



Banpu 3Q23 results

Investor and analyst update

15th November 2023



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01

Highlights

3Q23

3Q23 highlights

Key financial metrics

\$462 M

EBITDA

Resilient performance despite low commodity prices, supported by Power business

\$59 M

NPAT

Impacted by lower coal and gas prices

0.95 x

ND/E

ND/E increased from 0.84 x in the previous quarter

Key operational metrics



864 MMcfed

Gas production



951 MW

Renewable power*



35.3 Mt

Coal sales**



4,008 MW

Thermal power*

Note: *Committed capacity; **Coal sales target 2023

Key developments



Thailand battery investment

Invested c.\$20 M for a 40% stake in SVOLT Energy Technology (Thailand), a li-ion battery manufacturer with a committed production capacity of 2 GWh



CCUS project in the US

Commenced the initial injection of CO₂, generated as byproduct from BKV's production, at Barnett Zero



Solar rooftops capacity expansion

Additional 9 MW capacity secured in Thailand to reach 96 MW in total and 9.6 MW in Indonesia to reach 16 MW in total for the quarter

Banpu: ESG leadership and credit rating recognition

BANPU ESG RATINGS



A

rating for three consecutive years for demonstrating resiliency towards long-term ESG risks and excellent risk management and mitigation relative to peers.

Member of
**Dow Jones
Sustainability Indices**
Powered by the S&P Global CSA

Awarded since 2014

Recognized as a constituent of DJSI for conducting business with the highest ESG standards.



Awarded since 2015

Recognized in THSI for sustainable operations and responsible investment principles.



Honor since 2018

Highest distinction in SET's Sustainability Excellence Award for at least 4 consecutive years.



AAA

rating awarded by the SET ESG Ratings for strong ESG disclosures, including environmental management practices and interactions with key stakeholders.



5 stars & 5 coins

for the CGR Checklist 2023 from the Thai Institute of Directors Association (IOD) and the AGM Checklist 2023 from the Thai Investors Association (TIA), respectively.



Sustainability Disclosure Award 2022

from Thaipat Institute for consistent and excellent conduct of ESG principles.



ASEAN Asset Class

Awarded in 2021 ASEAN Corporate Governance Scorecard for excellent corporate governance.

CREDIT RATINGS



Best Public Company of the Year 2023 in the SET & Best Company of the Year 2023 in Resources Industry

Awarded by Money & Banking Magazine for Banpu's exceptional ability to effectively manage business and organization.



A+ Credit rating

with a **'stable'** outlook on the company and senior unsecured debentures reflecting the company's stable business growth.

Banpu: ESG recognition across the subsidiaries



Responsibly Sourced Gas (RSG) Gold Rating Certification

BKV's NEPA wells and facilities were awarded with TrustWell Gold accreditation for operational excellence, safety, and environmental stewardship, allowing BKV to market and sell certified RSG to the market.

Gold accreditation is awarded to top 25% most responsible gas operators by Project Canary, a leading and widely regarded 3rd party certification company.

The certification was awarded to 100% of BKV's NEPA production and a portion of BKV's Barnet production in 2022.



Best Non-Financial Sector Award

Awarded at the 14th IICD Award in 2023 for the continued commitment and performance towards corporate governance.



Platinum Plus & Green Elite Awards

Awarded at the 2023 Corporate Emission Transparency Awards for transparency and consistency in emission reporting.



Golden Trophy

Awarded at the TOP CSR Awards 2023 after maintaining the 5-Star Trophy for three consecutive years, along with a TOP Leader on CSR Commitment awarded to Mr. Mulianto, President Director at ITM.



ESG EXCELLENCE

Established ESG Committee in March 2023 to supervise ESG targets and performance



5th Year
Listed on THSI



Commended Sustainability Award
Awarded by SET in 2022



AAA rating
Awarded by SET ESG Ratings



5 Stars & 5 Coins
Awarded by IOD and TIA



ASEAN Asset Class
from 2021 ASEAN Corporate Governance Scorecard

Banpu: recent ESG updates at Indominco mine



Conservation Function

The Indominco arboretum has been designated as a versatile conservation zone within the post-mining region. Its purpose encompasses the conservation flora and fauna, as well as habitats or areas prioritized for wildlife conservation.



Education & Tourism Function

‘Good Mining Practice Tour’ as a learning medium for students and the general public to understand the mining & post-mining reclamation processes which can ultimately restore the ecosystem to its original function.



Germplasm, Utilization Function

The sourcing of seeds from local plant species within the Indominco mine areas, potential germplasm source development, and future cultivation of non-timber forest products like Kelulut Honey will be central to community empowerment programs.



The background of the slide features a composite image. On the left, a large, semi-transparent number '02' is overlaid on a dark blue gradient. The rest of the background is a photograph of a city skyline, likely Hong Kong, with a prominent bridge and a river. A large white wind turbine is positioned on the right side of the image, and a small airplane is visible in the upper left sky area.

02

Focus:

Banpu CVC

Banpu: driving Greener, Smarter transformation through CVC

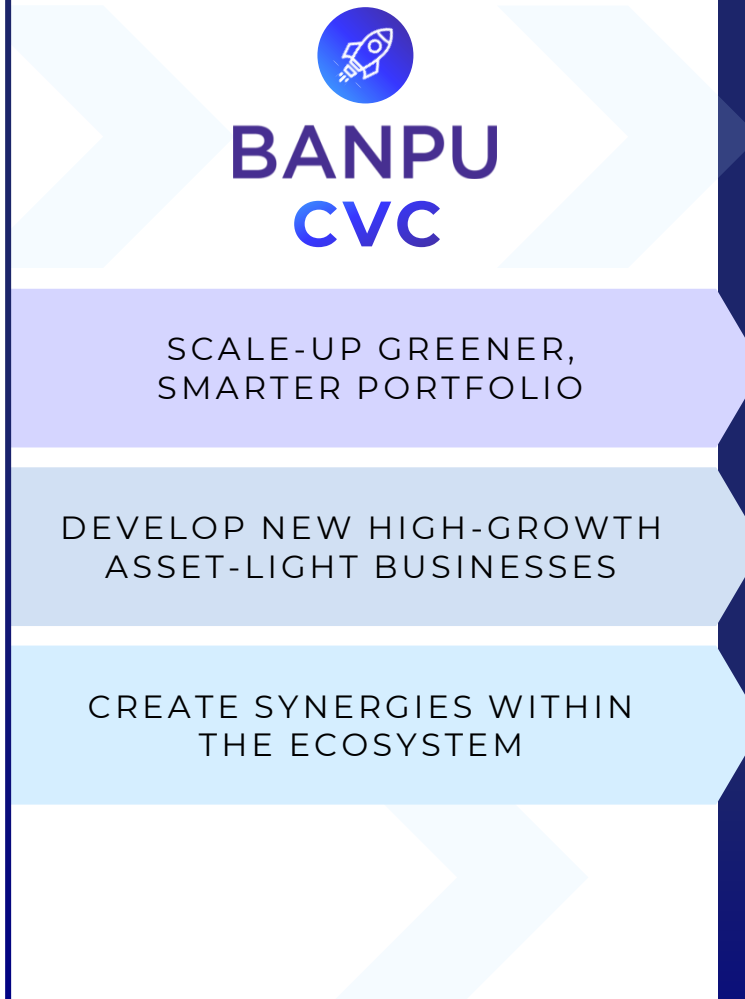


BANPU

INTEGRATED ENERGY
SOLUTIONS PROVIDER



Strong cash flow from **Energy Resources businesses**, stable cash flow from **Energy Generation businesses** and high upside potential from **Energy Technology assets**



Banpu CVC: vision and mission



Vision

**Empowering Innovation,
Fueling the Future**

Mission

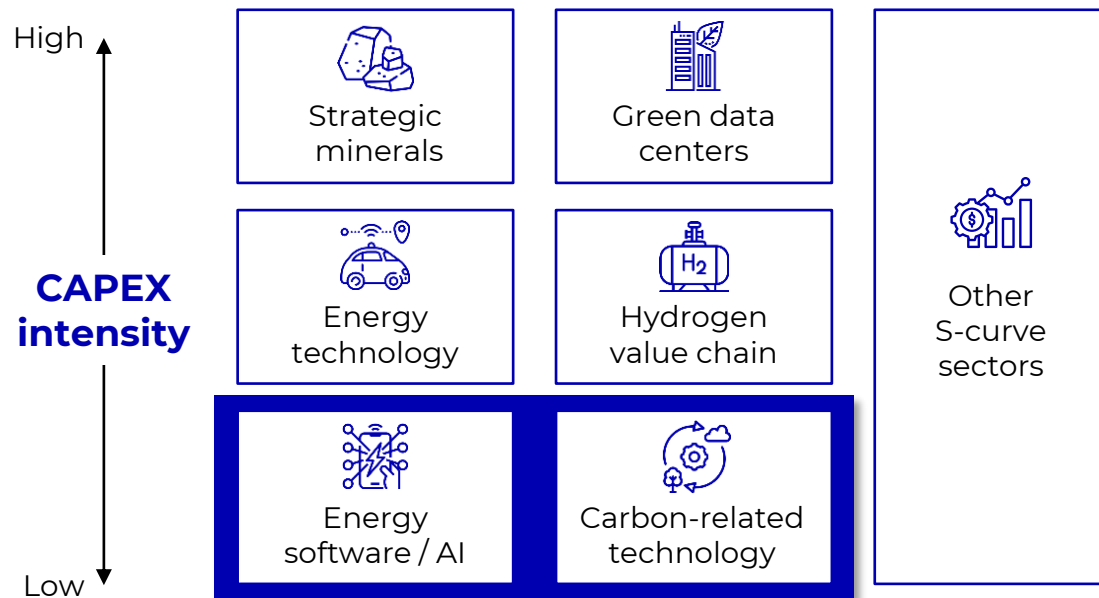
**Accelerate Banpu Greener,
Smarter strategy by...**

Strengthening Banpu high-growth
asset-light strategy and

Building new businesses to
capture the growth of
decarbonization trends

Banpu CVC: investment criteria

FOCUS SECTORS



Top investment priority

- 1 Portfolio decarbonization:** through investments and partnerships that leverage Banpu's existing competitive advantages
- 2 Asset-light investments:** focusing on acquiring new capabilities that can be scaled-up quickly across geographies

FOCUS INVESTMENT STRATEGY

Stage of company:	EARLY	GROWTH	LATE / PUBLIC
Type of investment:	FUND	COMPANY	PROJECT

Focus area

Non-focus area

Expanding networks of private equity (PE) and venture capital funds (VC) to build investment pipeline for the group and CVC's future investments

CURRENT PORTFOLIO



Banpu CVC: investment portfolio

Investment Pathways

Harvest networks created to build JVs and partnerships with minimal use of capital

Invest directly into companies or create a new business if an opportunity arises

Invest in additional funds to establish a pipeline for later-stage companies to work with

Direct investments

DECARBONIZATION



AirCarbon Exchange (ACX)

Cost-efficient blockchain platform tokenizing carbon credits, facilitating efficient trading and investment in emission reduction projects, and providing access to market expansion opportunities. ACX has recently been selected by the Indonesia Stock Exchange (IDX) to power the Indonesia Carbon Exchange platform and support Indonesia's aim for net zero emissions by 2060.



Fiutur

Pioneer in solutions for ESG commodities market, operating within Expansiv — a marketplace for carbon offsets and renewable energy. Fiutur plays an active role in the global carbon market.

Indirect investments

Through private equity and venture capital funds

DECARBONIZATION

Accelerating the energy transition with investments promoting global decarbonization and positive environmental and social impacts.



Strategic minerals



Carbon credits



Nature-based solutions

ENERGY TECH.

Solidifying Banpu's foundation in an evolving ecosystem that emphasizes the importance of agility and strategic alignment in navigating the digital transition.



New energy



Smart mobility



AI / software

INFRASTRUCTURE

Diversifying investments into real estate and infrastructure to reap the benefits of a more robust portfolio and amplified sustainability impact.



Data centers

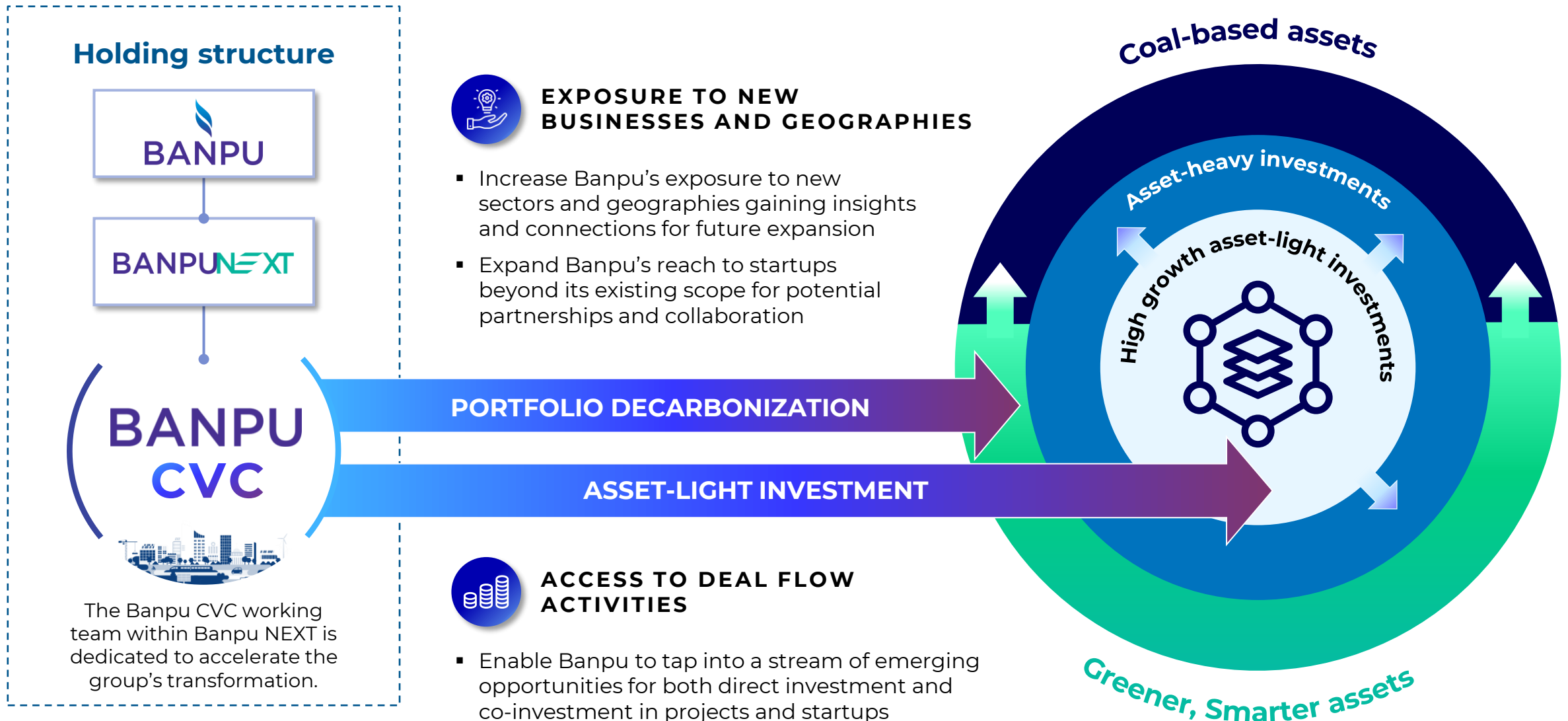


Industrial estates



Retail & commercial

Banpu CVC: a catalyst for innovation in the Banpu ecosystem



Banpu CVC: leadership team

Sinon Vongkusolkit

CEO of Banpu NEXT

Instrumental in various strategic initiatives and Banpu group transformation through corporate finance, investment, and project management roles

Somruedee Chaimongkol

CEO of Banpu

Leading the group's Greener, Smarter transition since being appointed as CEO through establishment of US Gas and Energy Technology businesses

Smittipon Srethapramote

Head of CVC

Extensive experience (20+ years) in clean technology, media, global financials, fintech, infrastructure, retail and consumer staples

