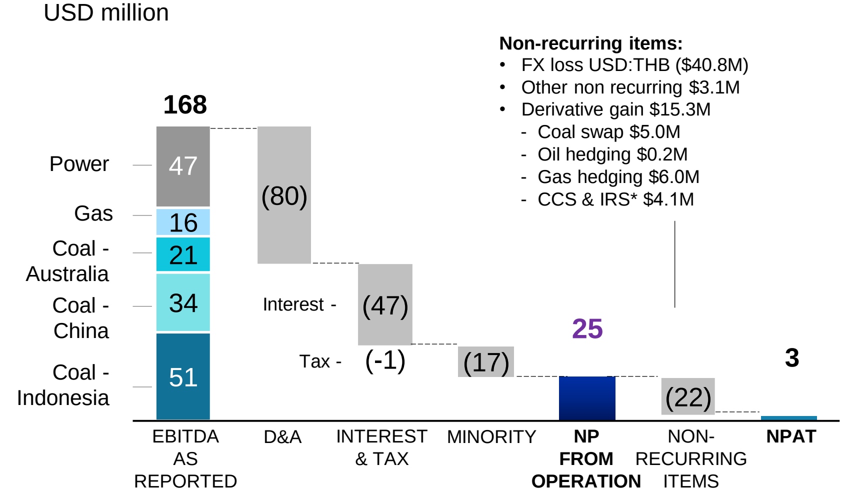


Banpu consolidated NPAT

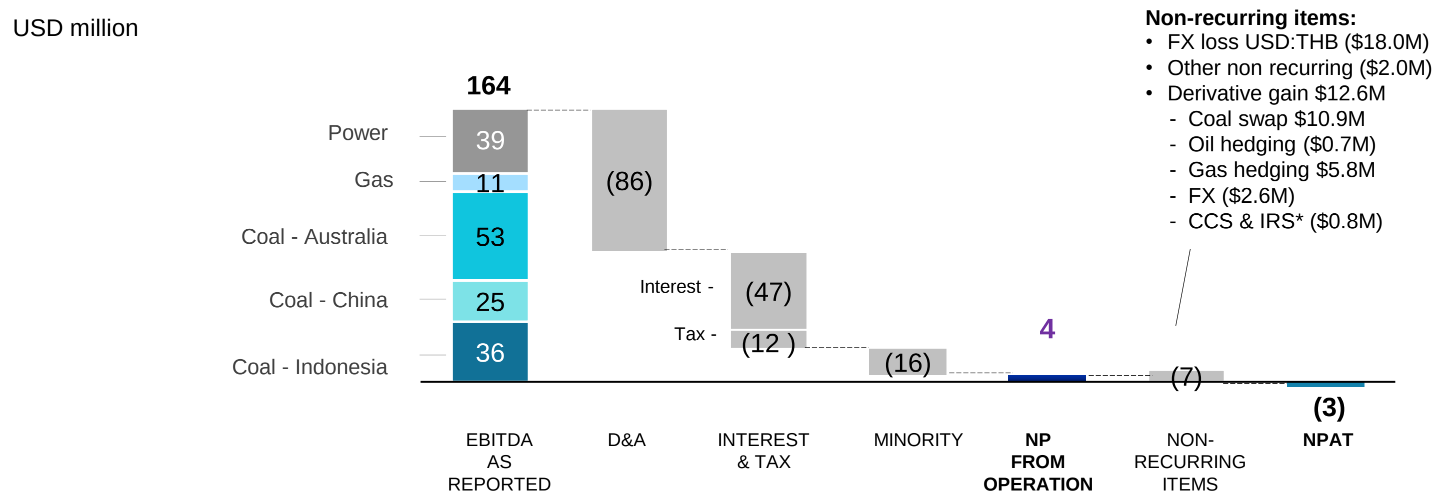
3Q18 NET PROFIT AFTER TAX



2Q19 NET PROFIT AFTER TAX



3Q19 NET PROFIT AFTER TAX

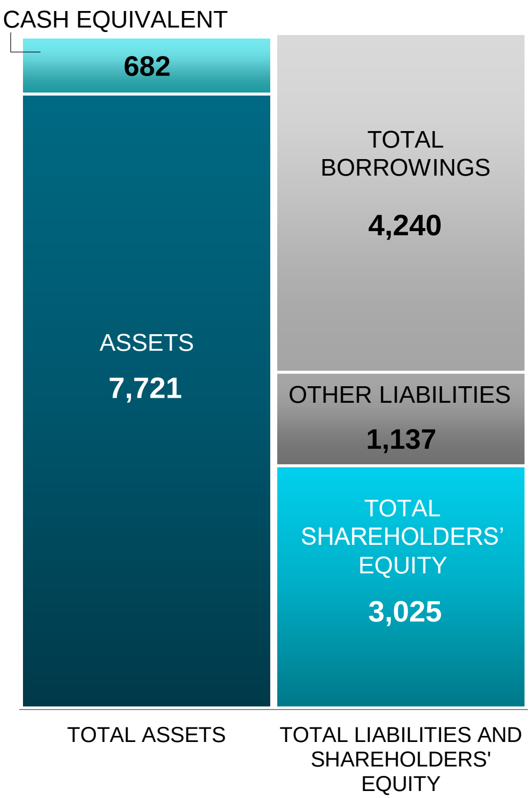


Note: *interest rate swap, cross currency swap

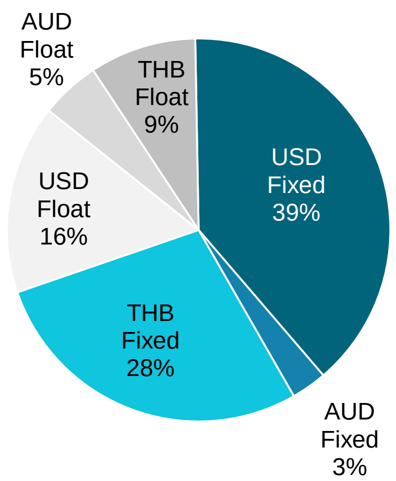
Banpu consolidated financial position

3Q19 CONSOLIDATED FINANCIAL POSITION

USD million

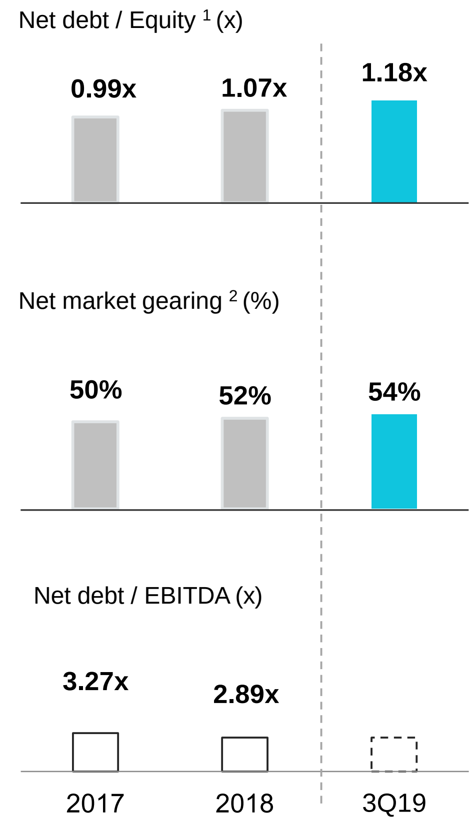


DEBT FX STRUCTURE



Total gross debt: US$4.2 billion
As of 30 September 2019

GEARING RATIOS



Note:
1 Net debt to book value of shareholders' equity
2 Net debt to enterprise value (enterprise value = net debt + market capitalization as at 30 September 2019)

1 Focus: BANPU NEXT

2 Financial Summary

3 Energy Resources

- **Coal**
- Gas

4 Energy Generation

5 Energy Technology

6 Key Takeaways

Global coal demand trends: 2019 vs 2018

GEOGRAPHY	CHANGE 2019-18 (Mt)	COMMENTS
CHINA	+30	▪ Import remained strong in Q3 as buyers speed up imports amid fear of import ban. ▪ Weak demand, high stocks and production recovery continue pressure domestic coal prices. ▪ Possible to looser import restrictions compare to last year. ▪ Imported coal remains cheaper than domestic coal at coastal area.
INDIA	+10	▪ Weak demand and prolonged monsoon slow coal imports in Q3 ▪ Slow economy will hit coal demand in Q4 but poor domestic production will support imports.
OTHER N.ASIA	-14	▪ Japan has been hit by several typhoons which damaged power distribution lines and lower power demand. ▪ South Korea and Taiwan coal burn improved in Q3 due to easing of coal curtailment ▪ But coal plant restrictions and nuclear recovery is likely to impact coal burn in Q4.
EUROPE	-22	▪ Weak fundamentals with high stocks, strong renewables and cheap gas prices continued pressure coal burn ▪ Continued strong flows of LNG from the seaborne market would likely be needed to drive an oversupply of gas in the winter and support strong coal-to-gas fuel switching.
OTHERS	+25	▪ Vietnam, Philippines and Bangladesh drive demand growth in Asia. ▪ Sluggish economy reduced coal demand in general industry in Pakistan and Thailand.
GLOBAL	**+29**	*Economic slowdown, surging renewables and ultra-low gas prices hit coal burn. Coal plant restriction to tackle dust emissions in North Asia is expected to lower coal burn during winter. Chinese import policy is the key driver for global coal market in Q4.*

