



# Banpu Power 3Q24 results

Opportunity Day

22<sup>nd</sup> November 2024



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01

# Highlights 3Q24

# 3Q24 highlights

## Financial highlight

**THB 6.9 bn**

Revenue

**Significant** contribution from thermal assets especially from Temple I and II in the US

**THB 1.1 bn**

NPAT

Strong performance supported by resilient operational results

**THB 2.3 bn**

Consol. EBITDA <sup>(1)</sup>

**Strong** contributions from thermal assets

**0.47 x**

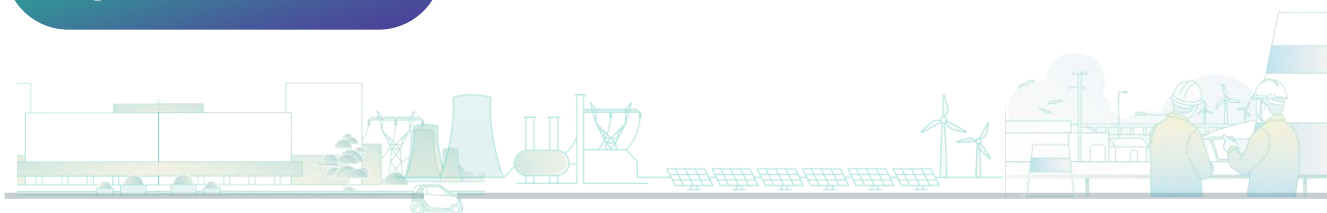
Net D/E

Maintained net D/E at a low level

## Portfolio highlight

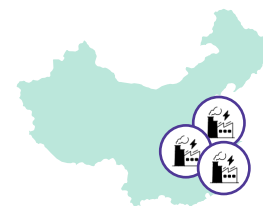
**3,652 MW**

TOTAL CAPACITY <sup>(2)</sup>



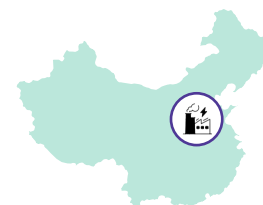
## OPERATIONAL UPDATES & KEY DEVELOPMENTS

### Sale of carbon emissions allowance at the 3 CHPs



3 CHPs generated RMB 7.5 M in other income from the sale of carbon emissions allowance (equivalent to 80,002 tonnes) from the 3 CHP assets in China.

### SLG Heat Supply Development



SLG expanded its heat supply capacity to 20 million m<sup>2</sup>, equivalent to c.200,000 households in the region with expansion plans to reach 30 million m<sup>2</sup>. This initiative reduces city carbon emissions and boosts SLG plant efficiency.

### Banpu NEXT invests in Amp Japan



Banpu NEXT along with Asia-Pacific Sustainable & Decarbonization Infrastructure Equity, LP, a fund sponsored by Aravest and SMBC Group, invested US\$145 M in Amp Japan, an exclusive platform for Amp Energy that develops, acquires and operates renewable energy assets in Japan.

# 2030 Targets & Strategy



# Banpu Power: 2030 strategic targets

## EBITDA GENERATION



**>1.8x**  
2030 EBITDA<sup>(1)</sup>

Prioritize **financial robustness** and **environmental responsibility** to maximize shareholder value and sustainable growth

## PORTFOLIO MIX



**65% EBITDA**  
from Greener assets  
by 2030

**40%\* EBITDA**  
on average from Greener  
assets in 2022-2023

Generate **greener, stable cash flows** for shareholder, facilitating a successful energy transition

## DECARBONIZATION



**<0.549 tCO<sub>2</sub>e/MWh**  
2024-2025 GHG emission  
intensity target

**<0.676 tCO<sub>2</sub>e/MWh**  
Previous 2021-2025 GHG  
emission intensity target

Expand into new areas to **seize long-term opportunities** and advance **decarbonization goals**