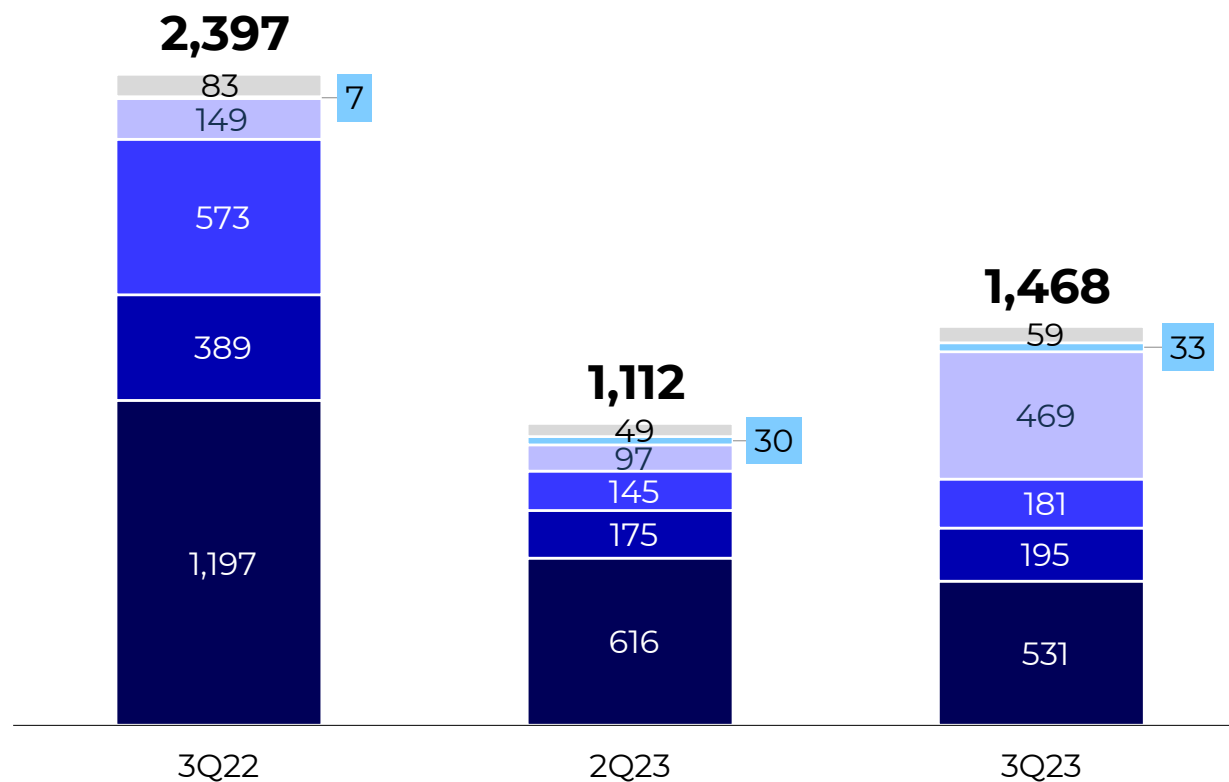


03

Financial Summary

Banpu consolidated sales revenues – 3Q23

USD million



+32% QoQ

-39% YoY

Others*

+21% QoQ

-29% YoY

Energy technology

+12% QoQ

+411% YoY

Power

+386% QoQ

+215% YoY

Gas

+25% QoQ

-68% YoY

Coal Australia

+11% QoQ

-50% YoY

Coal Indonesia

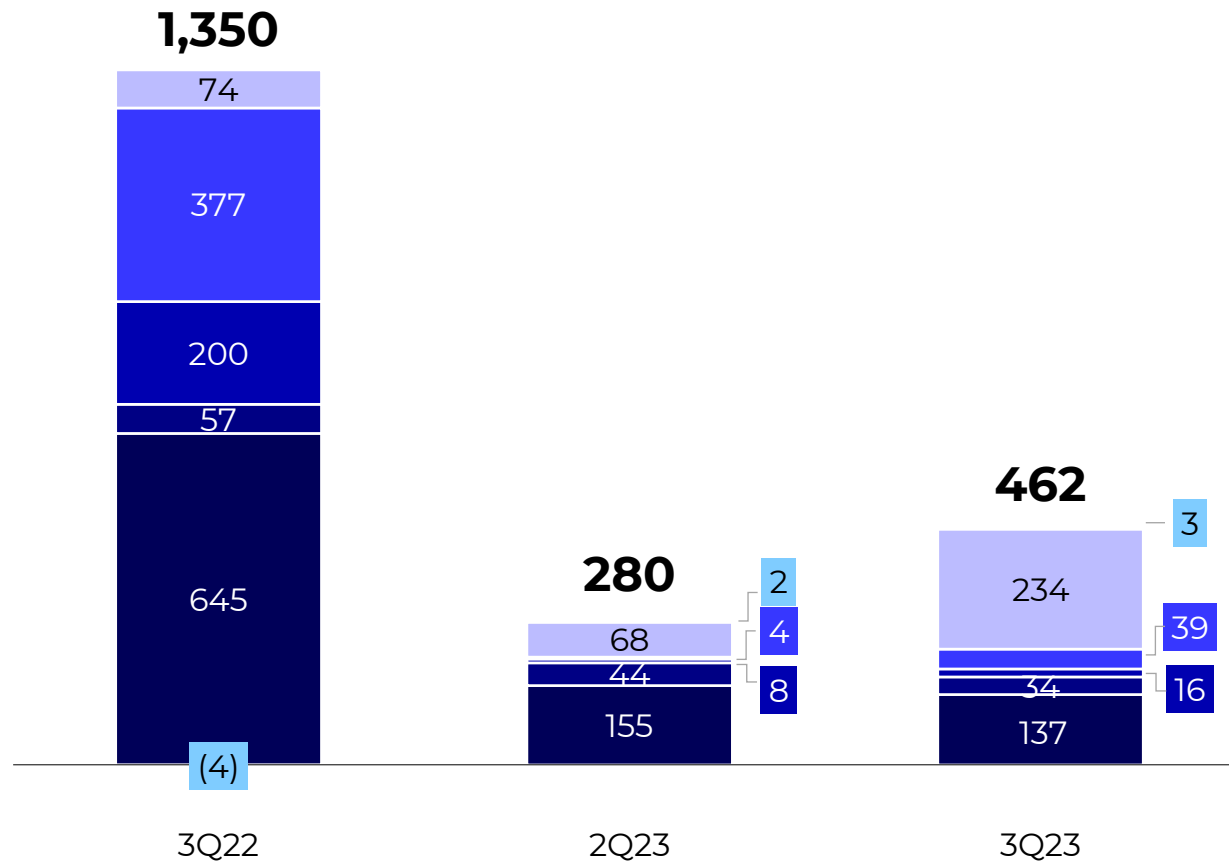
-14% QoQ

-56% YoY

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

Banpu consolidated EBITDA – 3Q23

USD million



+65% QoQ

-66% YoY

Energy technology

+42% QoQ

n.a.

Power

+245% QoQ

+216% YoY

Gas

+952% QoQ

-90% YoY

Coal Australia

+101% QoQ

-92% YoY

Coal China

-22% QoQ

-40% YoY

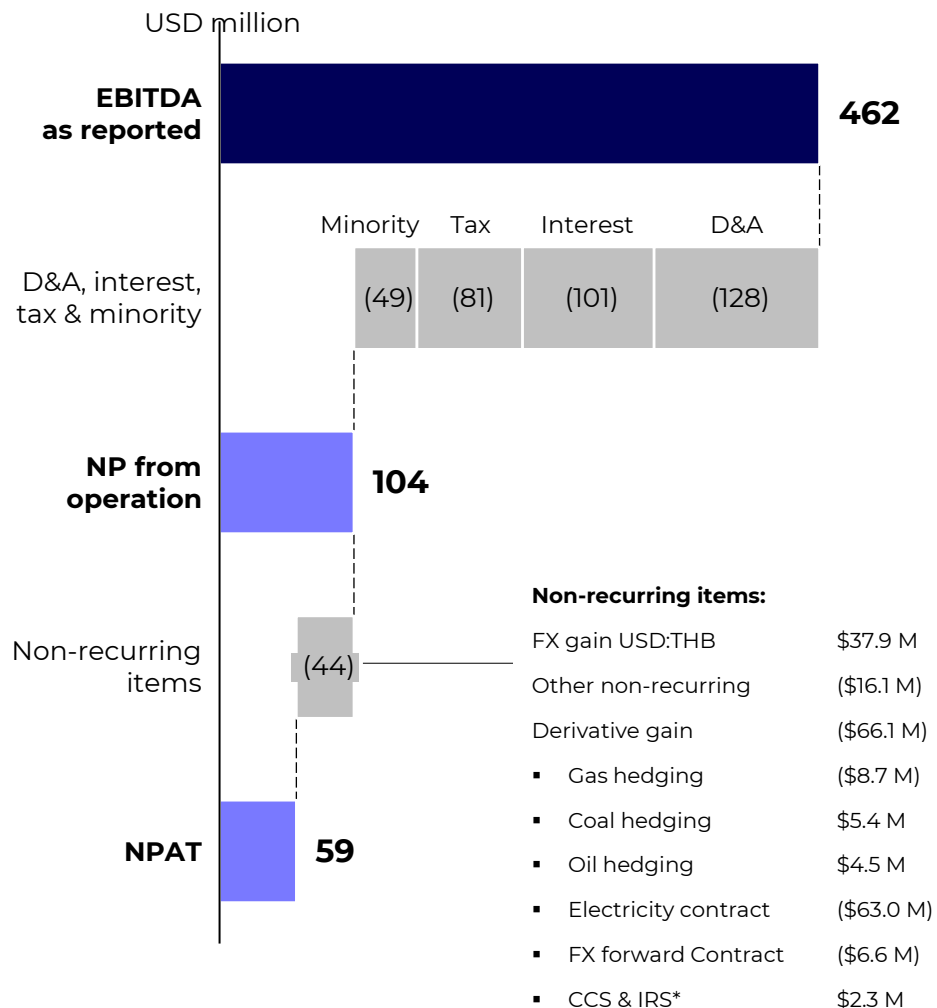
Coal Indonesia

-11% QoQ

-79% YoY

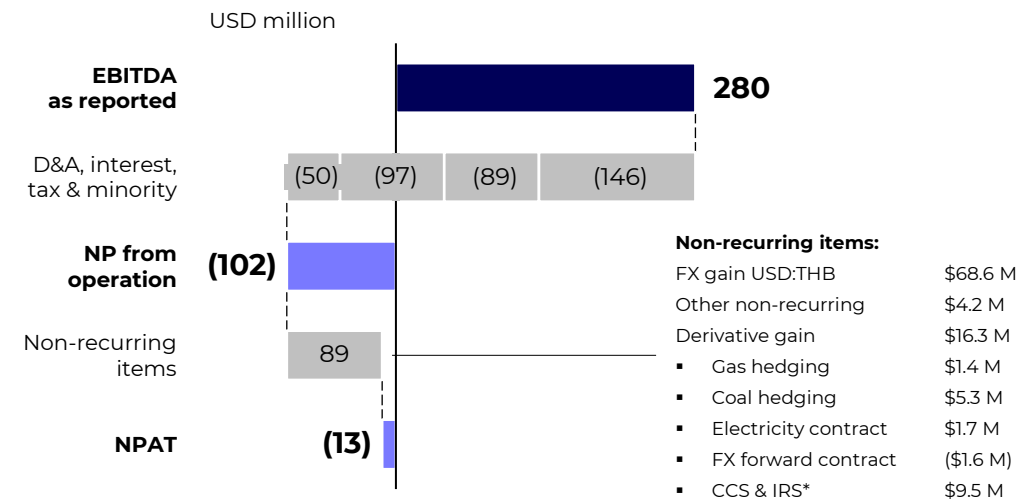
Banpu consolidated NPAT – 3Q23

3Q23 NET PROFIT AFTER TAX

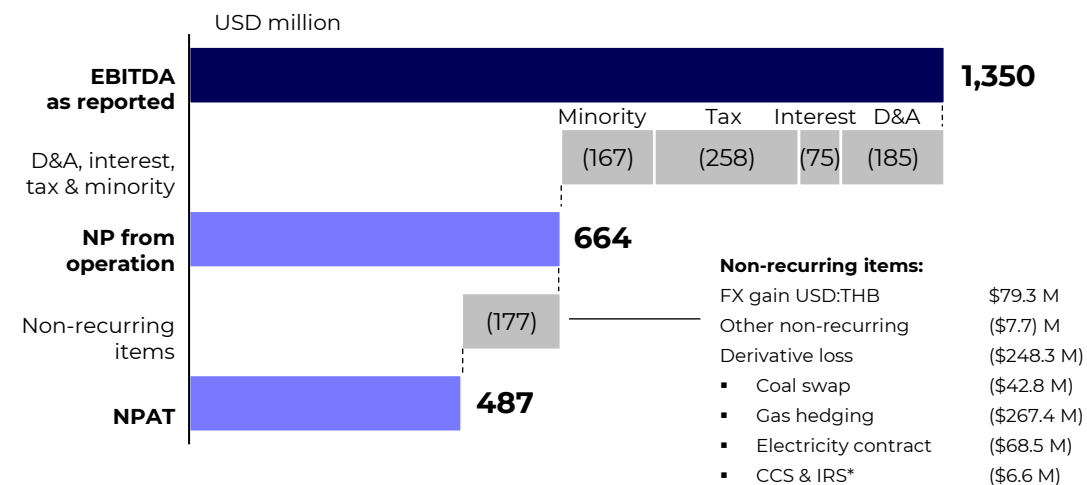


Note: *Cross currency swap, interest rate swap

2Q23 NET PROFIT AFTER TAX



3Q22 NET PROFIT AFTER TAX



04

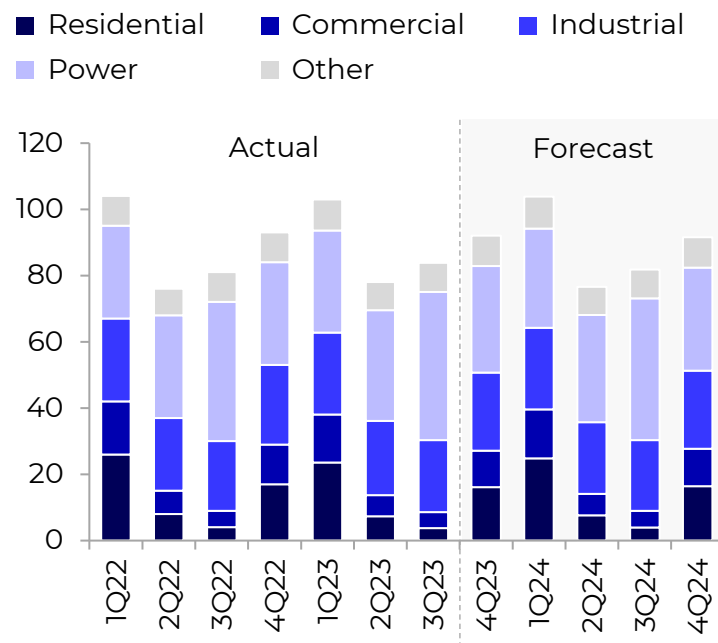
Energy Resources



U.S. gas market update

US CONSUMPTION & PROJECTION

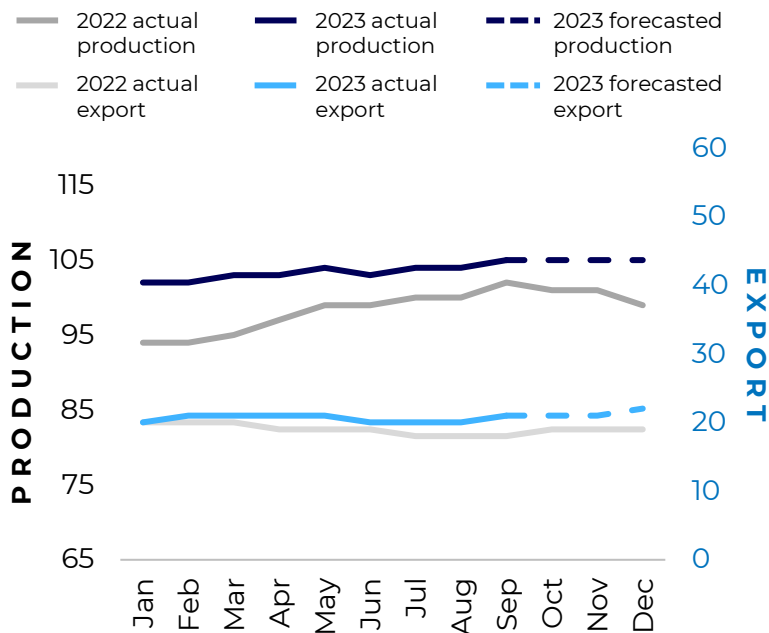
Unit: Bcf/d



- Consumption in the US averaged at 84 Bcf/d in 3Q23, up 7% from 2Q23. Power demand spiked from cooling needs due to the record high temperature across the country.
- Consumption is forecasted to average at around 89 Bcf/d in 2023, a similar level to 2022.