Note: Includes lignite but excludes anthracite

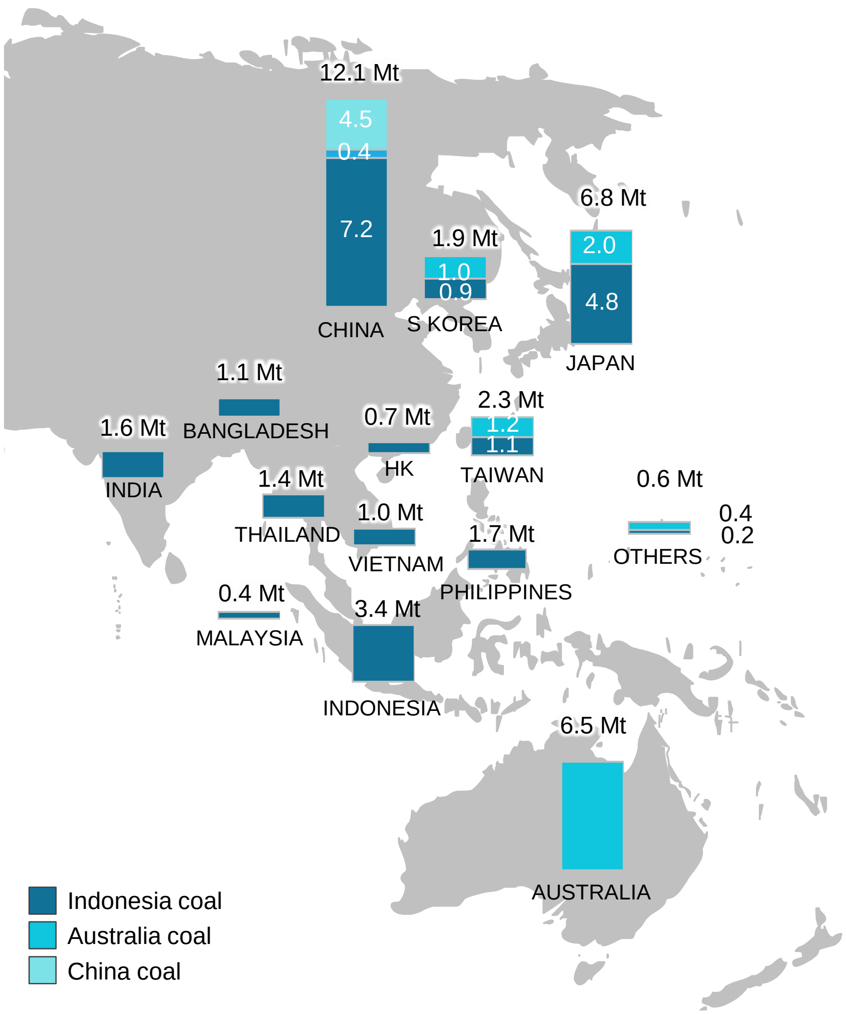
Global coal supply trends: 2019 vs 2018

GEOGRAPHY	CHANGE 2019-18 (Mt)	COMMENTS
INDONESIA	+40	▪ Government approved production increase to boost royalties ▪ High China demand continues support Indonesian coal prices. ▪ Online monitoring system which will be implemented from 1st Nov. is likely to squeeze out non-compliant miners but don't expect significant impact to exports.
AUSTRALIA	+2	▪ Export remains strong with growing HCV exports offset the decline of high-ash production. ▪ No evidence of supply cut
COLOMBIA	-8	▪ Coal exports continued hampered by weak European demand and low prices. ▪ Major producers ceased production from high-cost pits ▪ High freight rates made Colombian coal difficult to compete in Asia
RUSSIA	+6	▪ Government encourages exports ▪ Expect coal exports will remain strong as rail operator cut railing costs.
S.AFRICA	-2	▪ Strong domestic demand and low export prices hampered Q3 exports ▪ But take-or-pay rail and port contracts will continue pressure producers to maintain year end export levels. ▪ South Asian buyers are expected to ship more coal ahead of IMO2020.
USA	-15	▪ Some key exporters announced production cuts ▪ Risk of further production cut increases due to depressed coal prices.
OTHERS	0	▪ Low coal prices squeeze production from small exporters
GLOBAL	**+24**	*The US and Colombian producers have largely impact from low prices with seen production cut from several producers. But global market remains oversupply due to significant growth from Indonesia.*

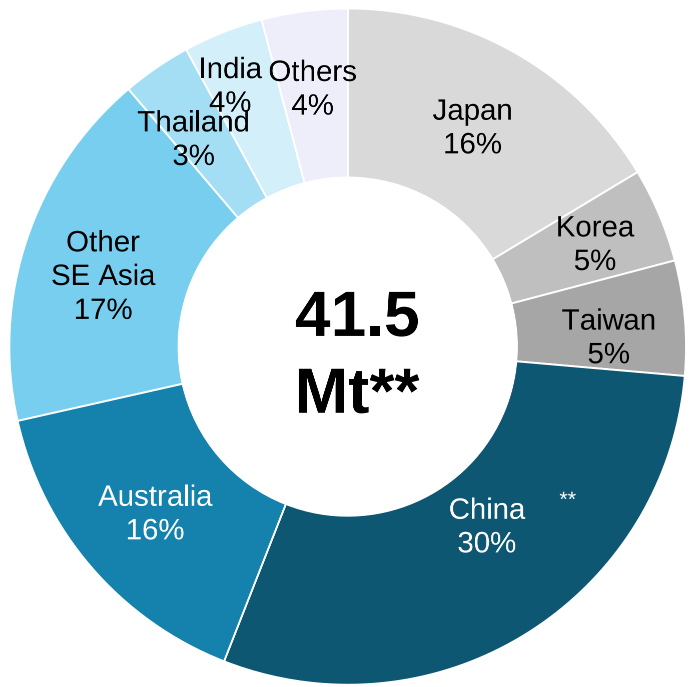
Note: Russia exports to non-CIS only

Banpu group coal sales 2019e

COAL SALES* SOURCE – DESTINATION ANALYSIS 2019e



GLOBAL COAL SALES* 2019e BY REGION

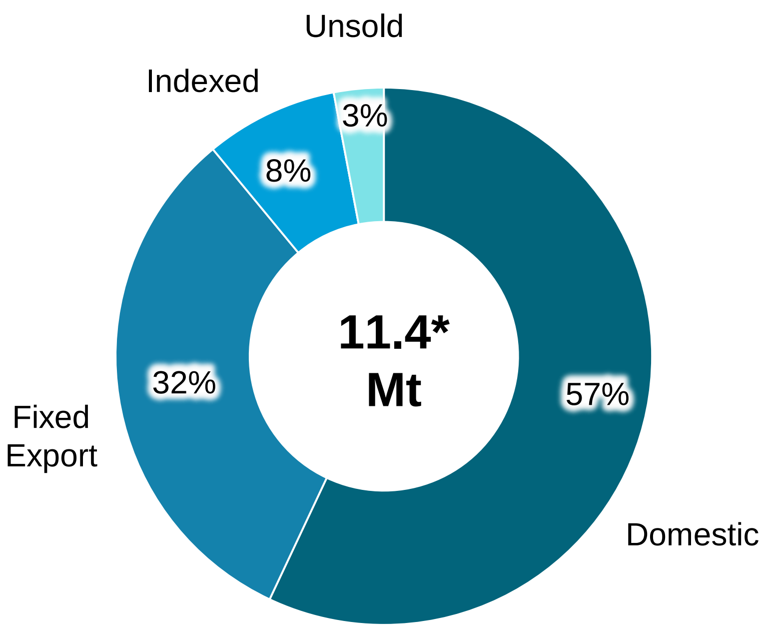


Notes:
* Sales from Indonesia are included on 100% basis, sales from Australia and China are included on equity basis. Excluding Mongolia coal
** Illustrative target
** Includes coal sales from domestic production in China

Banpu coal sales pricing status

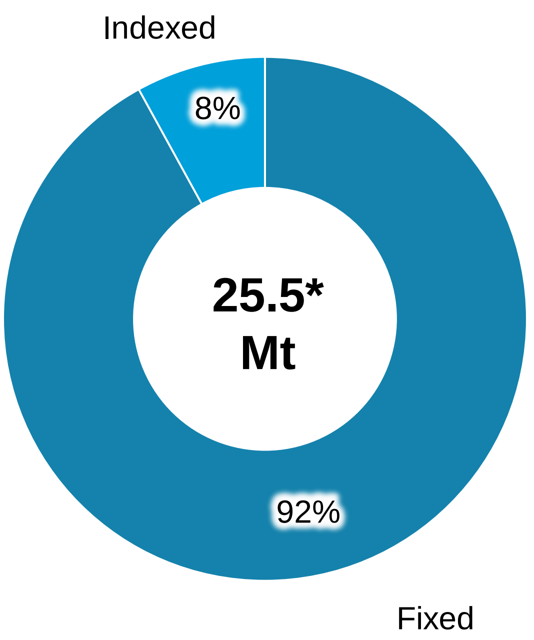
AUSTRALIA COAL

2019e



INDONESIA COAL

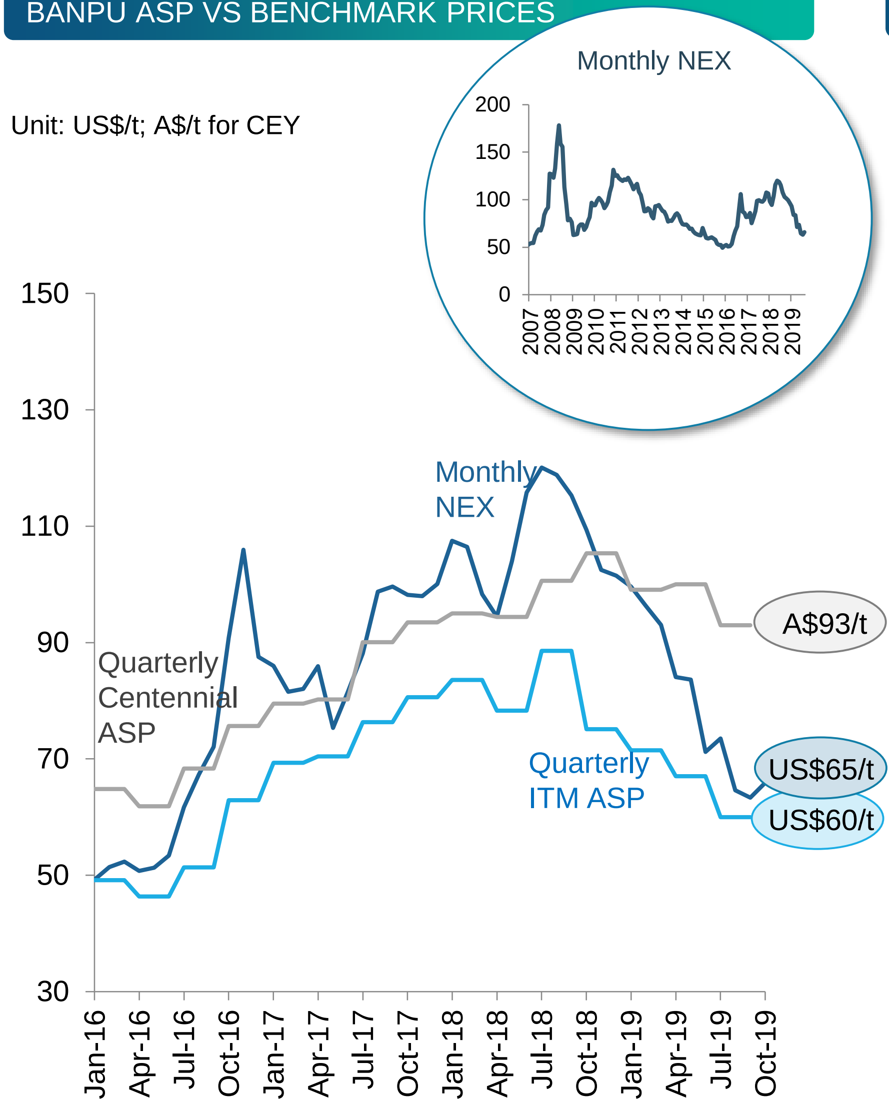
2019e



Note: * target sales; Indonesia coal sales includes third-party sourced coal

Banpu ASPs vs thermal coal benchmark prices

BANPU ASP VS BENCHMARK PRICES



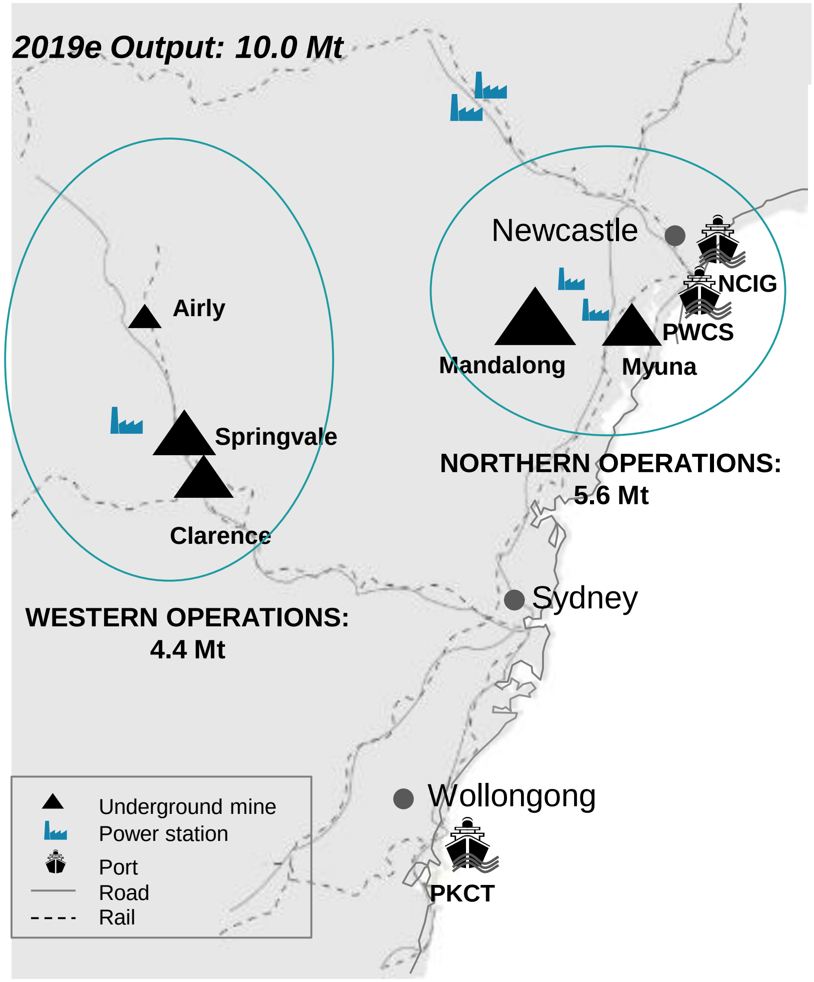
COMMENTS

- 3Q19 ASP reduced from previous quarter following the global coal price. CEY export prices declined but underpinned by stable domestic price with lower export portion compared to last quarter.
    - ITM ASP: US$60/t* (-10% QoQ)
    - CEY ASP: A$93/t* (-8% QoQ)
    - NEX (November 8, 2019)**: US$64.8/t
- Spot price stabilized in the high $60's, with future price on contango trend. Upside swings could be by any combination of a cold northern Winter, a technical failure of major old nuclear plants or prompt resolution of China – USA trade conflict.

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

Australia coal: operational summary

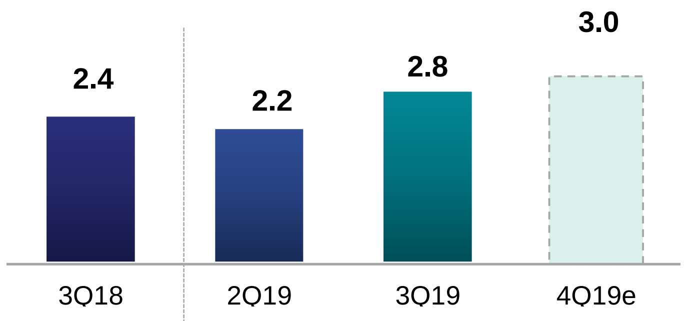
2019e OUTPUT (ROM EQUITY BASIS)



QUARTERLY OUTPUT (ROM EQUITY BASIS)

COAL OUTPUT (Mt)[1]
CV: 6,700 kcal/kg[2]

+25% QoQ
+17% YoY



Key updates

- ***Airly*** – Production up 140% QoQ and 77% YoY, with successful commencement of narrow panel extraction ("NPE") mining during the quarter. Mine achieved a series of production records, including daily, weekly, monthly and quarterly records.
- ***Clarence*** – Production up 31% QoQ and 64% YoY due to increased extraction coal improving production. Second FCT overhauled and returned underground, with commissioning underway.
- ***Springvale*** – LW425 cut short due to slower mining rates with mining to recommence on LW426 in better conditions in mid-November.
- ***Mandalong*** – Completed mining of LW25B with a return to normal production of 1.3 Mt. LW26 is off to a good start.
- ***Myuna*** – Improved QoQ, with improved performance in August, the best month of the year.

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

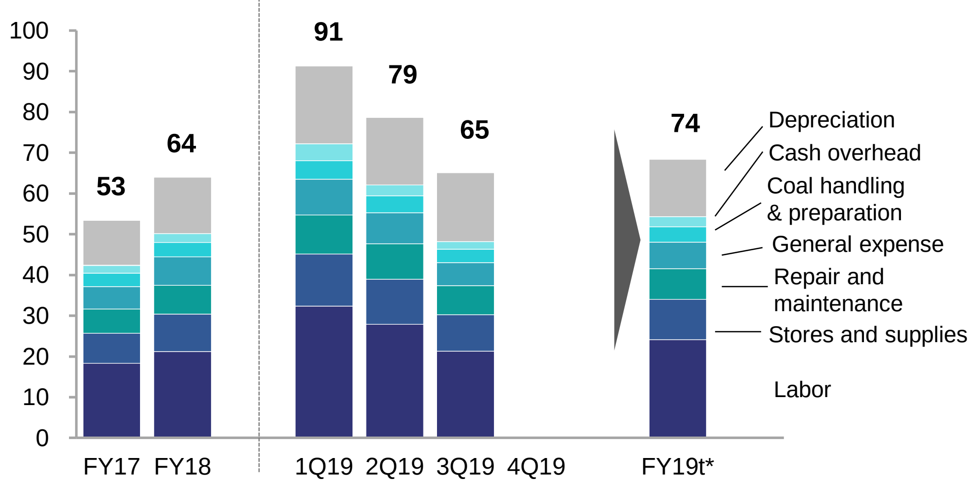
Australia coal: financial summary

FINANCIAL SUMMARY

Unit: A$ M	3Q19	2Q19	QoQ	3Q18	YoY
Sales (Mt)	**2.7**	2.9	5%▼	3.4	19%▼
ASP (A$/t)	**93**	100	8%▼	97	4%▼
Sales revenue	**255**	290	12%▼	327	22%▼
EBITDA	**67**	20	232%▲	51	31%▲

AVERAGE PRODUCTION COST[1]

Unit: A$/t



Comments

- Lower sales due to short term stock movement between quarters
- ASP impacted by decline in export prices but underpinned by stable domestic prices
- Lower export sales and prices led to lower revenue, only partly offset by higher domestic sales.
- Increased production has brought costs back in line with FY18
- Looking forward:
  - ***Springvale*** will commence mining in new block with improved conditions
  - FCT swap at ***Clarence*** will deliver improved machine reliability and production. On full high productivity extraction in 4Q19.
  - Continued ramp-up of ***Airly's*** NPE mining in 4Q19
  - ***Mandalong*** commenced mining in new block with similar production to 3Q19 expected

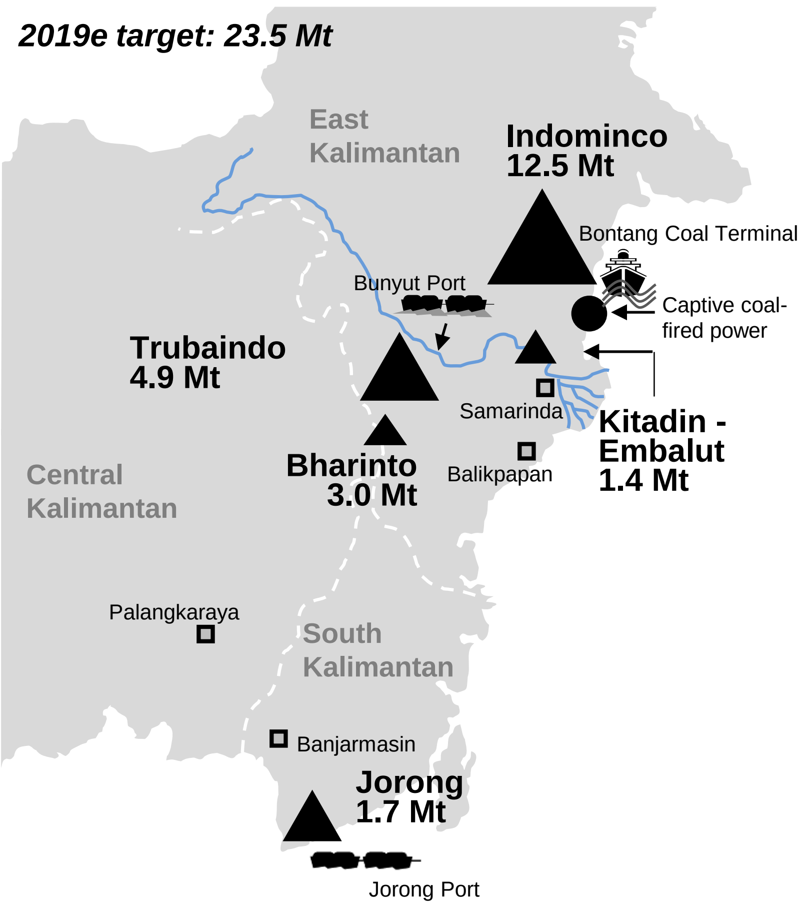
OUR WAY IN ENERGY

Note: 1 These figures do not include selling, distribution and royalty costs; based on 'sold' production, 2 Lithology: the composition or type of rock such as sandstone or limestone, * Indicative target