US NATURAL GAS PRODUCTION

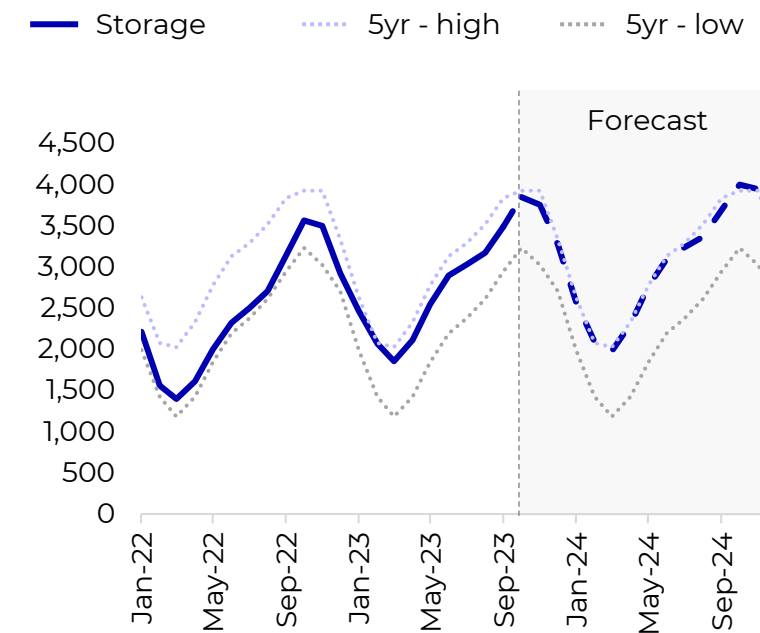
Unit: Bcf/d



- U.S. natural gas production reached 104 Bcf/d in 3Q23, up 1% QoQ and 4% YoY, driven by Haynesville production and associated gas from productive Permian Basin oil wells, despite declining rig counts since 1Q23
- U.S. LNG exports averaged 11 Bcf/d in 3Q23, down 3% QoQ and 17% YoY, largely from planned maintenance in some LNG plants. However, most facilities had completed their maintenance by September.

U.S. STORAGE LEVEL

Unit: Bcf



- Natural gas inventories in September 2023 ended at 3.5 Tcf, 5% higher than the 5-year average and around 0.2 Tcf higher YoY from lower refilling rate.
- The inventories are expected to enter winter with a surplus of 6% compared to the 5-year average, totaling 3.9 Tcf.

Source: EIA Short-Term Energy Outlook (October 2023)

U.S. gas: gradual recovery of gas prices from 3Q23

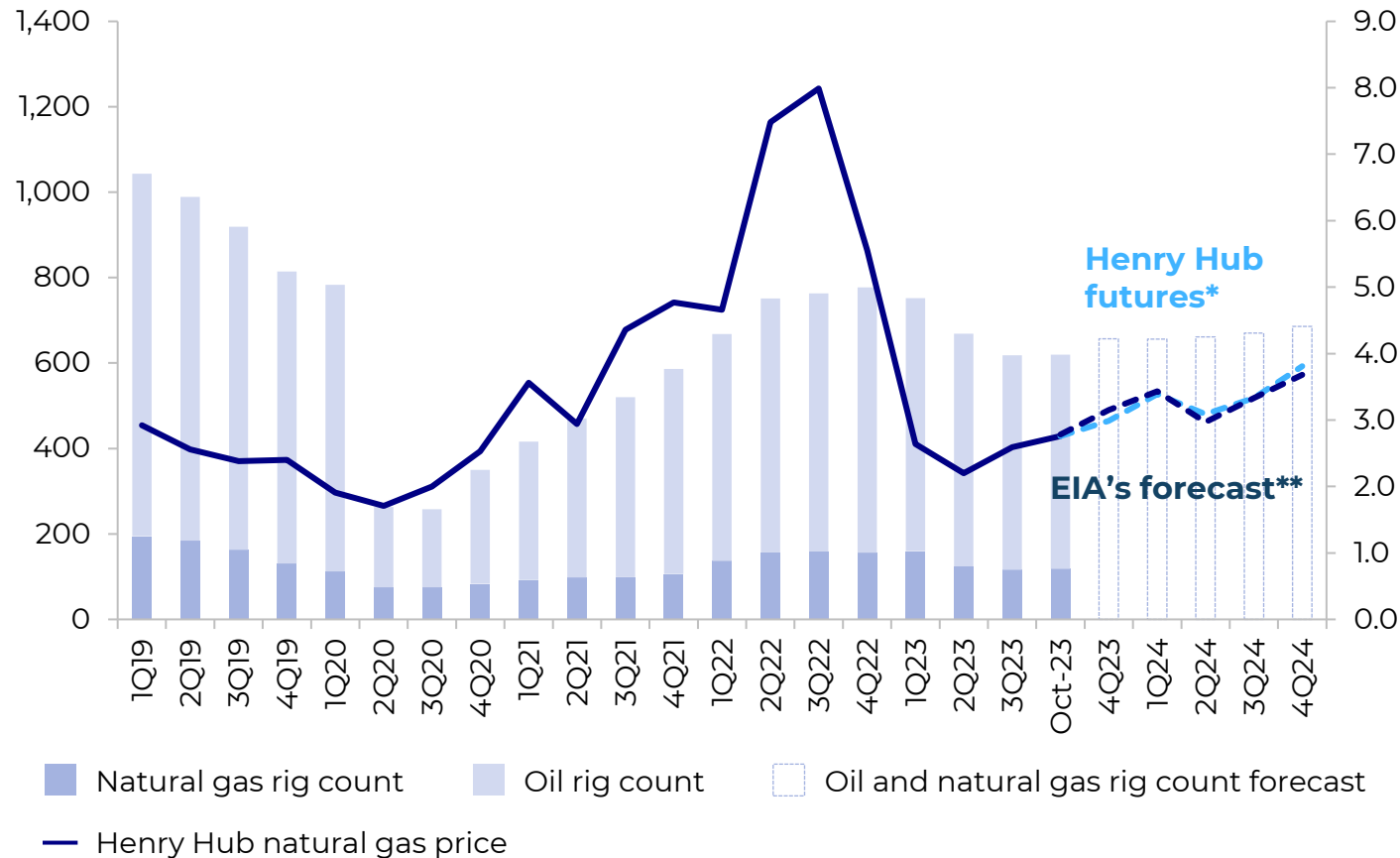
US RIG COUNT VS HENRY HUB PRICE

Us oil and natural gas rig count

Unit: rigs

Henry hub spot price

Unit: \$/MMBtu



COMMENTS

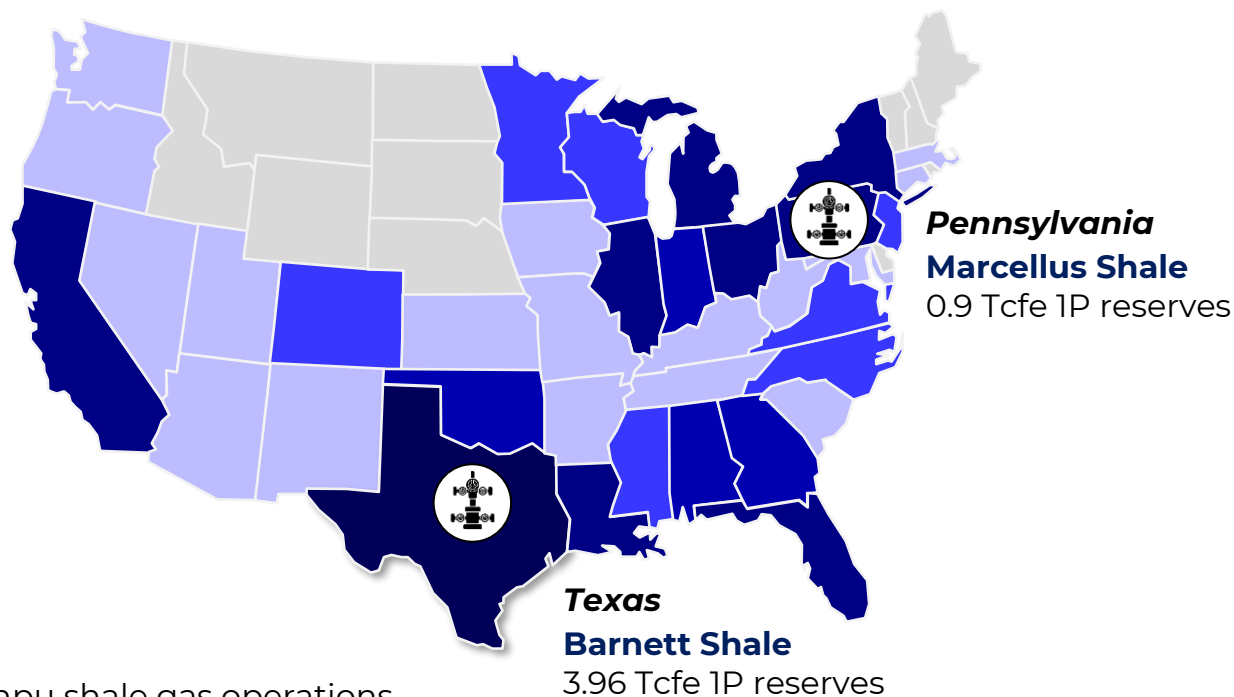
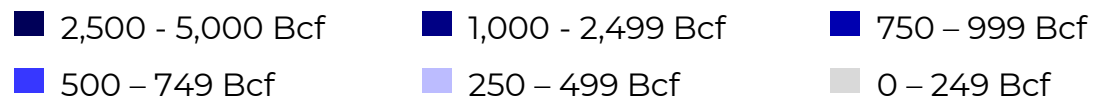
- Natural gas prices in 3Q23 recovered with stronger-than-expected demand for electricity for air-conditioning, offsetting by a higher-than-average inventory level and record high gas production.
- Oil and gas rigs decreased in 3Q23, down 8% from 2Q23 and about 20% lower than the end of 2022 level.
- Henry Hub futures to rise to \$3.0/MMBtu in 4Q23 and further to \$3.5/MMBtu in 1Q24 as storage levels stabilize and demand grows.

Note: *As of October 25th, 2023; **Short-Term Energy Outlook (October 2023)

Source: EIA Short-Term Energy Outlook (October 2023), Baker Hughes US natural gas rotary rig count (October 2023)

Banpu Gas: 3Q23 highlights

US DRY GAS CONSUMPTION 2022 BY STATE*



Banpu shale gas operations

Average local price**

\$2.42/Mcfe +26% QoQ

Sales volume

78 Bcfe -3% QoQ

EBITDA***

\$39 M +952% QoQ

Notes: *As of September 29, 2023; ** Average local price = Henry Hub - basis differential; *** IFRS EBITDA. Significant differences between IFRS and BKV US GAAP EBITDAX include treatment of derivative gains and losses, depletion expense, accretion expense, stock compensation expense, BNAC expenses, equity income, and contingent consideration gains and losses for asset acquisitions

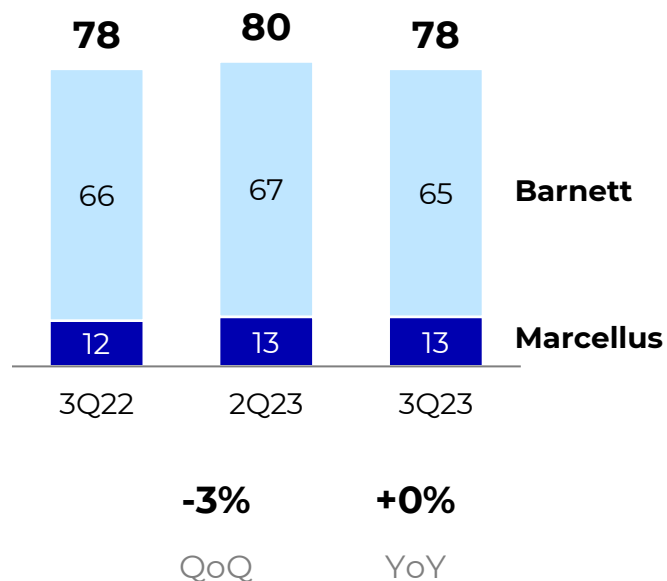
Source: EIA

Banpu Gas: 3Q23 performance

3Q23 EBITDA of \$39 M characterizes our resiliency and ability to survive period of commodity volatility through positive cash flow generation.

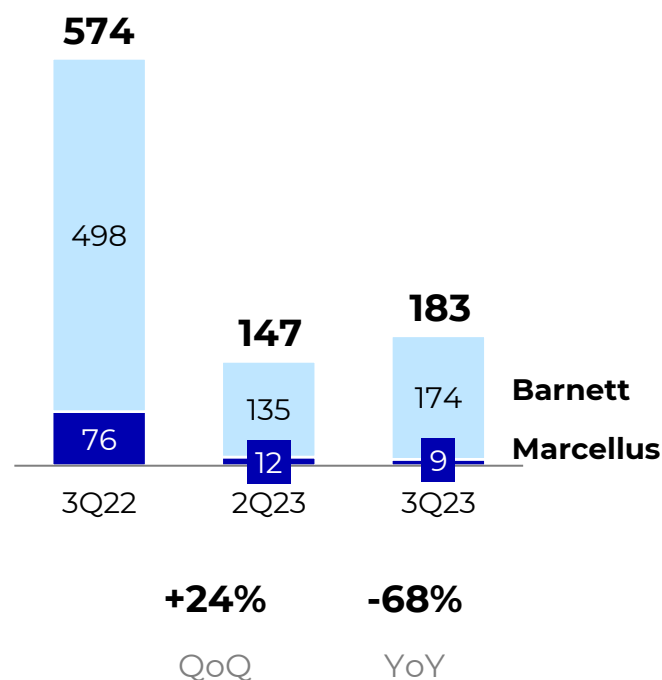
SALES VOLUMES

Unit: Bcfe*



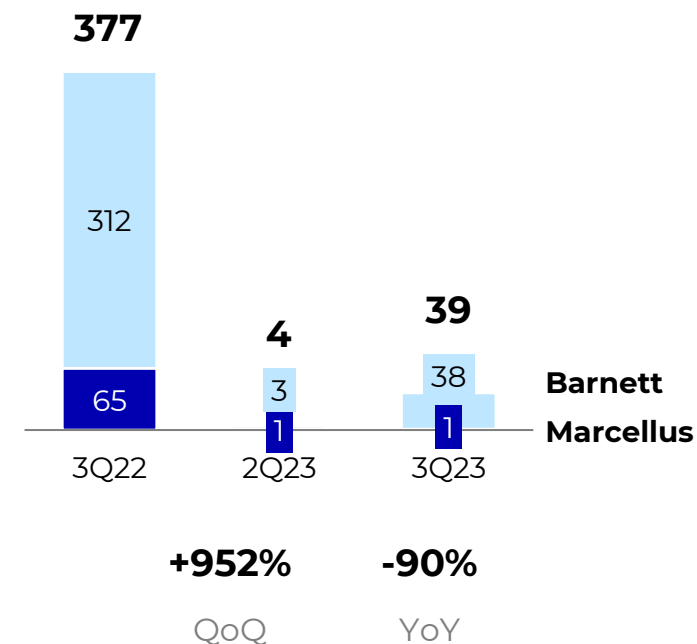
TOTAL REALIZED REVENUE**

Unit: US\$M



EBITDA***

Unit: US\$M



Note: *Bcfe = Billion cubic feet equivalent; **IFRS total realized revenue. Significant differences between IFRS and BKV total revenues and other operating income include net derivative gains and losses, marketing, non-operated midstream revenues, and others; ***IFRS EBITDA. Significant differences between IFRS and BKV US GAAP EBITDAX include treatment of derivative gains and losses, depletion expense, accretion expense, stock compensation expense, BNAC expenses, equity income, and contingent consideration gains and losses of asset acquisitions;

Banpu Gas: CCUS project progress

Project timeline



The well head at the BKV Barnett Zero underground injection control well.



A pipeline seamlessly transports CO₂ from EnLink Midstream's processing plant to the BKV compressor facility for underground sequestration.

Barnett Zero Project



PROJECT OVERVIEW

- Natural gas produced at BKV's operations in the Barnett is transported to a processing plant, where the CO₂ byproduct is capture, compressed and geologically sequestered through a new injection well.
- Barnett Zero's CO₂ injection commenced within a year and a half of Phase 1 FID, establishing it as the first commercial carbon sequestration well in the US.