Indonesia coal: operational summary

2019e OUTPUT (SALEABLE TONNE BASIS)

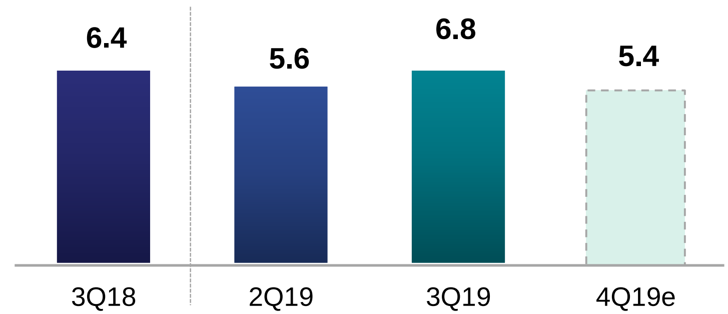
2019e target: 23.5 Mt



QUARTERLY OUTPUT (100% BASIS)

COAL OUTPUT (Mt)
CV: 5950 - 6250 kcal/kg*

+21% QoQ
+5% YoY



	3Q18	2Q19	3Q19	4Q19e
Average strip ratios (bcm/t)	11.2x	11.6x	9.5x	10.1x

Key updates

- Indominco: 3Q19 output was above target with 3.3 Mt due to supporting weather condition at Indominco area
- Trubaindo: achieved target output of 1.4 Mt
- Bharinto: above target output of 1.0 Mt
- Embalut: above target output of 0.4 Mt
- Jorong: above target output of 0.5 Mt

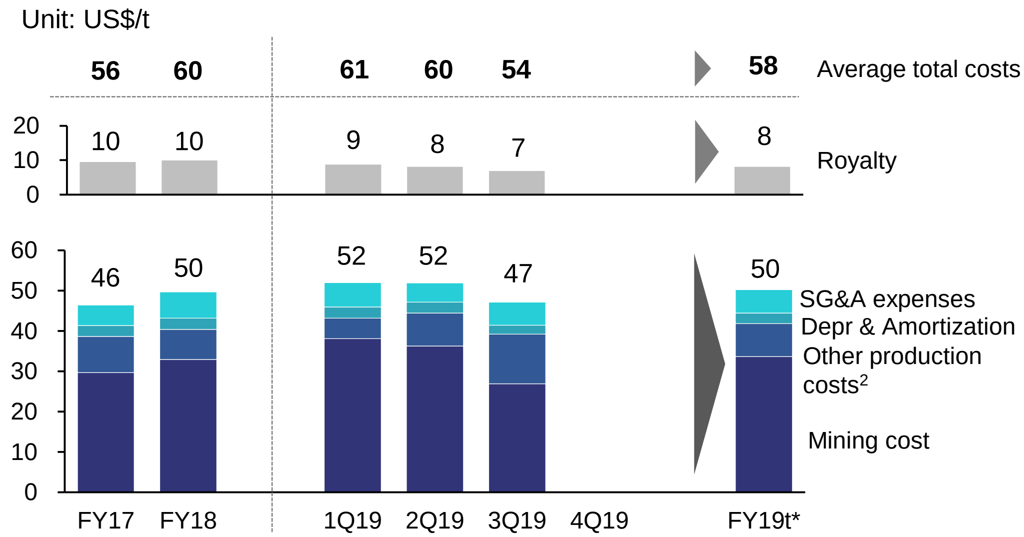
Note: *CV figures are air-dried basis

Indonesia coal: financial summary

FINANCIAL SUMMARY

Unit: US$ M	3Q19	2Q19	QoQ	3Q18	YoY
Sales (Mt)	**6.5**	6.3	3%▲	6.4	1%▲
ASP (US$/t)	**62**	67	8%▼	89	30%▼
Sales revenue	**412**	440	6%▼	606	32%▼
EBITDA	**53**	54	2%▼	169	69%▼

AVERAGE TOTAL COST[1]



Comments

- Slightly higher total sales in 3Q19, except for Indominco and Jorong
- ASP was again impacted by softening coal market prices
- Average total cost slightly lower than 2Q19 mainly due to lower stripping ratio as a result of mine plan optimization

OUR WAY IN ENERGY

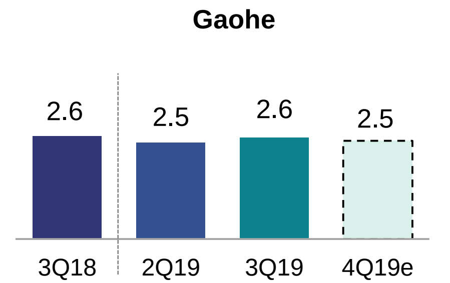
Note: 1 Coal business only, 2 Repair and maintenance, salaries and allowances, inventory adjustment, others etc.,* Indicative target

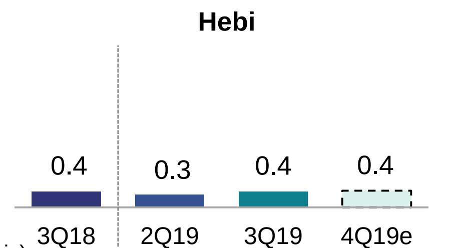
China and Mongolia coal summary

CHINA COAL 2019 PRODUCTION*

Unit: Mt ROM

2019 target: 11.4 Mt





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

GAOHE'S FINANCIAL SUMMARY

Unit: US$ M	3Q19	2Q19	QoQ	3Q18	YoY
Sales (Mt)	**2.1**	2.3	9%▼	2.4	13%▼
ASP (US$/t)	**84**	94	11%▼	92	9%▼
Sales revenue	**176**	211	17%▼	221	20%▼
COGS (US$t/)	**48**	43	12%▲	47	2%▲
EBITDA	**92**	131	30%▼	126	27%▼

GAOHE OPERATIONAL UPDATES

- Stable production with continued focus on safety
- Lower sales in Q3 due to hydro power impact
- Expected production and sales high level in Q4 because of high demand and production resumption during winter season.

HEBI OPERATIONAL UPDATES

- Higher production due to production rate of Panel 2509 has been increased after it was test run in the late of Aug'19.
- Continue to focus on safety and environment improvement measures to make sure the production is stable

MONGOLIA PROJECTS UPDATES

Tsant Uul

- Collaborate with pyrolysis vendors and oil upgrading vendors to add more value to tar oil and char

Unst Khudag and Altai Nuurs

- Preliminary feasibility study for UK coal conversion
- Received MRPAM[1] approval of Feasibility Study for AN Coal Fired Power Plant
- Received approval DEIA[2] report for AN Coal Fired Power Plant from MEGD[3]

Note: 1 Mineral Resources and Petroleum Authority of Mongolia, 2 Detail Environmental Impact Assessment, 3 Ministry of Environment and Green Development

1 Focus: BANPU NEXT

2 Financial Summary

3 Energy Resources

- Coal
- **Gas**

4 Energy Generation

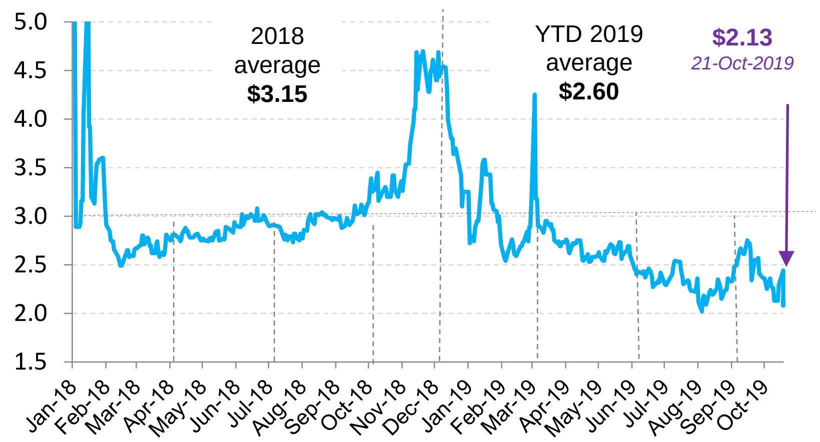
5 Energy Technology

6 Key Takeaways

U.S. gas market update

AVERAGE HENRY HUB PRICE AS OF 21 OCT 19

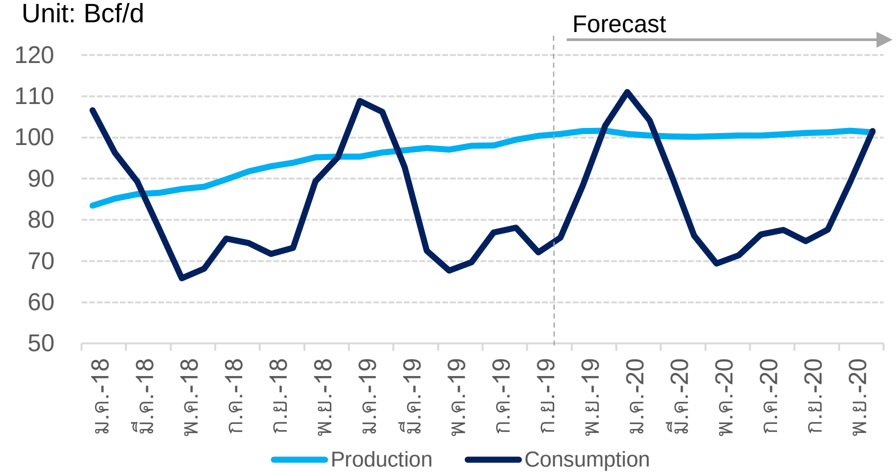
Unit: US$/MMBTU



- **Gas Price:** Henry Hub price averaged around $2.35 per MMbtu in 3Q19, lower than the LTM average of around $2.82 per Mmbtu
- Strong supply growth during Apr-Oct injection season has enabled gas inventories to build up more than the five-year average. Gas production growth in 2020 is expected to be close to that of 2019 due to the delayed effect of low prices in 2H19 which will result in a reduction in drilling & completion campaigns in 2020.
- **Outlook:** EIA suggests Henry Hub to average around $2.43/Mmbtu in 4Q19, subsequently increasing to $2.52/Mmbtu in 2020

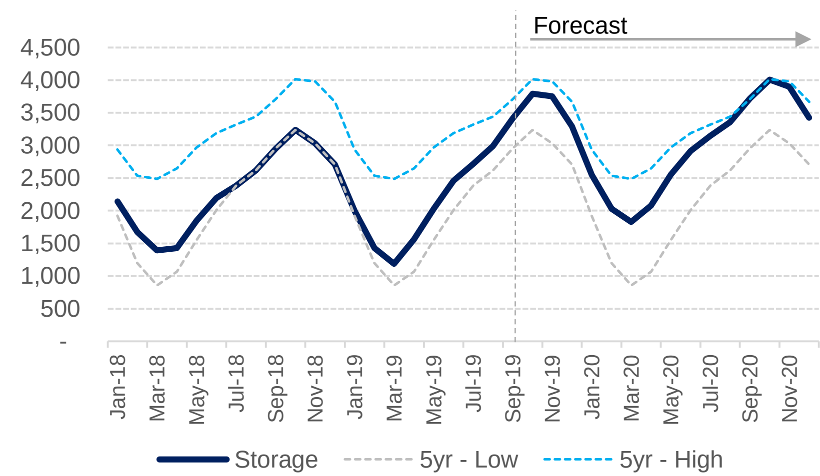
U.S. TOTAL NATURAL GAS PRODUCTION – CONSUMPTION

Unit: Bcf/d



U.S. STORAGE LEVEL

Unit: Bcf



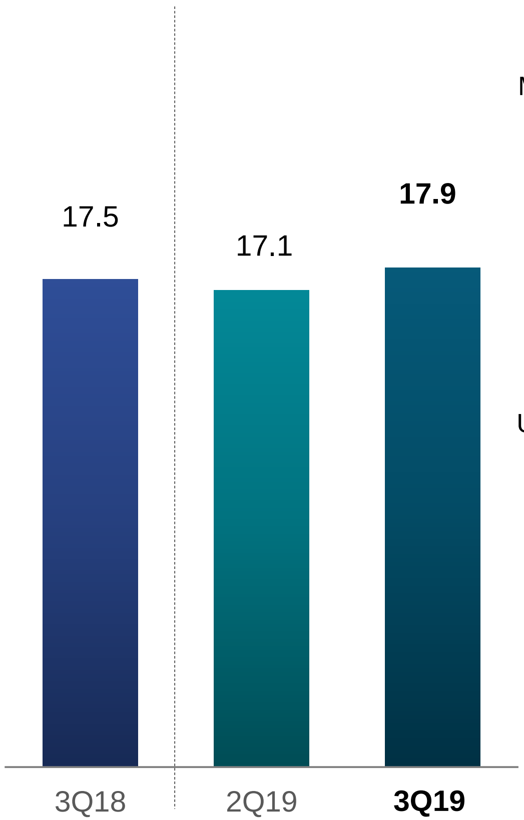
Source: EIA

Gas business 3Q19 performance

3Q19 profitability was largely impacted by weak Henry Hub price and a decision to strategically curtail fracking. However, we expect more contribution from new wells which will strengthen EBITDA, with some upside from winter prices.

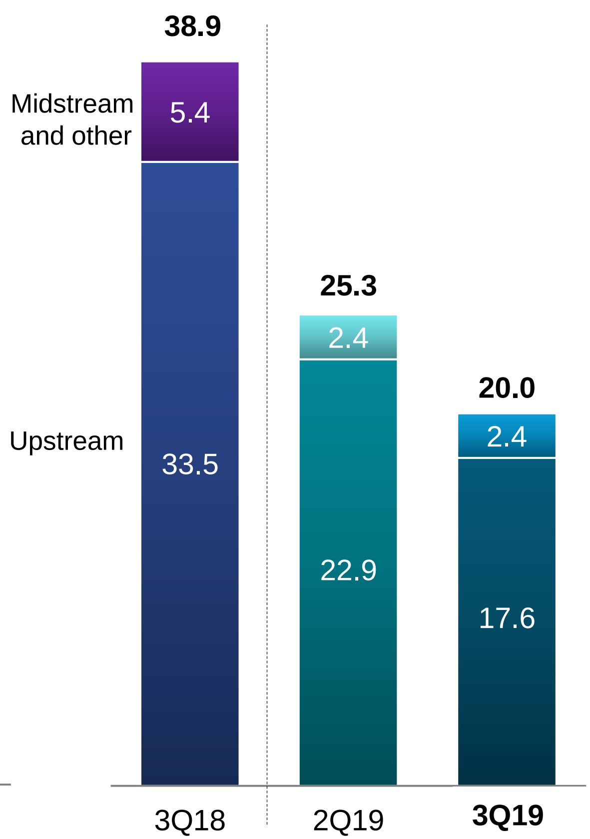
SALES VOLUMES

Unit: Bcf [1]



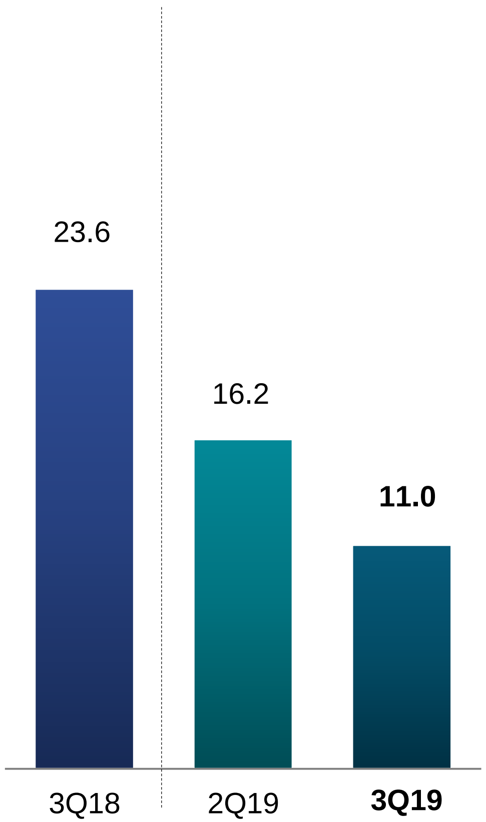
TOTAL REALIZED REVENUE

Unit: US$M



EBITDA

Unit: US$M



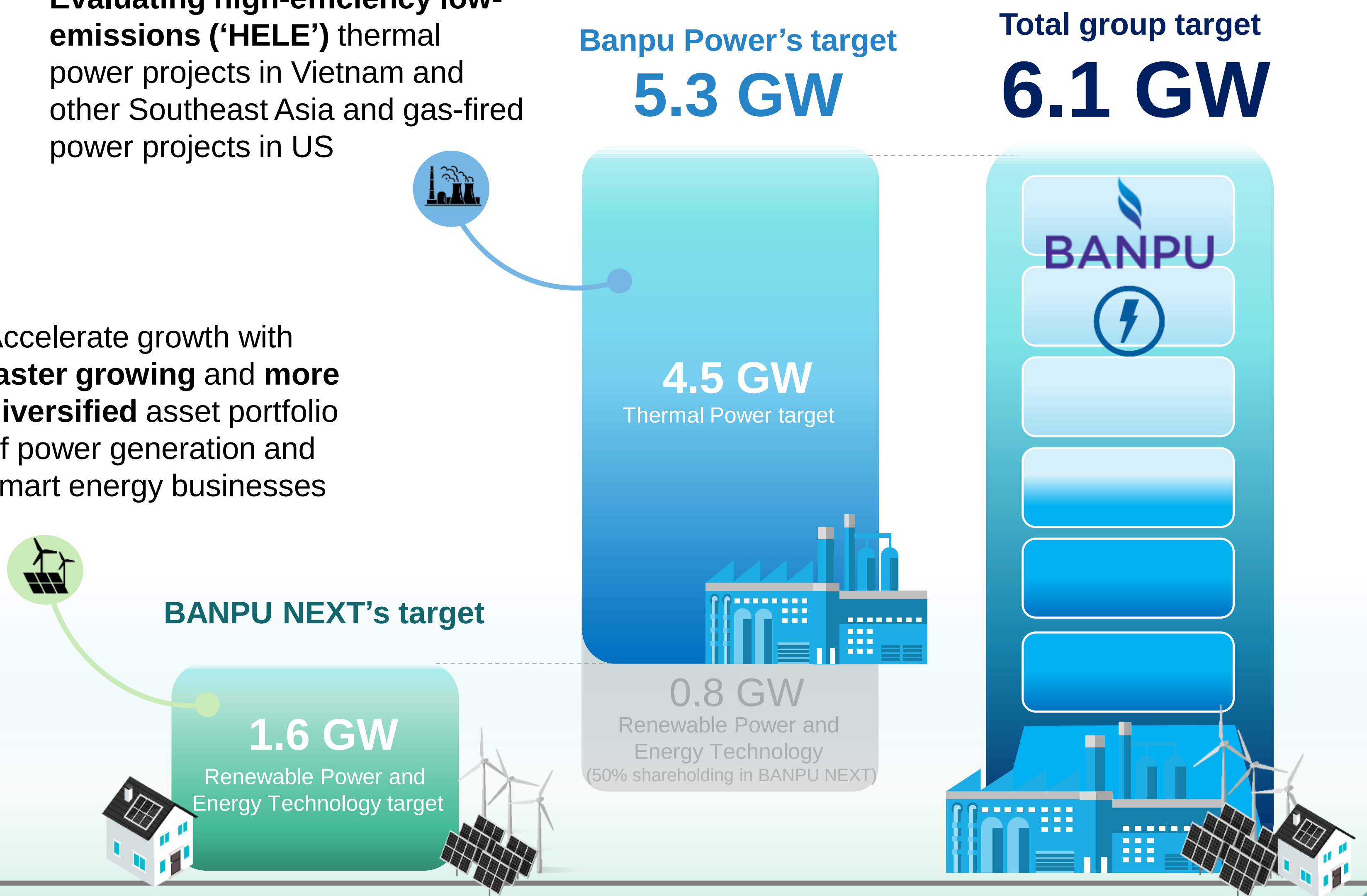
OUR WAY IN ENERGY

Note: 1 Bcf = Billion cubic feet

Banpu Energy Generation: 6.1 GW target by 2025

Evaluating high-efficiency low-emissions (‘HELE’) thermal power projects in Vietnam and other Southeast Asia and gas-fired power projects in US

Accelerate growth with **faster growing** and **more diversified** asset portfolio of power generation and smart energy businesses



Banpu Power 3Q19: thermal power

THAILAND

BLCP

Solid operational performance with full dispatch to support electricity demand

- EAF* reported at 100%
- EBITDA of THB 0.85 Bn, +12% YoY
- Profit contribution of THB 0.3 Bn, -11% YoY

LAOS

Hongsa

Continued implementation of efficiency improvement program resulted in Higher reliability

- EAF reported at 88%
- EBITDA of THB 3.2 Bn, -2 % YoY
- Profit contribution of THB 0.9 Bn, +13% YoY

CHINA

China CHP

Impacted from lower seasonal demand reflect in softening sales volume. Expected demand to be recovered during 4Q19 from higher demand in winter.