PROJECT HIGHLIGHTS

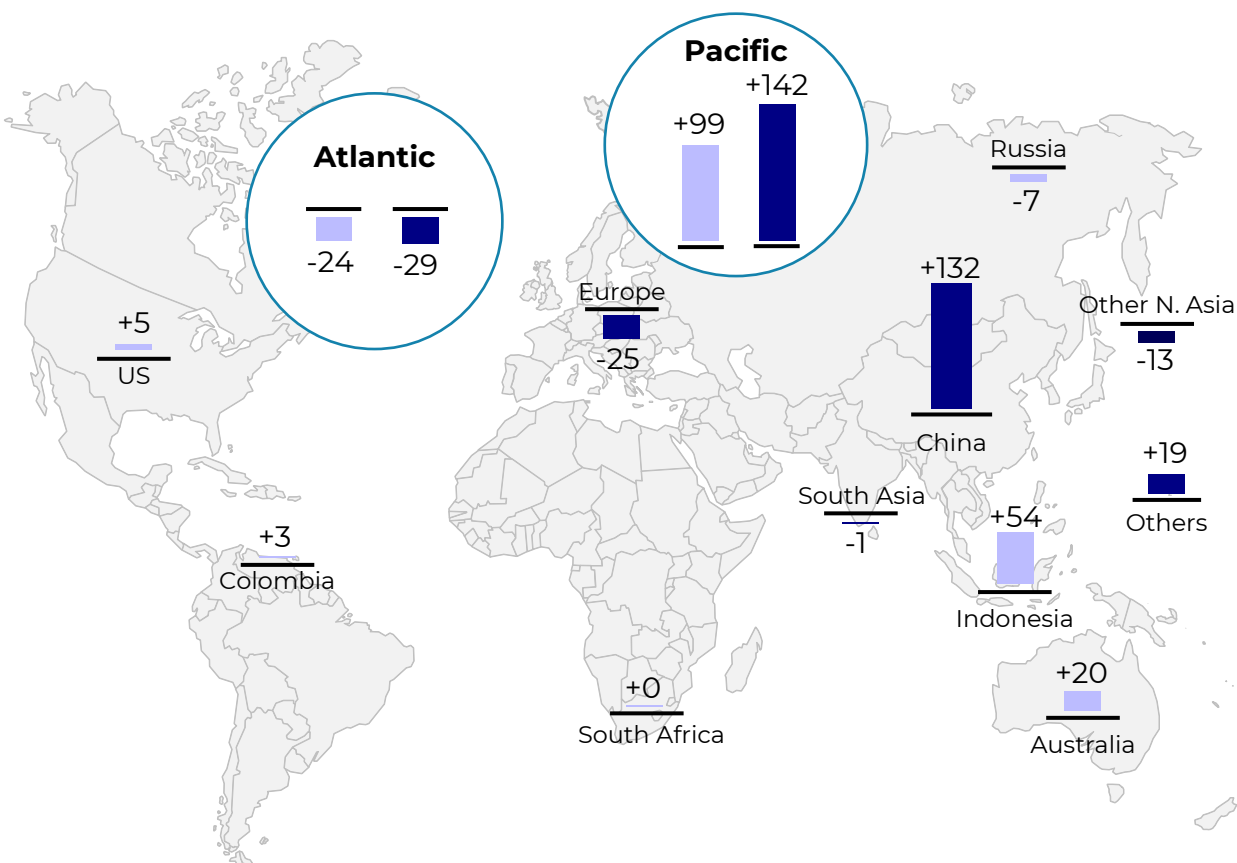
 **Up to 210,000 tons CO₂e**
Estimated average injection rate per year

 **US\$ 34 M**
Estimated project cost

Global thermal coal market

COAL DEMAND AND SUPPLY CHANGE – 2023e VS 2022

Unit: Mt ■ Supply ■ Demand



Note: *JKT stands for Japan, South Korea and Taiwan

Demand trends

In 2023, seaborne thermal coal is expected to experience the largest growth in history. While Europe and JKT* expect reduced coal use, especially for high CV coal. Strong demand for lower CV coal is expected in China and Southeast Asia, with stable coal imports in India.

- **China:** Increased thermal coal imports in 2023 due to domestic supply concerns and high domestic prices are expected to persist through the end of the year.
- **India:** Robust coal consumption was driven by economic growth and weak hydro generation, leading to continued reliance on thermal coal imports.
- **JKT:** Weaker coal consumption from reduced power demand, stronger generation from nuclear and renewable power, and the risk of lower winter demand due to El Niño.
- **Europe:** Coal market remains weak due to lower power demand, high renewables, strong gas supply, and high gas storage affecting coal use.

Supply trends

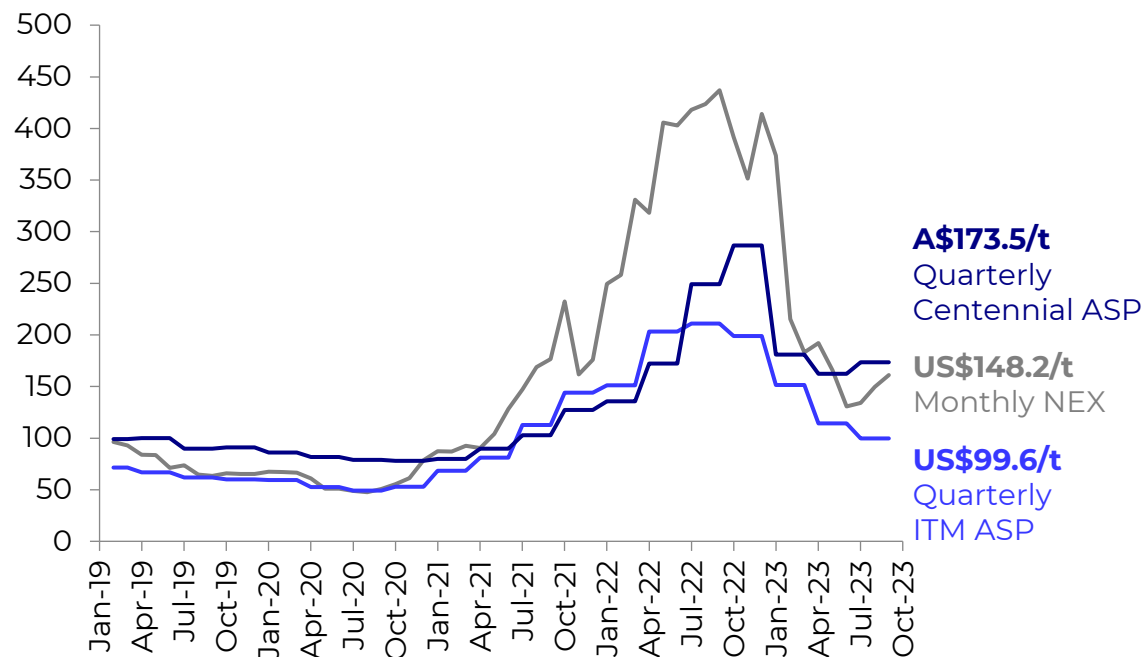
Global thermal coal supply is improving, with rising Australian exports and stable Indonesian supply in Q4. Russian exports exceeded expectations due to competitive prices and strong Chinese demand.

- **Indonesia:** Exports are expected to remain high until the end of the year, despite technical issues and supply delays in November and December due to late approvals for the revised RKAB work plan.
- **Australia:** Exports are set to increase, driven by robust Chinese demand.
- **Others:** Russian exports are inconsistent due to logistics. South Africa has export limitations due to poor railing performance. Colombian exports may be disrupted by rail blockades and protests.

Banpu ASPs vs thermal coal benchmark prices

BANPU ASP VS BENCHMARK PRICES

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



COMMENTS

- Seaborne premium thermal coal market has been fairly stable throughout Q3, with the weekly GCNewc fluctuating within a narrow range of \$120-160.
- Similarly, the lower-quality thermal coal market, which saw a decline in the latter part of Q2, has remained stable in Q3. ICI2 has hovered between \$85-90, ICI3 within \$70-77, and ICI4 maintained a narrow range of \$50-55. Despite increased supply from Indonesia, robust import demand from China in Q3 has provided significant support to the lower spec thermal coal market.
- We anticipate a continuation of steady growth in the global seaborne thermal market until early 2024, and overall demand / supply dynamics to tighten, particularly as major demand areas in the northern hemisphere enter peak season.

NEX** (10th November 2023)

US\$121.3/t

ITM ASP* (3Q23)

US\$99.6/t

-13% QoQ

CEY ASP (3Q23)

A\$173.5/t

+10% QoQ

ASP domestic (3Q23)

A\$144.3/t

+35% QoQ

ASP export (3Q23)

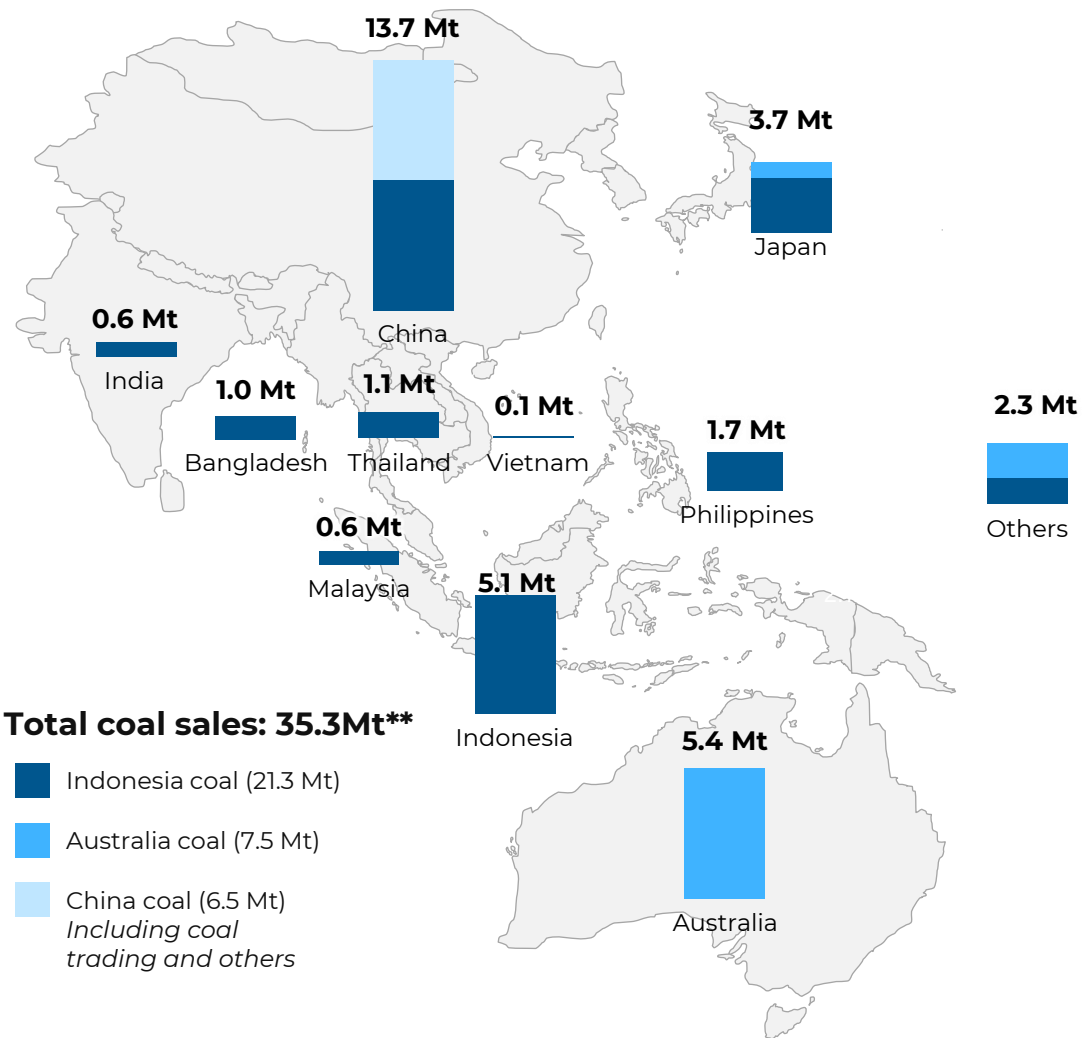
A\$264.7/t

-4% QoQ

Note: *Includes post shipment price adjustments as well as traded coal. CEY sales volume 3Q23 : 62% domestic & 38% export, 2Q23 : 69% domestic & 31% export; **The Newcastle Export Index (NEX)

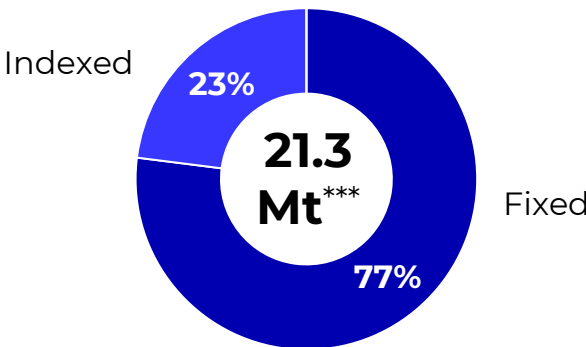
Banpu Mining: group coal sales and pricing status 2023e

2023e COAL SALES SOURCE* – DESTINATION ANALYSIS

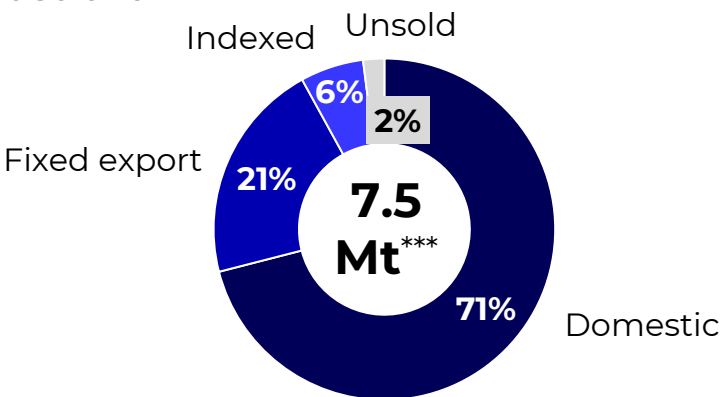


COAL SALES PRICING STATUS (2023e)

Indonesia

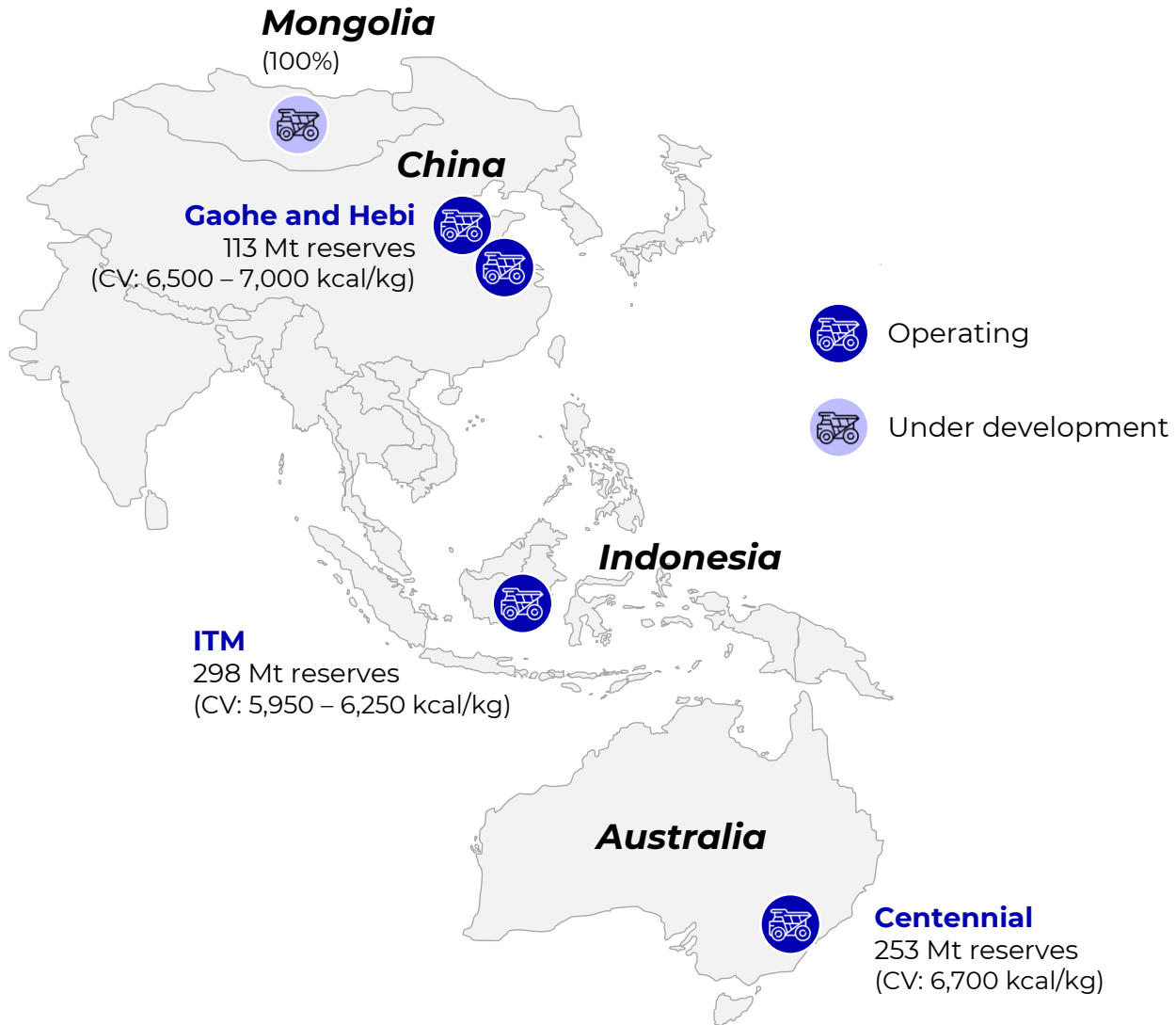


Australia



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; *** Target sales; Coal sales includes third-party sourced coal

Banpu Mining: 3Q23 highlights



Production volume

9.6 Mt +8% QoQ

Sales volume

10.2 Mt -3% QoQ

EBITDA

\$188 M -9% QoQ

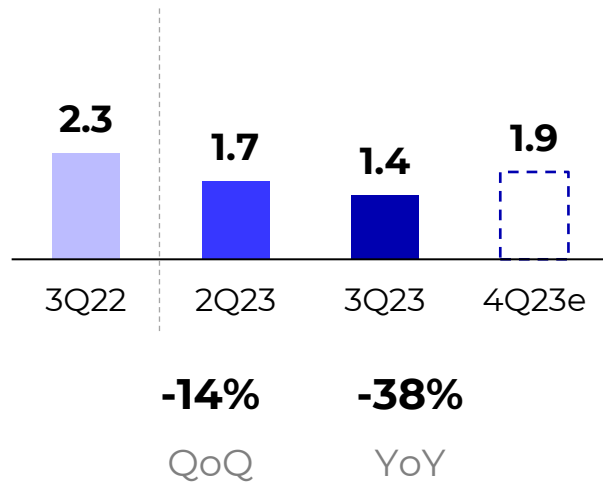
Note: Coal reserves at end 2022 and based on 100% basis. CV figures are air-dried basis

Banpu Mining: operational summary

ROM PRODUCTION AND KEY UPDATES (Mt)

Australia Coal

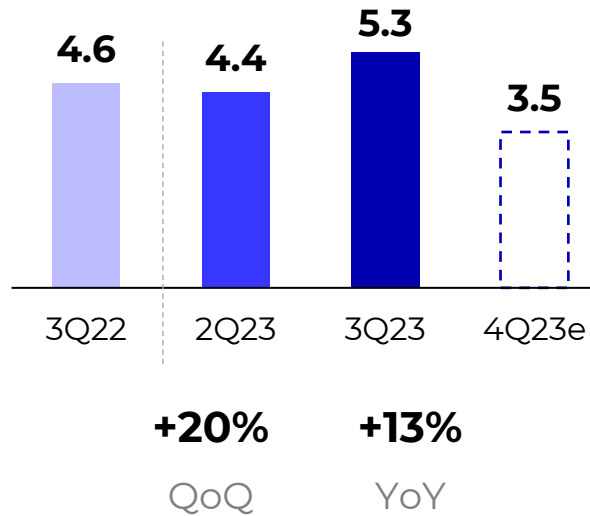
2023 target: 6.8 Mt



- Airly, Clarence and Myuna delivered planned production targets.
- Mandalong's first low height longwall block faced challenges due to a thinning coal seam.
- Springvale's longwall operations were impacted by challenging strata conditions in the predicted lithology zone.
- 4Q23 production is forecasted at 1.9 Mt.