- Reported revenue of THB 1.0 Bn, with coal cost saving 14% YoY from softer domestic coal price

SLG

- Construction progress reached 70%
- Expected COD in 2H20 to synchronize with transmission line construction completion

Note: *Equivalent Availability Factor (EAF) is a percentage and measures of the potential amount of energy that could be produced by the unit after all planned and unplanned losses are removed

Banpu Power 3Q19: renewable power

CHINA

China Solar

Higher sales revenue due to favorable weather condition and additional capacity from Jixin solar farm.

- Average capacity factor reported at 16%, -1% YoY
- Power sold up by 13% YoY from additional capacity from Jixin project
- Reported revenue of RMB 46 M, +10% QoQ

JAPAN

Japan Solar

Consistent power generation despite lower irradiation from seasonal impact. Continue to progress the construction of the remaining projects

- Average capacity factor reported at 15%, +1% YoY
- Power sold double from same period last year supported by additional capacity from Mukawa and Nari Aizu which COD end of 2018

VIETNAM

Vietnam Wind

Progressing well on development as plan. Continue to conduct Pre-feasibility study of phase 2 and 3 (remaining 50 MW)

- Phase 1 completed EPC selection process
- Due diligence process by potential lender's advisors
- Expected to start phase 1 construction by end of 2019

BPIN partnership with PMCU to develop CU Smart City

- Banpu Infinergy has been engaged by Property Management of Chulalongkorn University (PMCU) to install solar rooftops on buildings and parking lots within Suanluang-Samyan area with total capacity of **672 kW**
- Pilot Smart energy management as part of **Chula Smart City** initiative based on ‘**4 SMARTs’** concept: Smart Mobility, Smart Energy, Smart Environment, and Smart Living
- BPIN has previously supported **Smart Mobility** through introduction of **Muvmi***, providing on-demand Electric Tuk Tuk service within Chula campus

Note: *BANPU NEXT ownership in UMT of 22.5%

BPIN: 3.4 MW solar rooftop projects secured

- Banpu Infinergy is contracted to install 4 solar rooftop projects in Thailand with total capacity of **3.4 MW** including:
  - FN Outlet (6 branches)
  - Chula Suanluang-Samyan (Sport Zone and Samyan Market)
  - NS-SIAM United Steel
- Banpu Infinergy's solar rooftop portfolio in Thailand reached **15 MW**, with total aggregated portfolio of over **98 MW** across Asia-Pacific

Durapower: increase battery production capacity to 1 GWh

- Battery plant has further increased production capacity **from 380 MWh to 1 GWh per annum**
- Highlights the strengths of advanced technology utilization, along with over 40 world-class guarantee standards, including quality certifications and international patents.
- This factory will be able to extend the capacity of the production line **up to maximum of 3 GWh**

Note: *Banpu 47.7% shareholding in Durapower

Banpu group: integrated energy solutions

MINING

Energy Resources

Coal mining operations in Indonesia, Australia, China and Mongolia

THERMAL POWER

Energy Generation

Thermal power plants in Thailand, Laos and China

GAS

Energy Resources

Upstream gas operations in North America

CLEAN ENERGY

Energy Generation and Technology

Renewable power plants and clean energy technology businesses

BANPU NEXT: delivering sustainable growth

Sustainability focus

- BANPU NEXT support Banpu's vision to lead transition to ever more sustainable energy supply
- Consistent with goal of continuous improvement of the group's 'ESG' standards and performance

Strengthen Banpu's balance sheet

- BANPU NEXT to have independent funding strategies
- Combination of core cash flow stability, upside potential and long-term growth

Management focus

- Dedicated and accountable management teams at Banpu Power and BANPU NEXT to focus more efficiently on maximizing value in each area

Accelerate greener, smarter growth

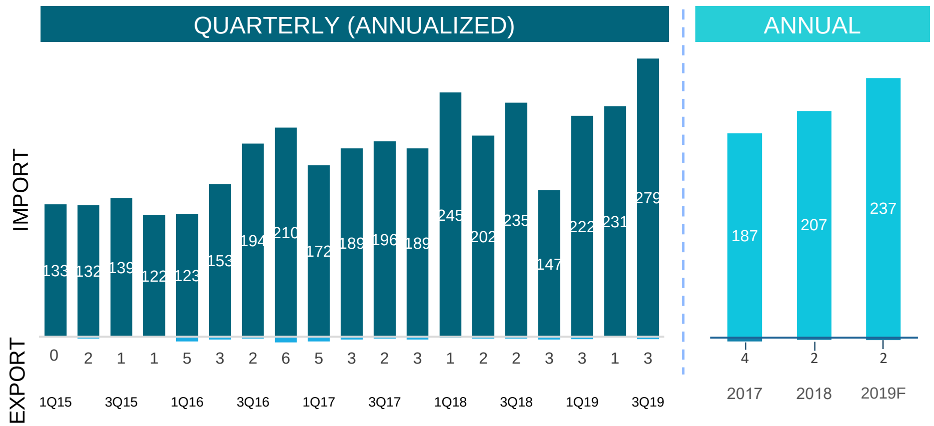
- Delivering growth in high-efficiency low-emissions ('HELE') thermal power, renewable power, and fast-growing smart energy businesses
- To achieve target of 6.1 GW energy generation by 2025

APPENDIX

China: relaxation in import restrictions

CHINA THERMAL COAL IMPORTS/EXPORTS*

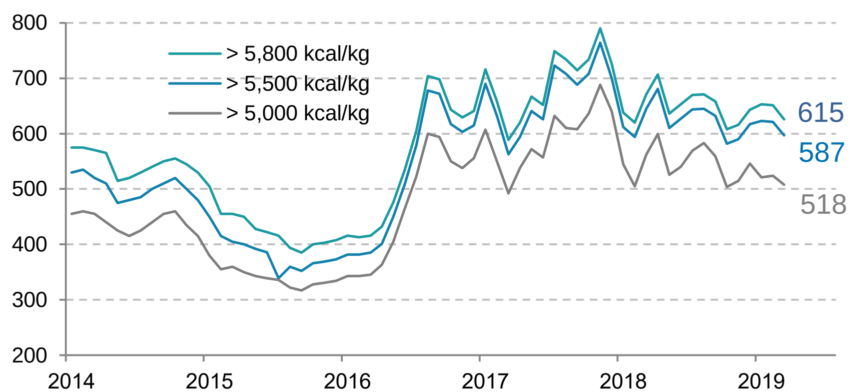
Unit: Mt



Sources: Banpu MS&L

CHINA DOMESTIC COAL PRICES

Unit: RMB/t



3Q19

- The price for benchmark QHD 5500 drifted between RMB612/t to RMB580/t in Q3 on weak demand, high inventory and move into shoulder season.
- Power generation continued increased year on year at slower pace but it is not enough to bolster coal demand.
- Domestic coal production has been impacted by safety checks ahead of China's 70th anniversary celebration but it did not cause prices to increase.
- Coal imports remained strong in Q3 as imported coal was cheaper than domestic coal and fear of import restrictions started to fade.
- China is scrapping its benchmark pricing for coal-fired thermal power and replacing it with a base price and floating mechanism - a move which could boost imports as generators move to defend margins

Outlook

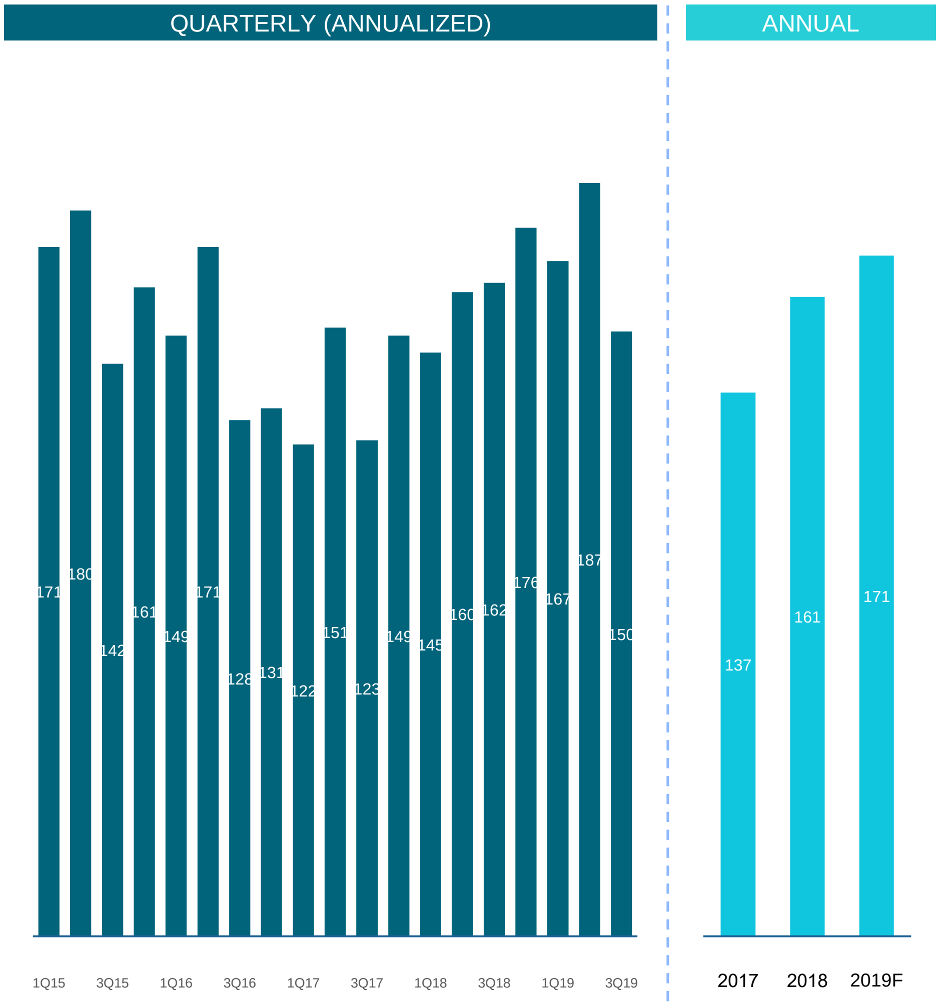
- Trade war will continue to cool down China's GDP growth
- Slow economic growth in the coastal region will encourage local government to help local business cut costs.
- Import restriction is likely to be less strictly implemented than we expected which may result in higher import volume.