Indonesia coal

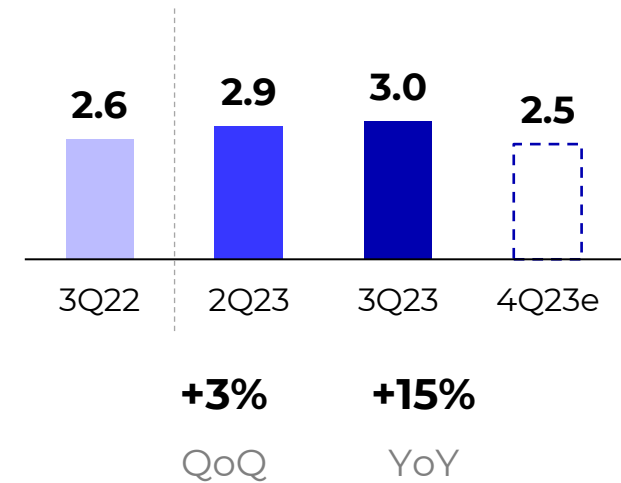
2023 target: 16.9 Mt



- 3Q23 production of 5.3 Mt exceeded the target of 4.8 Mt, supported by favorable weather conditions and optimized production at all sites, particularly at Bharinto.
- 4Q23 production is targeted at 3.5 Mt as 2023 production has reached the approved quota by the government.

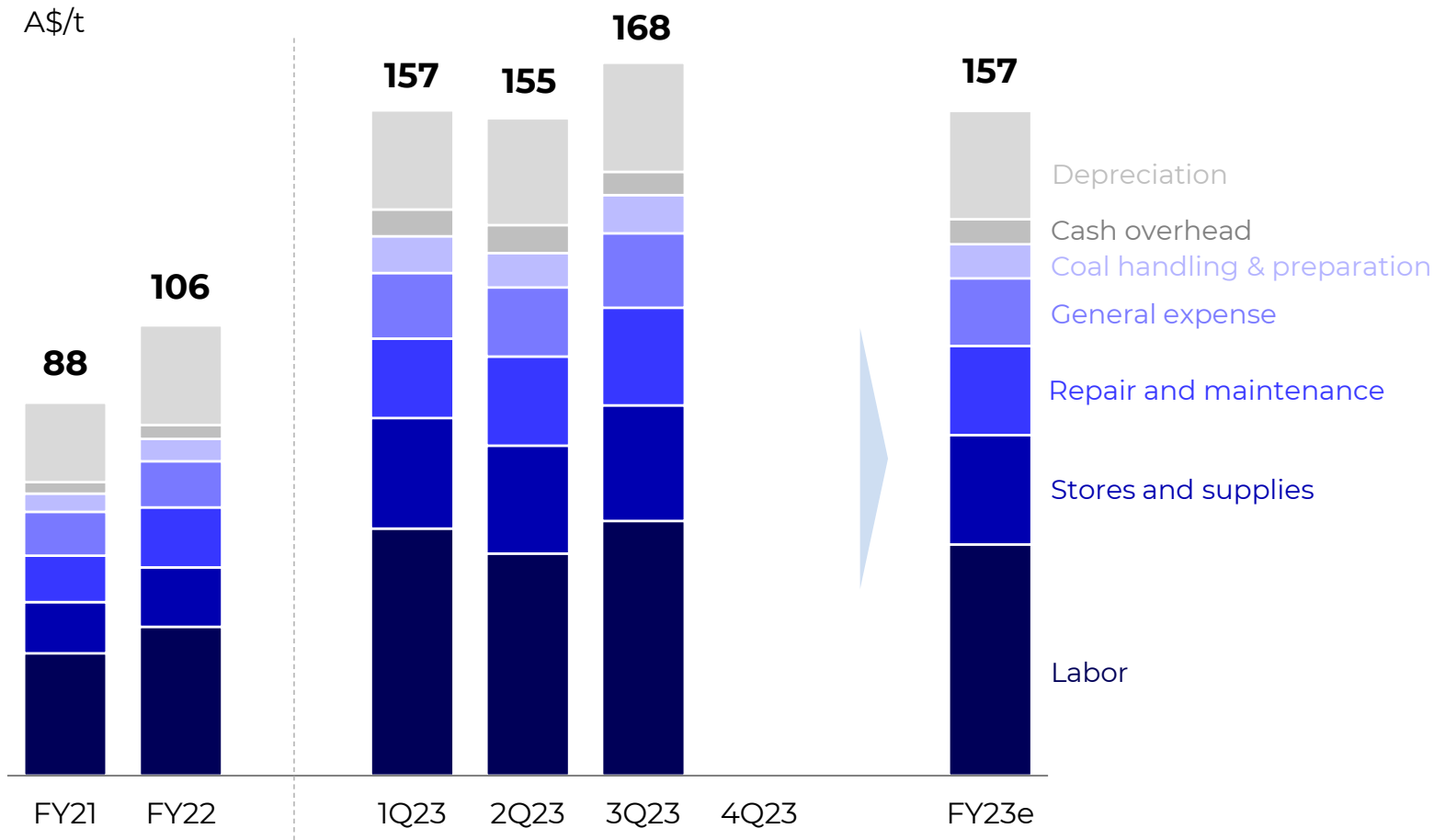
China Coal

2023 target: 10.8 Mt



- Gaohe: Stable production and sales in 3Q23. Conducted annual mine overhauling from 22-24 September.
- Hebi: Higher production in 3Q23 with continued retreat mining at LTCC3110. Production at LTCC3205 is postponed to October after mining activities at LTCC3110 end.

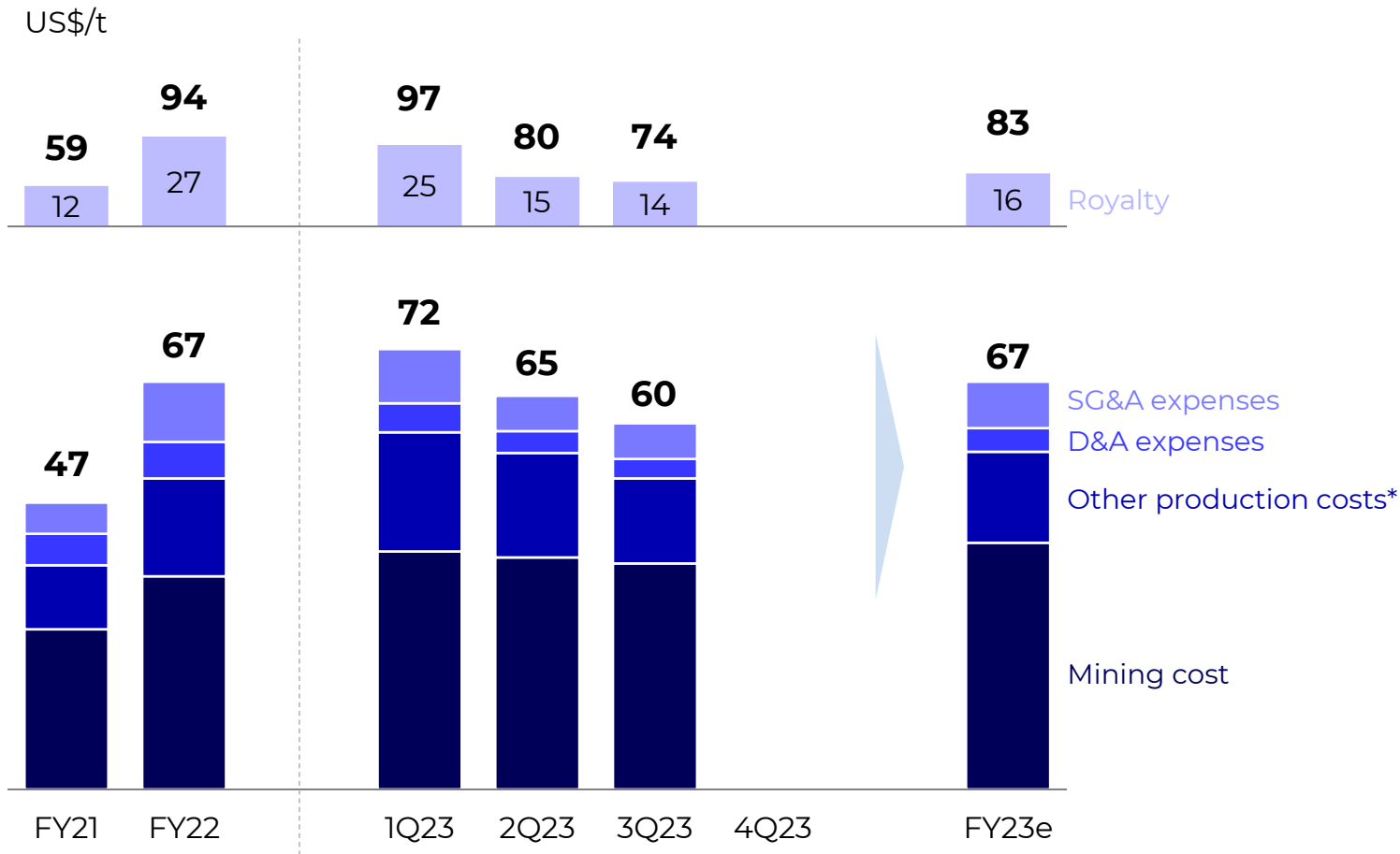
Banpu Mining: average production cost breakdown – Australia



- Production for 3Q23 was 14% lower than 2Q23 driving the 8% increase in unit costs.
- Production for 4Q23 is anticipated to increase by 35% from 3Q23 to 1.9 Mt decreasing unit costs.
- Cost-cutting measures remain in place for operating expenses along with a balanced approach for capital allocations. Project Titan has been initiated to monitor cash management across all sites.

Note: These figures do not include selling, distribution and royalty costs; based on 'sold' production

Banpu Mining: average total cost breakdown – Indonesia



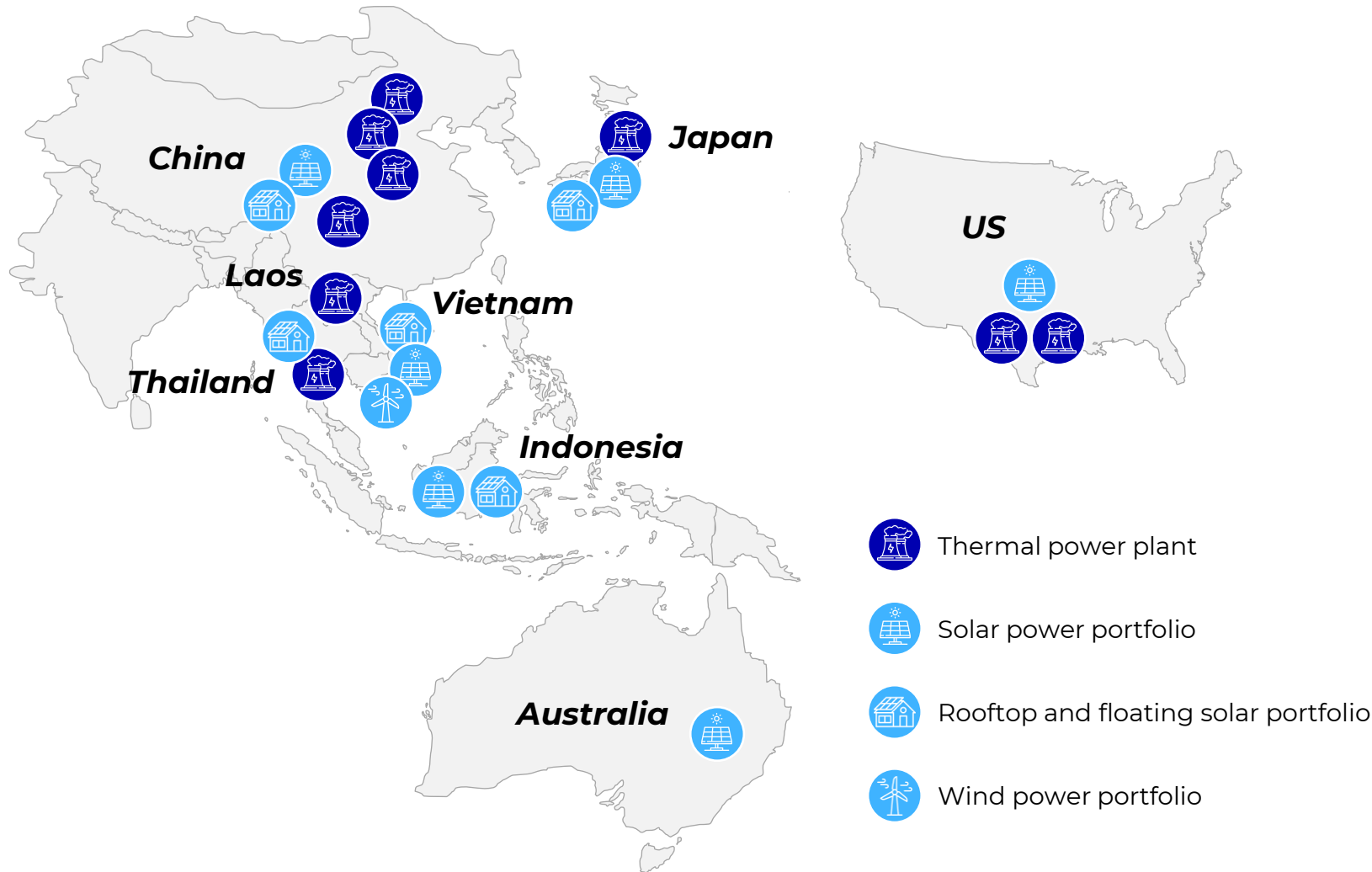
- Consistent cost control measures and optimized production allowed ITM to further reduce the total cost excluding royalty to \$60/t in 3Q23 from \$65/t in 2Q23 (-8% QoQ).
- 3Q23 royalty decreased to \$14/t (-10% QoQ) following the implementation of the new HBA regulation since August 2023, which aligns more closely with global coal prices.

Note: *Including repair and maintenance, salaries and allowances, inventory adjustment, others etc.