Note: * includes lignite but excludes anthracite imports/exports

Source: www.sxcoal.com/cn 11 October 2019

India: sluggish economy and record hydro hit coal demand

INDIA THERMAL COAL IMPORTS*
Unit: Mt



3Q19

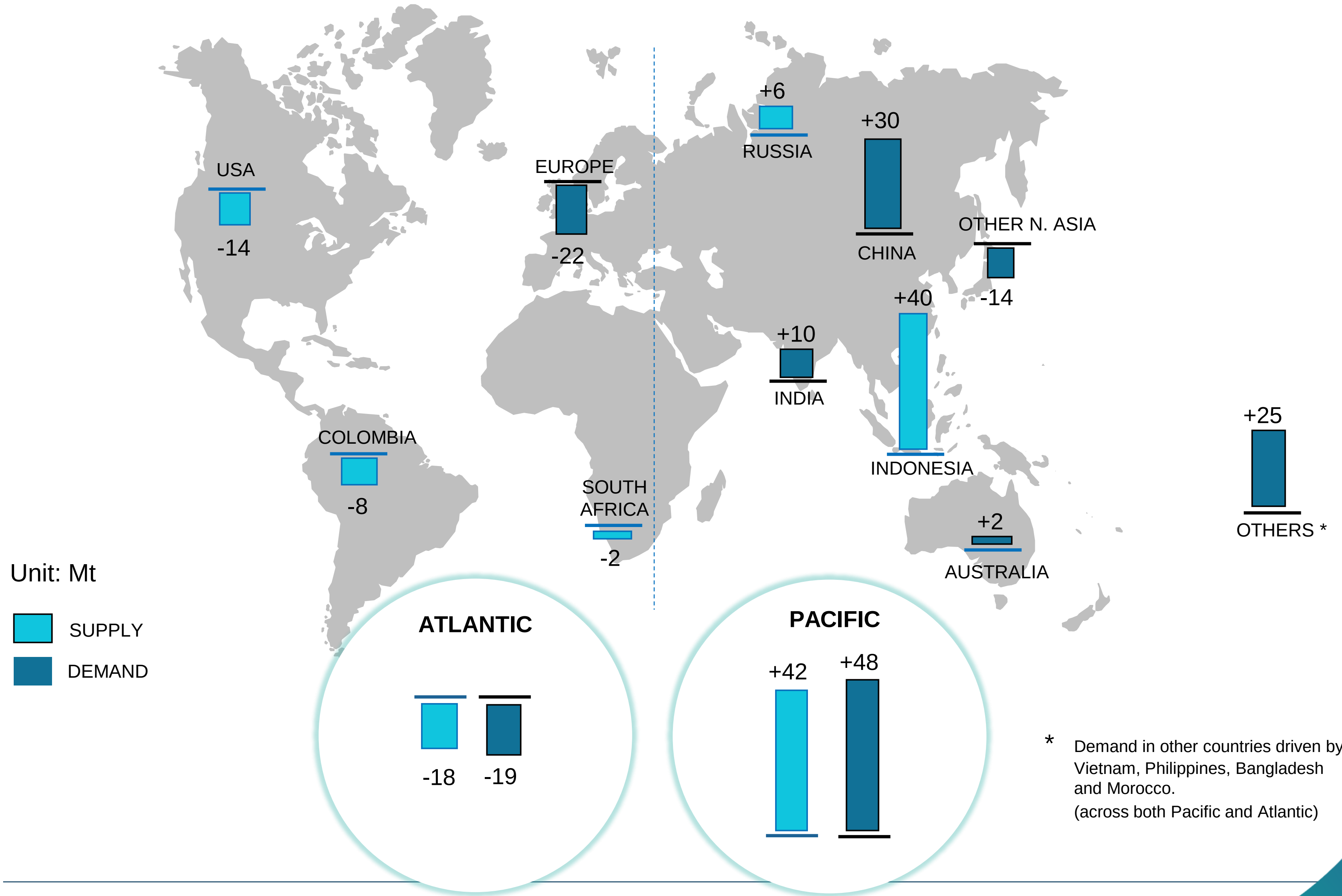
- India economy faces severe challenges due to tepid consumer demand, liquidity issues in the financial market and muted corporate investments.
- Electricity generation increased just 1% year-on-year in Q3.
- A surge in hydro and nuclear generations caused coal-based generation dropped by 2.9% year-on-year in Q3.
- Weak thermal coal demand from non-power sector due to lower industrial output.
- Strong rainfall impacted domestic coal production and dispatched.

Outlook

- Downtrends in automobile sales, real estate and construction, as well as in manufacturing sector is likely to continue into Q4.
- Domestic coal production shortage is expected to reduce tonnage supply from Coal India to spot market in Q4 and force non-power sector to seek coal from imports.
- Soft international prices are making imports more attractive for non-power coal consumers.
- Economic stimulus announced by government will support growth in power generation and coal consumption.

Note: * includes lignite grade imports
Sources:: Commodity Insights, Banpu MS&L

Regional thermal coal market: 2019e vs 2018



* Demand in other countries driven by Vietnam, Philippines, Bangladesh and Morocco.
(across both Pacific and Atlantic)

Coal quarterly output summary

AUSTRALIA OPERATIONS: COAL OUTPUT (MT) – ROM OUTPUT ON EQUITY BASIS					
Mines	**CV (kcal/kg)***	**3Q18**	**2Q19**	**3Q19**	**4Q19e**
Western operations		**1.0**	**0.8**	**1.0**	**1.4**
Springvale	6,700	0.4	0.3	0.1	0.3
Clarence	6,700	0.3	0.4	0.5	0.5
Airly	6,700	0.2	0.2	0.4	0.6
Northern operations		**1.4**	**1.4**	**1.8**	**1.6**
Mandalong	6,700	0.8	1.0	1.3	1.1
Myuna	6,700	0.6	0.4	0.5	0.5
Total Australia coal		**2.4**	**2.2**	**2.8**	**3.0**

INDONESIA OPERATIONS: COAL OUTPUT (MT) – ROM OUTPUT ON 100% BASIS									
Mines	**CV (kcal/kg)***	**3Q18**		**2Q19**		**3Q19**		**4Q19e**	
		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	0.4	25.0	0.4	26.1	0.5	22.7	0.6	17.3
Indominco – East block		3.3	9.3	2.7	9.3	2.8	7.5	2.2	10.1
Trubaindo	6,550 – 6,700	1.3	12.7	1.1	13.5	1.5	10.5	1.2	9.1
Bharinto		0.7	8.3	0.7	10.2	1.0	8.4	0.7	8.5
Kitadin-Embalut	5,800	0.3	9.8	0.3	10.1	0.4	8.6	0.3	9.2
Jorong	5,300	0.3	6.5	0.4	8.1	0.5	6.7	0.5	7.0
Total Indonesia coal		**6.3**	**10.8**	**5.6**	**11.6**	**6.8**	**9.5**	**5.3**	**10.1**

CHINA OPERATIONS: COAL OUTPUT (MT) – ROM OUTPUT ON 100% BASIS					
Mines	**CV (kcal/kg)***	**3Q18**	**2Q19**	**3Q19**	**4Q19e**
Gaohe		2.7	2.5	2.6	2.5
Hebi		0.3	0.3	0.4	0.4
Total China coal		**3.0**	**2.8**	**3.0**	**2.9**

Note: *CV figures are air-dried basis

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 Meters^3
    - 1 MCF = 1.0 Million BTU (MMBTU) or Decatherms (dry gas)
    - 1 BCF = 1.0 Trillion BTU
    - 1 Meter^3 = 35.3 MCF
    - 1 Billion Meters^3 = 35.3 BCF

2019 indicative guidance

ILLUSTRATIVE AND INDICATIVE ONLY

UNIT GUIDANCE (US$/ MCF)			COMMENTS
	REVENUE		
	Reserves (Bcf)	*1,250*	
	Production volume (Mmcfd)	*190-250*	
NET BACK	Average differential to Henry Hub	\$0.20 - \$0.50	Difference selling points and Henry Hub (NYMEX basis)
NET BACK	G&C costs	\$0.40 - \$0.70	Gathering and compression costs (to intrastate pipelines)
NET BACK	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

EXTERNAL EVENTS

INDIRECT

- *FED maintains policy rate at 2.25-2.5%*
- *BoT maintains policy rate at 1.75%*
- *FED cut policy rate to from 2.5% to 2.0%*
- *US announced increase tariff on US$112bn Chinese import*
- *SET index dropped by 10pt on lower-than-expected export data*

DIRECT

- *Thai Baht continued to strengthen and achieved 6-year high against US dollar*
- *Six small bombs exploded across Bangkok*
- *RMB hit 11-year low at RMB7/USD*

2Q19 | **3Q19**

CORPORATE EVENTS

- *1Q19 results presentation*
- *Gas business workshop*
- *2Q19 results presentation*
- *Banpu announced Share Repurchase up to THB5 bn and interim dividend payment for 1H19*
- *Banpu and BPP's dividend payment date*

Fx impact analysis guidance on P&L

CURRENCY EXPOSURE	NPAT IMPACT 3Q19 (US$M)	APPROXIMATE FX EXPOSURE (US$M) NET LIABILITY / NET ASSET	NPAT 5% SENSITIVITY 4Q19 (US$M) *Assuming 5% depreciation of local currencies against USD*	
Banpu: THB bond and others	-17.0	-1300	THB & OTHER: 64	*BOT forecast lower growth 2.8% in 2019 and 3.3% in 2020*
ITMG: IDR asset and liabilities	-1.2	1	IDR: 0.7	*BI forecast growth range of 5.0-5.4% in 2019 and 5.1-5.5% in 2020*
CEY: USD asset	0.3	4	AUD: 0.2	*RBA forecast lower growth 2.25% in 2019 and higher growth 3% in 2020*
Net	-18.0		NET: 64	

Banpu group EBITDA breakdown

USD million

Entity	Ownership	4Q18	1Q19	2Q19	3Q19
BANPU & holding companies		351	231	168	164
Centennial Coal (AUD mil)	100%	101	65	20	67
ITM	68%	132	73	54	53
Indominco		34	23	14	23
Trubaindo		60	30	12	9
Bharinto		25	19	12	5
Kitadin		16	4	11	10
Jorong		0	0	0	0
AACI OVERHEAD		-1	-1	-1	-1
Gaohe	45%	107	99	131	92
Hebi	40%	-3	3	1	6
HUNNU COAL		-1	-1	-1	-1
BANPU POWER	79%	28	50	47	40
BLCP	50%	6	29	29	28
HONGSA	40%	89	97	120	105
BIC*		11	12	3	-1
Luannan	70%	3	4	1	0
Zhengding		6	5	0	-1
Zouping		3	2	3	0
U.S. SHALE GAS		36	28	16	

All figures are 100% basis except for Centennial which is equity basis

Consolidated NOT consolidated

OUR WAY IN ENERGY

Note: all ownership 100% unless otherwise shown

*BIC = Banpu Investment China

Banpu group net debt breakdown

USD million

OUR WAY IN ENERGY

Note: all ownership 100% unless otherwise shown

*BIC = Banpu Investment China

Banpu consolidated : operating profit

USD million	3Q19	2Q19	3Q18	QoQ%	YoY%
Total sales revenues*	**654**	**731**	**965**	-11%	-32%
Sales revenue – Coal	586	645	846	-9%	-31%
Sales revenue – Gas	20	25	39	-21%	-49%
Sales revenue – Power	31	41	37	-22%	-14%
Cost of sales	(483)	(569)	(609)		
Gross Profit*	**171**	**162**	**356**	**6%**	**-52%**
Gross profit – Coal	160	148	329	8%	-51%
Gross profit – Gas	0	8	20	-99%	-100%
Gross profit – Power	3	6	6	-49%	-45%
GPM	*26%*	*22%*	*37%*		
GPM – Coal	*27%*	*23%*	*39%*		
GPM – Gas	*0%*	*32%*	*52%*		
GPM – Power	*10%*	*16%*	*16%*		

Note: * including other businesses

Banpu consolidated : operating profit

USD million	3Q19	2Q19	3Q18	QoQ%	YoY%
Gross Profit	**171**	**162**	**356**	6%	-5/%
GPM	***26%***	***22%***	***37%***		
SG&A	(92)	(88)	(84)		
Royalty	(57)	(63)	(84)		
Income from associates	63	77	65		
Other income and Dividend	5	10	5		
Mining property	(12)	(9)	(8)		
EBIT	**78**	**89**	**249**	-12%	-69%
EBIT – Coal	48	44	208	11%	-77%
EBIT – Gas	(5)	3	9	-245%	-148%
EBIT – Power	34	42	32	-19%	7%
EBITDA	**164**	**168**	**310**	-2%	-47%
EBITDA – Coal	114	105	250	9%	-54%
EBITDA – Gas	11	16	24	-33%	-53%
EBITDA – Power	39	47	37	-17%	6%

Banpu consolidated : net profit

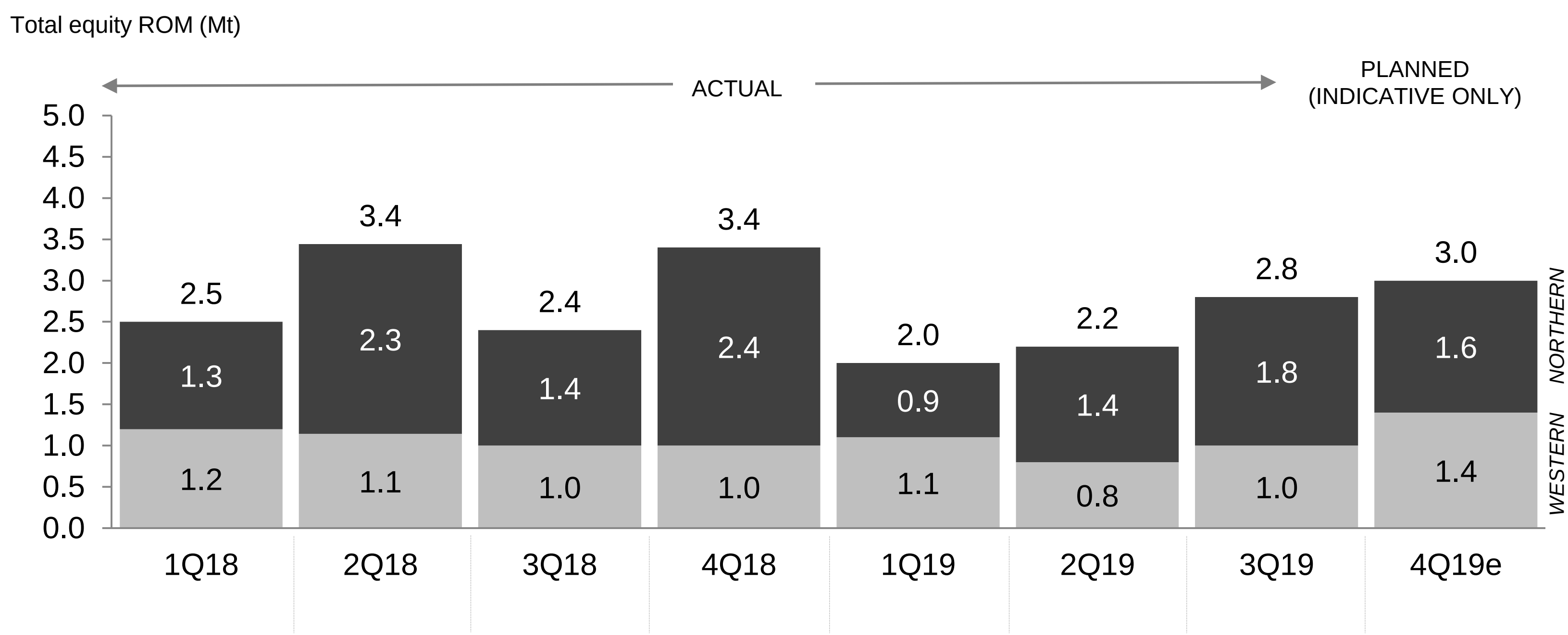
USD million	3Q19	2Q19	3Q18	QoQ%	YoY%
EBIT	**78**	**89**	**249**	-12%	-69%
Interest expenses	(45)	(46)	(43)		
Financial expenses	(1)	(1)	(2)		
Income tax (core business)	(29)	(15)	(43)		
Minorities	(16)	(17)	(36)		
Net profit before extra items	**(13)**	**9**	**126**	Na.	Na.
Non-recurring items*	(2)	3	(3)		
Gain (Loss) on Derivatives Transactions	13	15	(29)		
Income tax (non - core business)	-	(2)	(0)		
Deferred tax income (expenses)	17	18	7		
Net profit before FX	**15**	**44**	**101**	-67%	-86%
FX translation	(18)	(41)	(25)		
Net Profit	**(3)**	**3**	**76**	Na.	Na.
EPS (US$/share)	(0.001)	0.001	0.015		

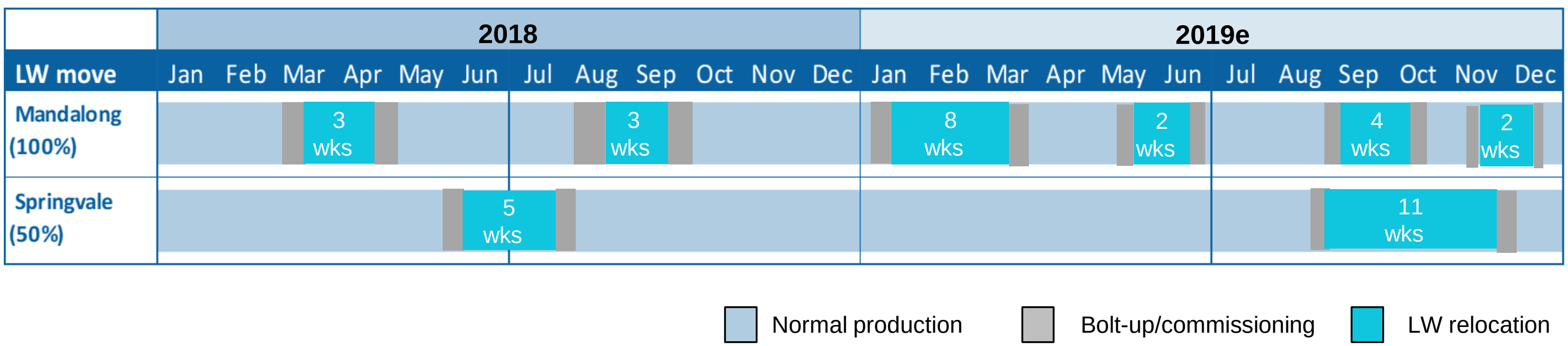
Note: * income from non-core assets and other non-operating expenses

Centennial : Income statement

USD million	3Q19	2Q19	3Q18	QoQ%	YoY%
Sales volume (Mt)	**2.7**	**2.9**	**3.4**	-5%	-19%
Sales revenue	172.2	200.1	248.4	-14%	-31%
Cost of Sales	(125.3)	(179.3)	(200.4)		
Gross Profit	**46.9**	**20.9**	**48.0**	125%	-2%
GPM	27%	10%	19%		
SG&A	(23.2)	(26.2)	(16.4)		
Royalty	(11.3)	(11.8)	(13.9)		
Other income	1.6	0.1	1.9		
Other expenses	-	-	-		
EBIT	**14.1**	**(17.1)**	**19.6**	na.	-28%
Interest expenses	(5.5)	(5.6)	(6.1)		
Financial expenses	(0.5)	(0.5)	(1.2)		
Gain (loss) on exchange rate	0.3	0.6	1.8		
Gain (loss) on derivative	2.3	2.2	(9.3)		
Corporate income tax	-	6.2	-		
Deferred tax income	(3.2)	-	(1.1)		
Net Profit	**7.4**	**(14.3)**	**3.7**	na.	99%

Australia coal: quarterly equity rom output





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.

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