05

Energy Generation

Banpu Energy Generation: 4,960 MW committed capacity



8 countries

operations across
the Pacific Rim

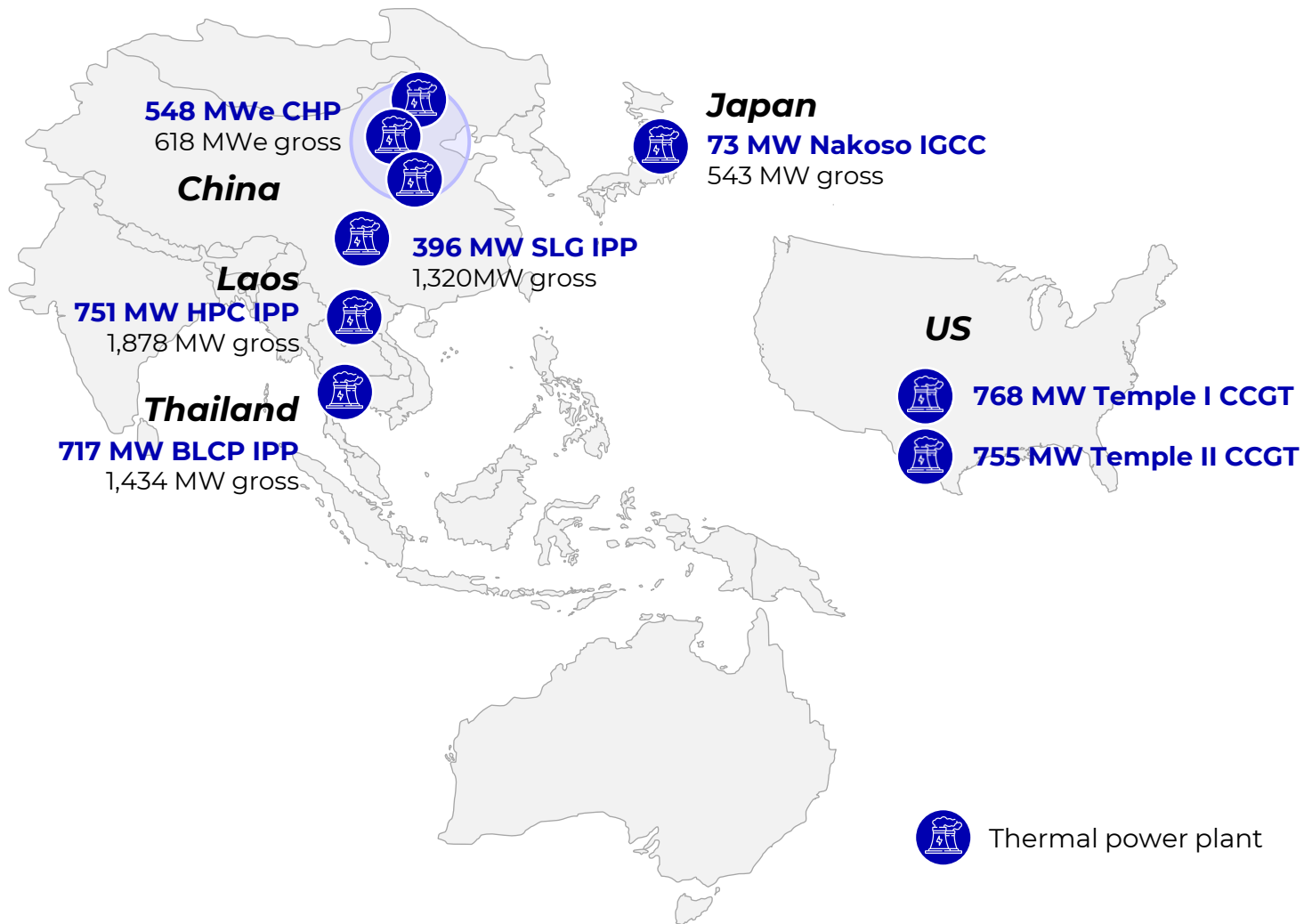
4,008 MW

committed thermal
equity capacity

951 MW

committed renewables
equity capacity

Banpu Thermal Power: 3Q23 highlights



EBITDA

\$234 M +245% QoQ

Achieved EAF

71% at HPC

99.9% at BLCP

99% at Temple I & II

n.a. at Nakoso

Note: MWe is MW equivalent

Thermal Power: 3Q23 updates



HPC

Low EAF due to major inspection of Unit 1 for 60 days resulting in adjusted scope of planned annual maintenance for the quarter.

71% EAF* -24% YoY

THB 4.3 bn revenue

THB 2.1 bn EBITDA

THB 0.5 bn share of profit



BLCP

Achieved an outstanding EAF and impressive profits, while managing operations without planned maintenance.

99.9% EAF +0% YoY

THB 4.7 bn revenue

THB 1.1 bn EBITDA

THB 0.2 bn share of profit



SLG

Increased power sold from higher demand. Lower coal prices led to higher net profit despite shutdown of Unit 2 between 16 September and 9 October. Lower interest expense in September due to replacement of USD loans by domestic loans.

1,469 GWh net power sold

RMB 9 M share of profit



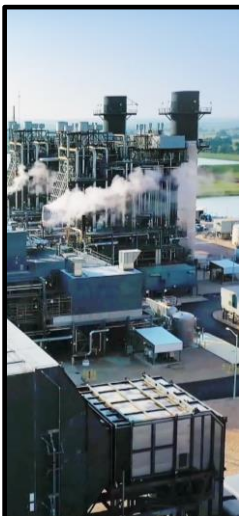
China CHP

Higher electricity sales, higher tariff and lower coal prices for QoQ and YoY led to profit improvement.

RMB 241 M Revenue

RMB 22 M EBITDA

(RMB 0 M) share of loss



Temple I & II

Successful operational results contributed by the acquisition of Temple II, higher EAF, capacity factor and spark spread.

99% EAF +2% YoY

2,479 GWh net generation

USD 404 M revenue

USD 95 M share of profit**



Nakoso IGCC

Temporary closure for equipment adjustments during its early operations to ensure long-term reliability and sustainability. All maintenance works are on schedule

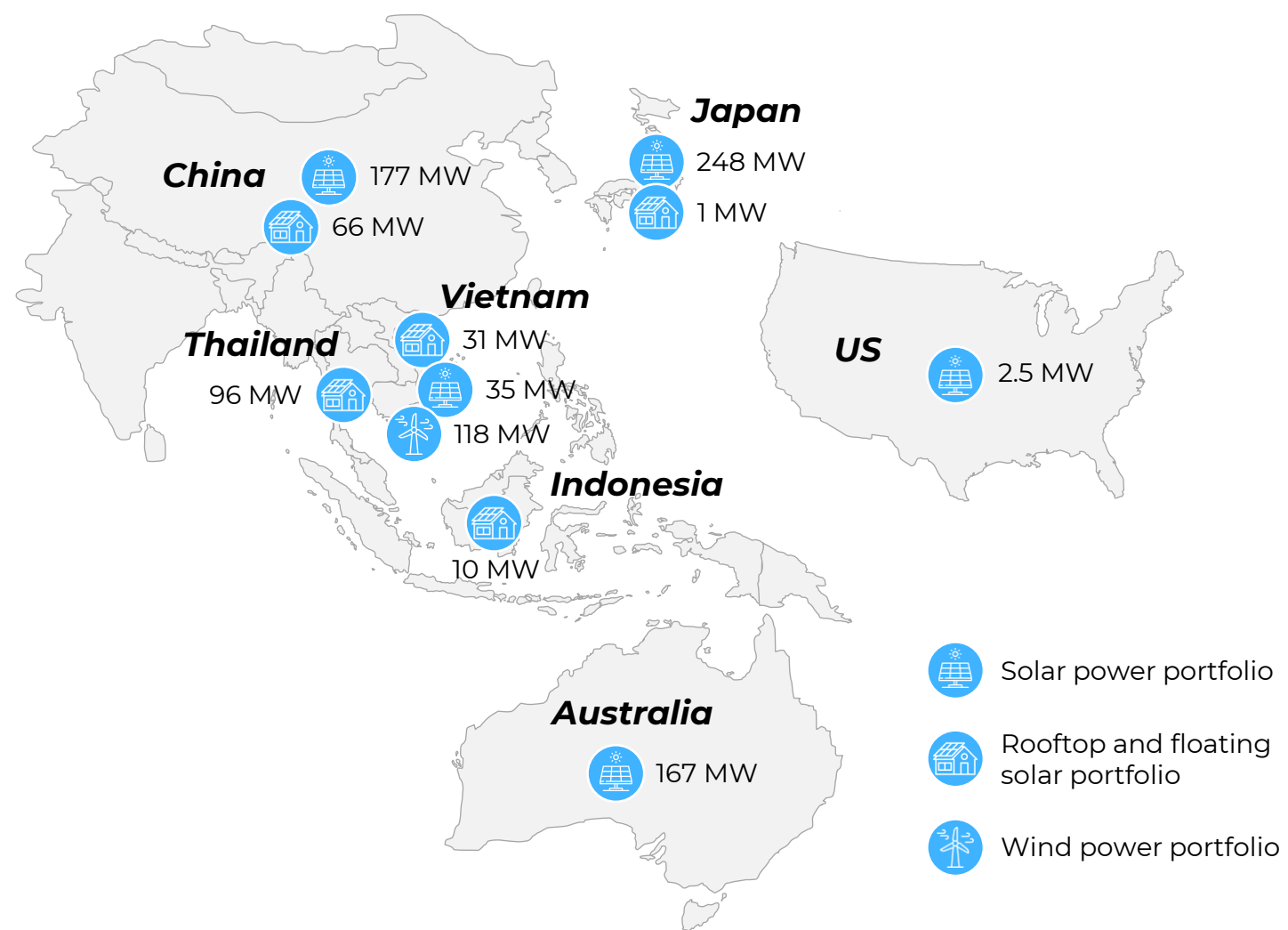
n.a. EAF

n.a. net generation

(THB 69 M) share of loss

Note: *Equivalent Availability Factor (EAF) is a percentage of a given operating period in which a generating unit is available without any planned and unplanned shutdown or deratings;
**Includes USD 54 M loss on derivatives

Banpu Renewable Power: diversified Asia-Pacific portfolio



951 MW

committed renewables capacity across Asia-Pacific

Committed capacity

629 MW

solar power

205 MW

rooftop and floating solar

118 MW

wind power

Renewable Power: 3Q23 updates



China Solar

Lower power sold YoY due to lower irradiation caused by unfavorable weather conditions.

16% avg. capacity factor
62 GWh power sold -2% QoQ
RMB 41 M EBITDA
RMB 16 M profit contribution



Japan Solar

Good irradiation has contributed to a favorable capacity factor and increase in power sold YoY.

15% avg. capacity factor
68 GWh power sold +10% QoQ
JPY 830 M cash distribution



Australia Solar

Favorable weather conditions leading to an increase in both capacity factor and power sold.

18% avg. capacity factor
49 GWh power sold
(AUD 5.9 M) share of loss*



Vietnam Solar

Nhon Hai Solar demonstrated a consistent capacity factor and power sold.

19% avg. capacity factor
15 GWh power sold
USD 0.4 M share of profit



Vietnam Wind

El Wind Mui Dinh

26% avg. capacity factor
22 GWh power sold +69% YoY
USD 1.1 M EBITDA
(USD 1.6 M) share of loss

Vietnam Wind

Vin Chau project

- Completed construction and commissioning activities
- On process of COD documentation with the relevant authorities

Note: *Includes AUD 4.5 M of loss on derivatives



Energy Technology

Energy technology: current position and future targets



Energy technology: 3Q23 rooftop and floating solar updates



Solar: rooftop & floating

ACCELERATING DEVELOPMENTS ACROSS BANPU GEOGRAPHIES

THAILAND

96 MW

Total committed capacity

New contract signing with Wat Dhammakaya and Great Wall Motor for a total capacity of 9 MW in 3Q23.

CHINA

66 MW

Total committed capacity

Committed capacity of solar rooftop project at Zhengding CHP has potential to increase to 167 MW by 2023. The current operating capacity is 9.6 MW.

VIETNAM

31 MW

Total committed capacity

Solar ESCO signed a new solar rooftop PPA with VinFast, a Vietnam-based multinational automotive company founded by Vingroup, for a total capacity of 14.7 MW (at 49% equity), increasing the total committed capacity to 31 MW.

INDONESIA

16 MW*

Total committed capacity

IBP has signed additional solar rooftop PPA of 9.6 MWp in 3Q23. Currently, the total installed capacity is approximately 6.4 MW.

Energy technology: 3Q23 battery and ESS solutions updates



Battery & ESS solutions

STRATEGIC INVESTMENT IN SVOLT ENERGY TECHNOLOGY (THAILAND) TO ENHANCE BANPU NEXT BATTERY ECOSYSTEM

40%

Current shareholding position

THB 750 M (c.\$20 M)

Total investment

2.0 GWh

Committed production capacity

60,000 units / year

Battery plant production output by 1Q24

Key customers in Thailand

Signed agreements:



100%

SVOLT Energy Technology (Hongkong)

60%

SVOLT Energy Technology (Thailand)

BANPU NEXT
40%

STRATEGIC PARTNERSHIP

- Manufacturing and R&D of li-ion batteries with capacity for future expansions
- Targeted segments of e-mobility applications including passenger, commercial and light electric (2-3-wheeler) vehicles, and energy storage systems

Energy technology: 3Q23 battery and ESS solutions updates (cont'd)



Battery & ESS solutions



DP NEXT PRODUCTION PLANT



IWATE TONO PROJECT

DURAPOWER PHASE 2 EXPANSION OF 2 GWh



Target manufacturing commission by end of 2024

\$102 M

Total investment

20 major projects

in Europe, China, India, Thailand, Singapore, S. Korea, Malaysia, Japan, and Indonesia

BUSINESS SEGMENTS



Mobility



Marine



Specialty



Stationary

THAILAND BATTERY PRODUCTION PLANT (AMATA CITY, CHONBURI)

c.\$40 M (THB 1.4 bn)

Total investment

2Q24

Expected COD



Heavy-duty vehicle market,
i.e., buses, trucks and boats



Assembly of pouch and prismatic battery
cells for NMC and LFP chemistries

BANPUNEXT

70%

durapower

30%

DP NEXT



1.0 GWh

IWATE TONO PROJECT

c.\$17 M (JPY 2.6 bn)

Total investment

2Q25

Expected COD

- Under Phase 2 of construction of extra-high voltage electric equipment and substation
- Entitled to government's subsidy program, as the project is aligned with Japan's carbon neutrality push

BJP

75%

Global Engineering
Save Energy Save the Earth

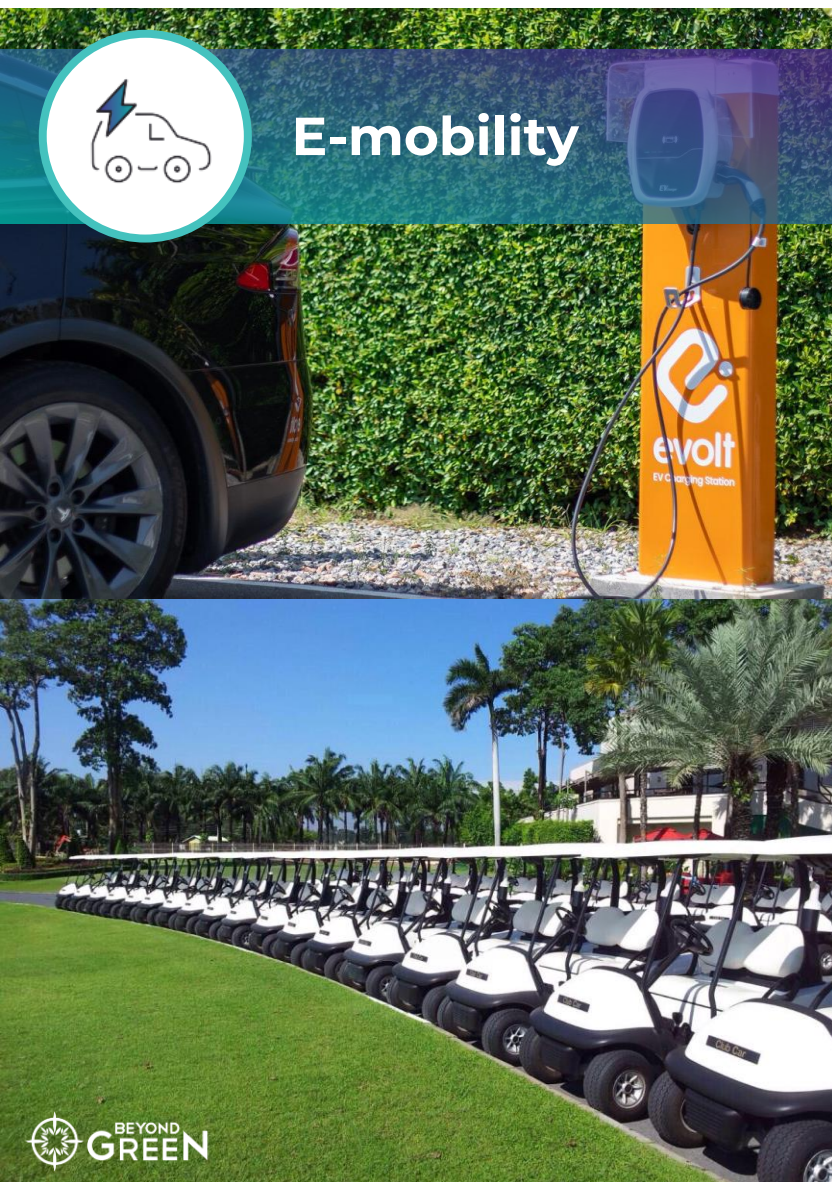
25%

IWATE TONO



58 MWh

Energy technology: 3Q23 e-mobility updates



CONTINUOUS DEVELOPMENTS IN EVOLT TECHNOLOGY WITH NEW PROJECTS AND CHARGING NETWORK EXPANSION



23.81%

Current shareholding position

486 units

Installed public chargers

RECENT PROJECTS



Co-investment to install AC charging stations in Lotus's 11 branches



MoU agreement signed to install charging stations in 14 sites



Awarded for Honda home chargers



Won the bid for Tesla Supercharger installation of 14 units at Central Pattaya



Won the bid for PTTOR DC charger installation of 180 units

BEYOND GREEN RECENT DEPLOYMENTS



39.2%

Current shareholding position
(Increased from 30.0% in 2Q23)

22 branches

Growth from 6 branches
at the end of 2021

NEW TEMPO 2 MODEL

- 200 carts delivered to Laem Chabang Golf Course in Chonburi
- 30 carts delivered to Athitaya Golf Course and 30 carts delivered to Royal Hills Golf Resort and Spa Golf Course in Nakhon Nayok

RECENT DEVELOPMENTS

- Progressing sale of e-bikes, including brands such as Super Soco, Kavallo, and new golf cart brand Wuling
- Maintenance service partnership with Oyika is currently in progress, with expectations to begin by early 2024

Energy technology: 3Q23 e-mobility updates (cont'd)



ACCELERATING RIDESHARING NETWORK EXPANSION

muvmi

6 million+

Total number of passengers

509 e-tuktuks

In operation

154 chargers

Deployed in Bangkok

30 servicing locations

Across Bangkok

8 e-taxis

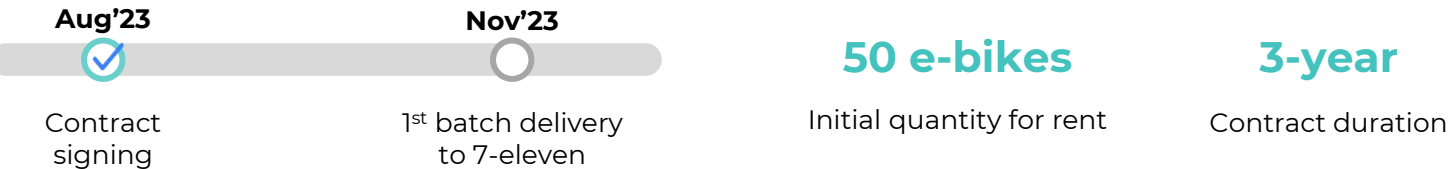
Premium fleet deployed in the Sukhumvit area

INITIATION OF VEHICLE-AS-A-SERVICE OPERATIONS WITH CPALL

VEHICLE-AS-A-SERVICE BUSINESS MODEL



CONTRACT DETAILS



Energy technology: 3Q23 smart cities and energy trading updates



Smart cities & energy mgmt.



DISTRICT COOLING SYSTEM DEVELOPMENT THROUGH BANPU NEXT AND SP GROUP'S JV

BNSP, the joint venture, has been selected to develop District Cooling System (DCS) at Government Center Building Zone C in Chaeng Wattana by Dhanarak Asset Development (DAD).

14,000 RT*

Installed capacity

Aug'24

Expected COD – *project on track* ☒

THB 500 M

Total investment cost

62,000 tons

Avg. CO₂ reduction over project lifetime



Energy trading



ENHANCED MARKETING AND SALES STRATEGY WITH MARKET-LINKED PRICE OFFERING AND SUPPLY AGREEMENT AWARDED THROUGH TENDERING PROCESS

520 GWh

Accumulated 9-month sales

- 58% of total sales are market-linked price products
- Remaining sales are fixed-price contracts obtained through tendering (hedged to minimize potential risks)

470 clients

From public and private sectors in 8 utility grid areas

BPPTGK has also increased its involvement in short-term and transmission rights trading to mitigate the risk of sales imbalances between utility grid areas.

Appendix

Banpu: 'integrated energy solutions' 2023

ENERGY RESOURCES

Shale Gas



864 MMcfed*
Net production

ENERGY GENERATION

Renewable Power



747 MW
Committed capacity

ENERGY TECHNOLOGY

Rooftop & Floating Solar



205 MW
Committed capacity

Mining



35.3 Mt
Coal sales

Thermal Power



4,008 MW
Committed capacity

Clean Energy Tech



1.0 GWh (100% basis)
Li-ion batteries



E-mobility services
E-mobility solutions



Smart Cities &
Energy Management



520 GWh**
Electricity trading

Note: *Average for nine months ended 30th September 2023; **9-month period

Natural gas: reserve and production term

Reserve

Definition

- BKV utilizes oil and gas reserve definitions that conform with the definitions set forth by the US SEC. The following are categories of oil and gas reserves:
 - Proved Developed Producing (PDP)
 - Proved Developed Not Producing (PDNP)
 - Proved Undeveloped (PUD) - adjacent to a producing well
 - Probable (in the same area as production but not adjacent) (PROB)
 - Possible (contingent on additional drilling) (POSS)
- Reserves have to be economically viable.

Production

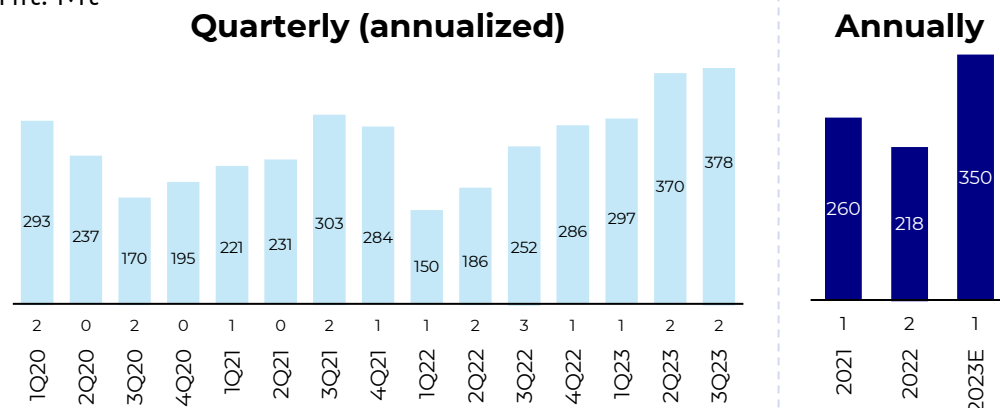
Production unit

- In the US, production is measured in 1,000 cubic feet (Mcf)
- 1000 Mcf = 1 MMcf
- 1,000,000 Mcf = 1 Bcf
- 1,000 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

China: domestic supply tightness boosting imports

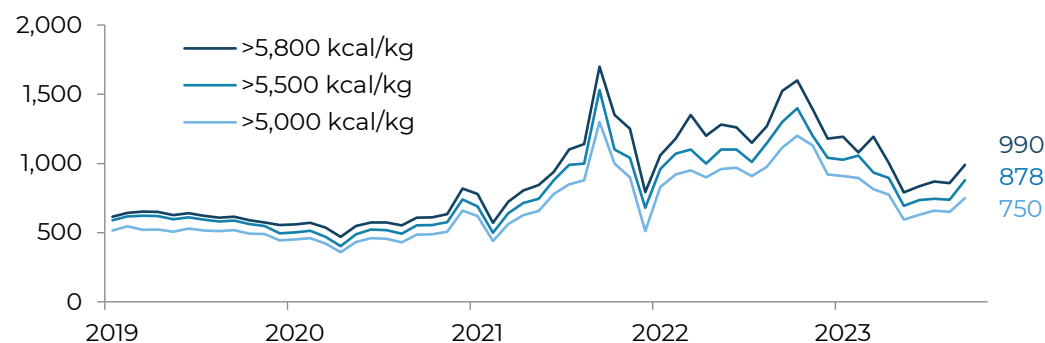
CHINA THERMAL COAL IMPORTS/EXPORTS*

Unit: Mt



CHINA DOMESTIC COAL PRICES

Unit: RMB/t



Note: *Includes lignite but excludes anthracite imports/exports

Source: www.sxcoal.com/cn (12th October 2023), Banpu MS&L

3Q23

- China's GDP recorded a 4.9% growth in 3Q23, closely approaching its annual target of 5.0%. This was driven primarily by a rebound in industrial production, influenced by heightened demand for goods and restocking.
- In the first three quarters of 2023, coal-fired power output surged to 4,030 TWh, increasing by 5.5% YoY from 3,820 TWh during the same period in 2022, and accounting for 88% of thermal generation.
- Despite several typhoons in 3Q23 which highly reduced electricity consumption, coal production was 1.15 billion metric tons, increasing by 1.5% YoY, contributing to a 4% increase in the first nine months of 2023.
- China has imposed stricter regulations on domestic coal supply, primarily due to safety inspections in mines following a series of accidents since July.
- China imported 94 Mt of thermal coal in 3Q23 increasing by 50% YoY, bringing total imports for the first nine months of 2023 to 261 Mt, reflecting a 78% YoY growth.

OUTLOOK

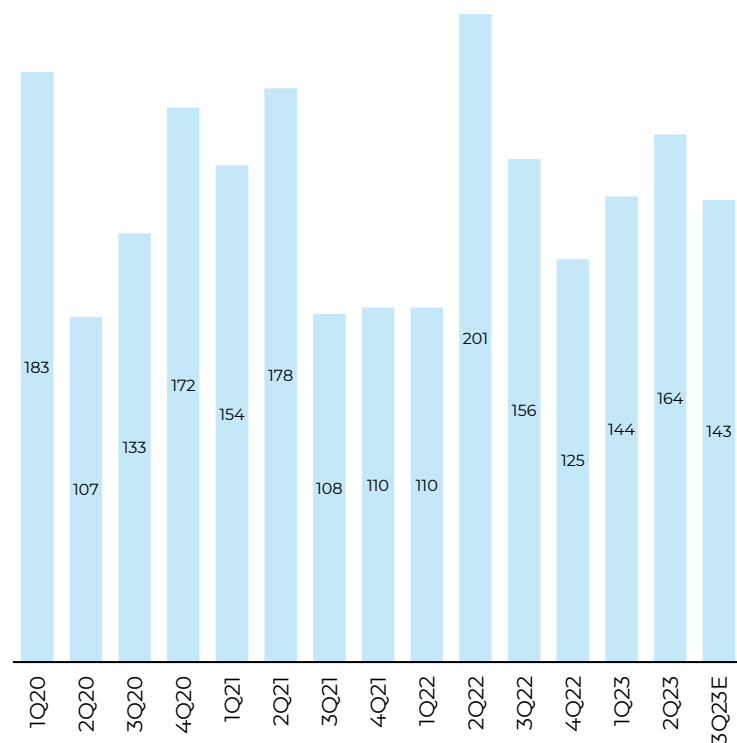
- China's recovering economy, particularly in the industry and consumer demand sectors, may drive an increase in year-end demand for thermal coal.
- The government's commitment to allocate RMB1 trillion (\$139.28 bn) in special bonds for infrastructure and the early issuance of RMB2.7 trillion in bonds to 4Q23 will further support this growth.
- As power consumption is expected to rise to 7.0% in 4Q23, increasing from 6.6% in 3Q23, major coal producers are increasing production to ensure winter supply security, possibly leading to the easing of safety inspections.
- With winter demand and persistently high domestic coal prices, thermal coal imports are likely to remain elevated till the end of the year.

India: strong domestic coal production curbed import demand

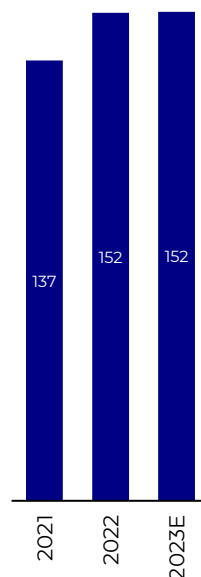
INDIA THERMAL COAL IMPORTS*

Unit: Mt

Quarterly (annualized)



Annually



Note: *Includes lignite grade imports

Source: Commodity Insights, Banpu MS&L

3Q23

- In 3Q23, electricity demand experienced a significant increase due to inadequate monsoon rains, which led to elevated temperatures and drought conditions. This, in turn, prompted higher needs for cooling and pumping, driven by economic growth.
- Total electricity generation in 3Q23 amounted to 390 TWh, increasing by 9.5% YoY. In addition, imported coal-fired generation also grew by 14.7% YoY to 305 TWh in 3Q23, due to lower hydro generation.
- However, non-power sector coal demand remained low during the monsoon season.
- Domestic thermal coal production reached 192 Mt in 3Q23, growing by 14% YoY, resulting in a 666 Mt cumulative output for the first nine months of 2023, a 13% increase 3Q22.
- Robust domestic coal production contributed to lower thermal coal imports in 3Q23 at 35.8 Mt, declining by 8.4% YoY.

OUTLOOK

- Electricity demand is expected to remain strong for the rest of 2023, especially in 4Q23 which coincides with festive and winter seasons in India.
- Furthermore, during 4Q23, construction activities are expected to rise, supported by increased government infrastructure spending.
- To address supply shortages, the power ministry has permitted coal-based power generators to raise imported coal usage from 4% to 6% until March 2023.
- In addition, imported coal-based power plants are required to operate at full capacity until June 2024, extending the previous mandate which lasted until October 2023. This change could boost imports by Indian power plants.
- While domestic supply is expected to improve in 2023, it is unlikely to meet growing coal demand, thereby solidifying India's ongoing reliance on seaborne coal.

Coal quarterly output summary

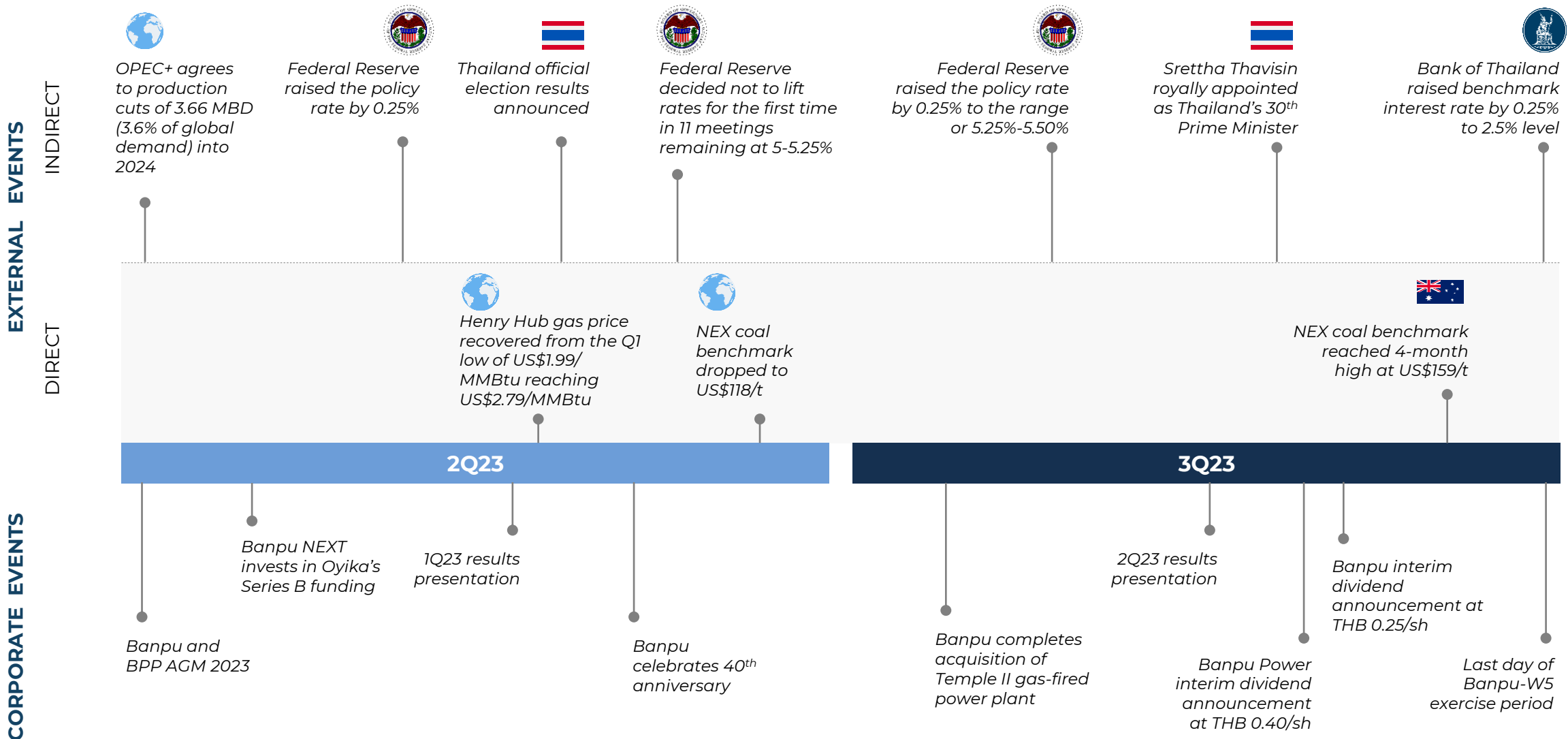
AUSTRALIA OPERATIONS: COAL OUTPUT (MT) – ROM OUTPUT ON EQUITY BASIS					
Mines	CV (kcal/kg)	1Q23	2Q23	3Q23	4Q23e
Western operations		0.8	1.2	0.9	1.2
Springvale	6,700	0.5	0.7	0.5	0.7
Clarence	6,700	0.2	0.2	0.3	0.4
Airly	6,700	0.1	0.3	0.1	0.1
Northern operations		1.0	0.5	0.5	0.7
Mandalong	6,700	0.7	0.3	0.2	0.4
Myuna	6,700	0.3	0.2	0.3	0.3
Total Australia Coal		1.8	1.7	1.4	1.9

INDONESIA OPERATIONS: COAL OUTPUT (MT) – ROM OUTPUT ON 100% BASIS									
Mines	CV (kcal/kg)	1Q23		2Q23		3Q23		4Q23e	
		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	5,950 – 6,250	1.5	11.6	1.7	14.1	1.7	13.9	1.6	14.8
Trubaindo	6,550 – 6,700	0.6	18.0	0.7	16.1	1.0	13.1	0.4	16.4
Bharinto		1.6	9.1	1.8	9.6	2.3	9.7	1.3	9.8
Jorong	5,300	0.1	15.0	0.1	11.0	0.2	10.4	0.1	13.8
Total Indonesia Coal		3.8	11.5	4.4	12.5	5.3	11.7	3.5	13.1

CHINA OPERATIONS: COAL OUTPUT (MT) – ROM OUTPUT ON 100% BASIS					
Mines	CV (kcal/kg)	1Q23	2Q23	3Q23	4Q23e
Gaohe	6,500 – 8,000	2.5	2.7	2.6	2.2
Hebi	5,300 – 6,800	0.2	0.2	0.4	0.3
Total China Coal		2.7	2.9	3.0	2.5

Note: CV figures are air-dried basis

Key external and corporate events



FX impact analysis guidance on P&L

CURRENCY EXPOSURE	NPAT IMPACT 3Q23 (US\$M)	APPROXIMATE FX EXPOSURE (US\$M)		NPAT 5% SENSITIVITY 4Q23 (US\$M)	
		Net liability	Net asset	Assuming 5% depreciation of local currencies against USD	
Banpu: AUD asset, THB bond, and others	44.0	-1,700	350	THB	86
				AUD	-17
ITMG: IDR asset and liabilities	-3.5		210	IDR	-7
BPA: USD asset	-2.6		0	AUD	0
Net	37.9			Net	62

▪ BOT lower 2023 growth at 2.8% and raised 2024 growth at 4.4%

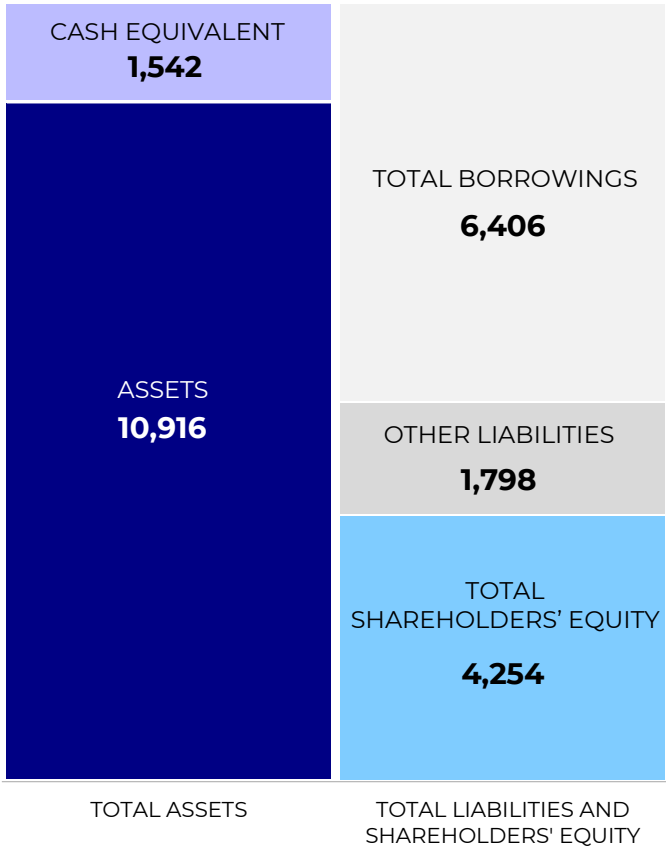
▪ BI forecast 2023 GDP to 4.5%-5.3%

▪ RBA forecasted lower 2023 growth at 1.25% and raised 2024 growth at 1.45%

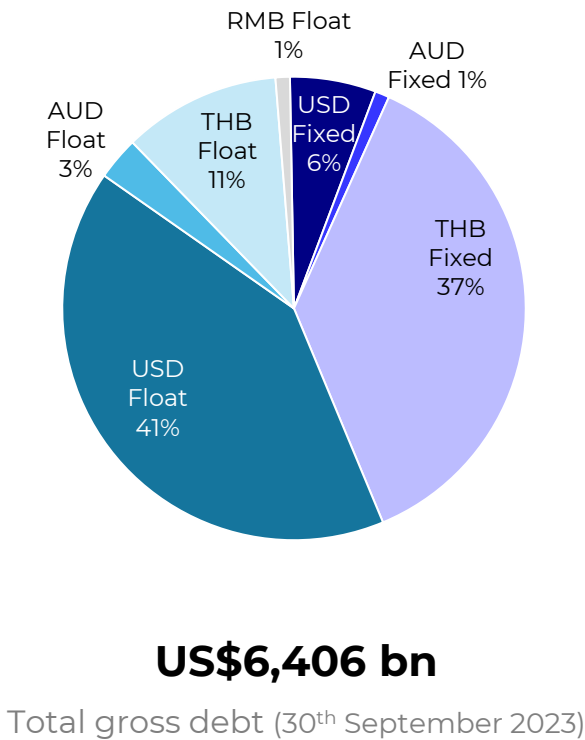
Banpu consolidated balance sheet – 3Q23

3Q23 CONSOLIDATED FINANCIAL POSITION

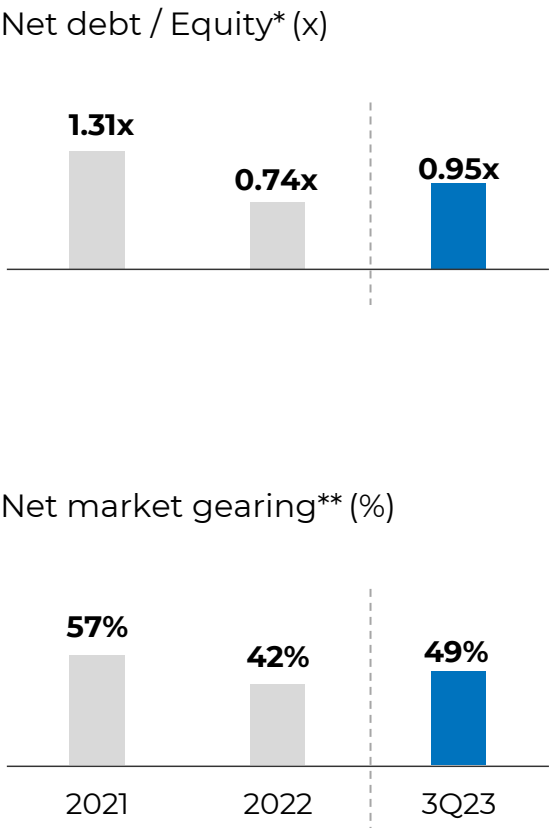
USD million



DEBT FX STRUCTURE



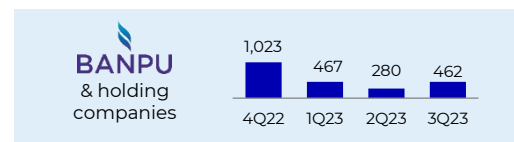
GEARING RATIOS



Note: *Net debt to book value of shareholders' equity; **Net debt to enterprise value (enterprise value = net debt + book value of shareholders' equity)

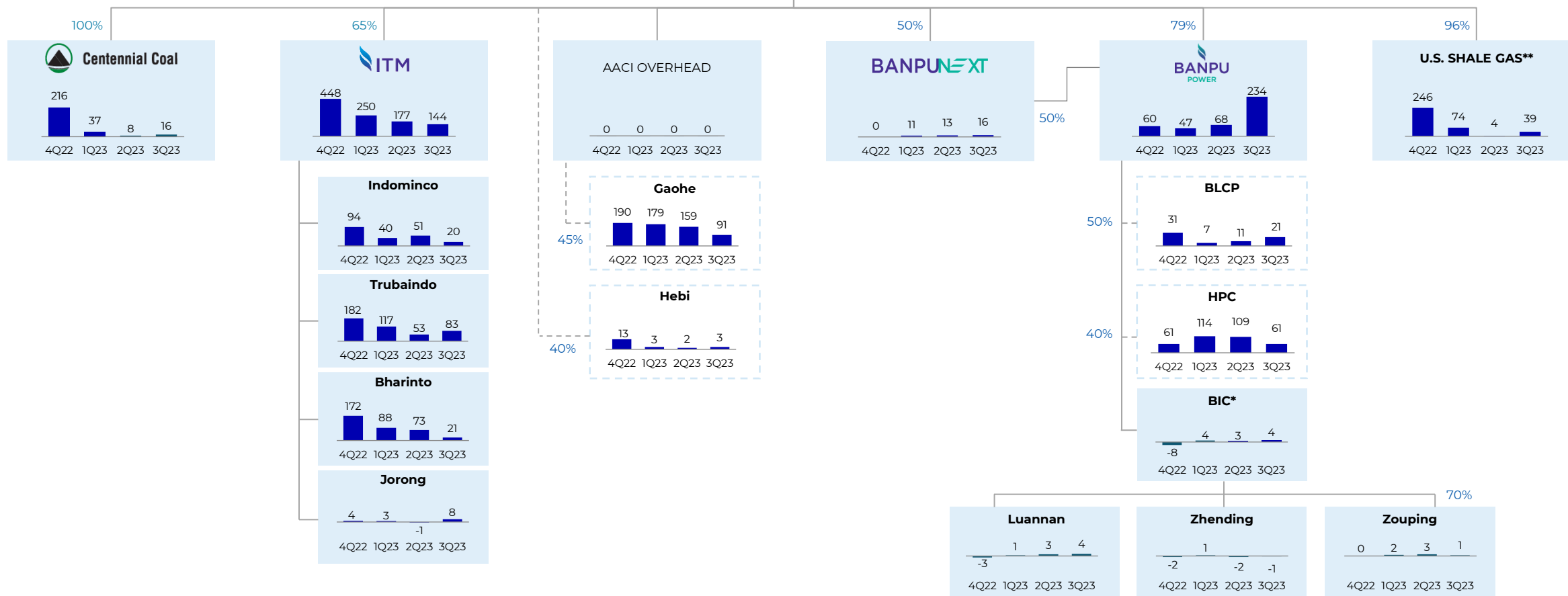
Banpu group EBITDA breakdown

USD million



Consolidated

Not consolidated



Note: all ownership 100% unless otherwise shown

*Banpu Investment China

**IFRS EBITDA. Significant differences between IFRS and BKV US GAAP EBITDAX include treatment of derivative gains and losses, depletion expense, accretion expense, stock compensation expense, BNAC expenses, equity income, and contingent consideration gains and losses of asset acquisitions

Banpu group net debt breakdown



Note: All ownership 100% unless otherwise shown; *Banpu Investment China

Banpu consolidated: operating profit

USD million	3Q23	2Q23	3Q22	QoQ%	YoY%
Total sales revenues*	1,468	1,112	2,397	+32%	-39%
Sales revenue – Coal**	753	821	1,659	-8%	-55%
Sales revenue – Gas	181	145	573	+25%	-68%
Sales revenue – Power	469	97	149	+386%	+215%
Sales revenue – Energy Technology	33	30	1	+12%	+3147%
Cost of sales	(998)	(863)	(964)		
Gross profit*	470	249	1,433	+89%	-67%
Gross profit – Coal**	246	253	1,026	-3%	-76%
Gross profit – Gas	9	-33	380	n.a.	-98%
Gross profit – Power	203	20	22	+892%	+821%
Gross profit – Energy Technology	8	5	-	+56%	n.a.
Gross profit margin (GPM)	32%	22%	60%		
<i>GPM – Coal</i>	<i>33%</i>	<i>31%</i>	<i>62%</i>		
<i>GPM – Gas</i>	<i>5%</i>	<i>-22%</i>	<i>66%</i>		
<i>GPM – Power</i>	<i>43%</i>	<i>21%</i>	<i>15%</i>		
<i>GPM – Energy Technology</i>	<i>25%</i>	<i>18%</i>	<i>-4%</i>		

Note: *Including other businesses; **Including coal trading

Banpu consolidated: operating profit

USD million	3Q23	2Q23	3Q22	QoQ%	YoY%
Gross profit	470	249	1,433	+89%	-67%
GPM	32%	22%	60%		
SG&A	(123)	(123)	(157)		
Royalty	(83)	(91)	(208)		
Income from associates	53	83	92		
Other income and Dividend	26	22	14		
Mining property	(8)	(6)	(9)		
EBIT	335	134	1,165	+150%	-71%
EBIT – Coal	133	131	783	+1%	-83%
EBIT – Gas	(15)	(52)	326	n.a.	n.a.
EBIT – Power	217	56	61	+285%	+254%
EBIT – Energy Technology	(1)	(2)	(6)	n.a.	n.a.
EBITDA	462	280	1,350	+65%	-66%
EBITDA – Coal	188	206	902	-9%	-79%
EBITDA – Gas	39	4	377	+863%	-90%
EBITDA – Power	234	68	74	+243%	+216%
EBITDA – Energy Technology	3	2	(4)	+33%	n.a.

Banpu consolidated: net profit

USD million	3Q23	2Q23	3Q22	QoQ%	YoY%
EBIT	335	134	1,165	+150%	-71%
Interest expenses	(99)	(86)	(73)		
Financial expenses	(2)	(3)	(2)		
Income tax (core business)	(22)	(37)	(124)		
Minorities	(49)	(50)	(167)		
Net profit before extra items	163	(41)	798	+396%	-80%
Non-recurring items*	(16)	4	(8)		
Gain (Loss) on Derivatives Transactions	(66)	16	(248)		
Income tax (non - core business)	(15)	(32)	(2)		
Deferred tax income (expenses)	(45)	(29)	(133)		
Net profit before FX	21	(82)	408	-126%	-95%
FX translation	38	69	79		
Net Profit	59	(13)	487	+459%	-88%
EPS (US\$/share)	0.007	(0.002)	0.072		

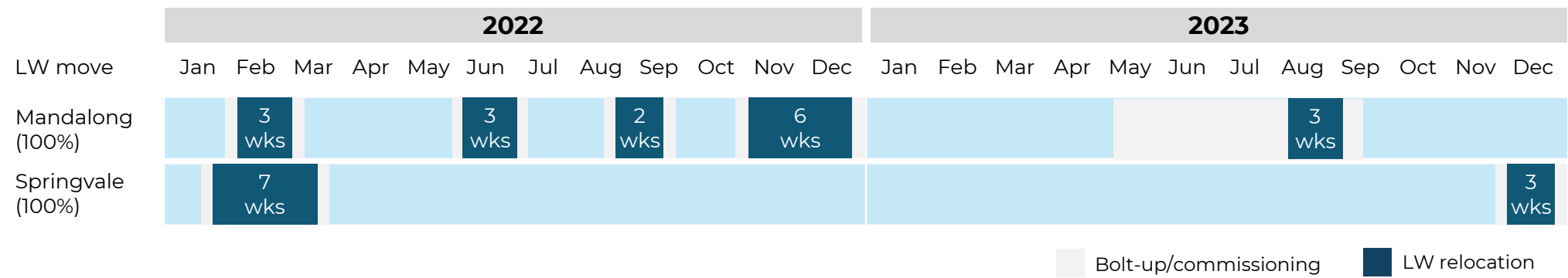
Note: *Income from non-core assets and other non-operating expenses

Centennial: income statement

USD million	3Q23	2Q23	3Q22	QoQ%	YoY%
Sales volume (Mt)	1.8	1.6	2.3	+10%	-22%
Sales revenue	195.1	175.3	388.5	+11%	-50%
Cost of Sales	(182.6)	(199.1)	(221.3)		
Gross profit	12.5	(23.8)	167.2	n.a.	-93%
GPM	6%	-14%	43%		
SG&A	(21.2)	(21.6)	(28.2)		
Royalty	(10.8)	(10.5)	(24.7)		
Other income	0.6	10.7	1.2		
Other expenses	-	-	-		
EBIT	(18.9)	(45.3)	115.5	n.a.	n.a.
Interest expenses	(8.3)	(7.9)	(10.9)		
Financial expenses	(1.7)	(1.6)	(0.6)		
Gain (loss) on exchange rate	(2.6)	2.2	(2.5)		
Gain (loss) on derivative	(7.0)	(3.7)	(8.0)		
Corporate income tax	-	-	-		
Deferred tax income	11.4	19.6	(27.9)		
Net Profit	(27.1)	(36.7)	65.7	n.a.	n.a.

Australia coal: quarterly equity rom output

Total equity ROM (Mt)



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



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