# Banpu Power: balancing growth and sustainability

## BEYOND QUALITY MEGAWATTS

RESPONSIBLE ENERGY GENERATION



01

### Unlock value

from existing assets through operational excellence



02

### Quality MW acquisition

+1,500 MW of new gas-fired power capacity



03

### Decarbonization and growth

through energy transition sectors



## NEW GROWTH



**Renewables:** focusing on high returns



**BESS & energy trading:** leveraging strengths to capture market upsides

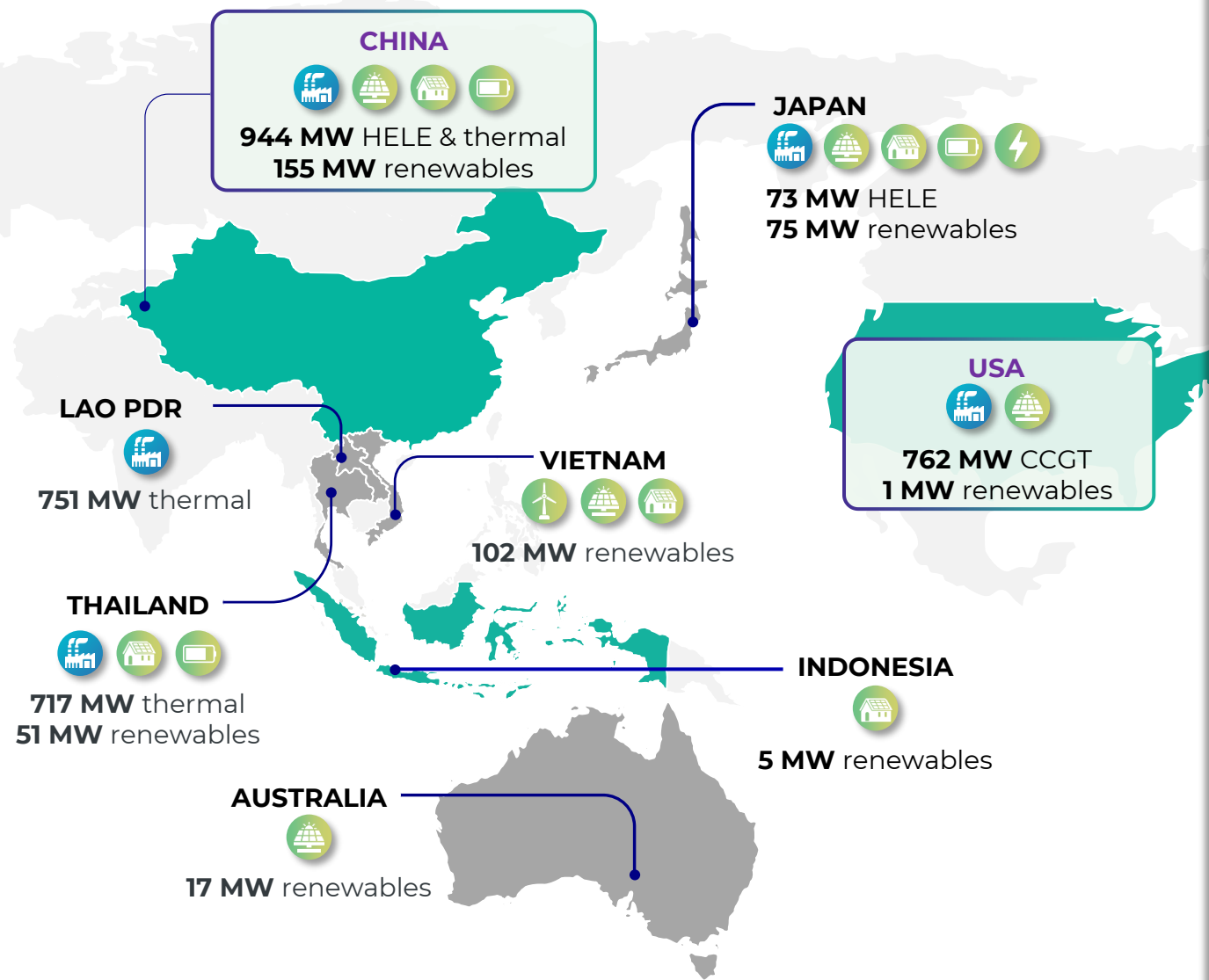


**Energy infrastructure:** exploring opportunities in infrastructure upgrades to support grid stability



**CCUS:** identifying opportunities through the BKV-BPP JV

# Strategic growth areas



Note: Capacity based on BPP's equity as of 3Q24

## KEY INITIATIVES



USA

- 1 Prioritize expansion through BKV-BPP by investing in **key US CCGT assets**
- 2 Enhance Temple power facilities with **operational excellence** and **proactive hedging**
- 3 Expand investments in **renewables and CCUS**, and leverage expertise in **exploring new businesses, including BESS**



CHINA

- 1 Expand **renewable portfolio** through partnership with Gemeng International
- 2 Sustain operational efficiency and study **biomass co-firing feasibility at China CHPs**, and secure renewable feedstock



OTHER COUNTRIES

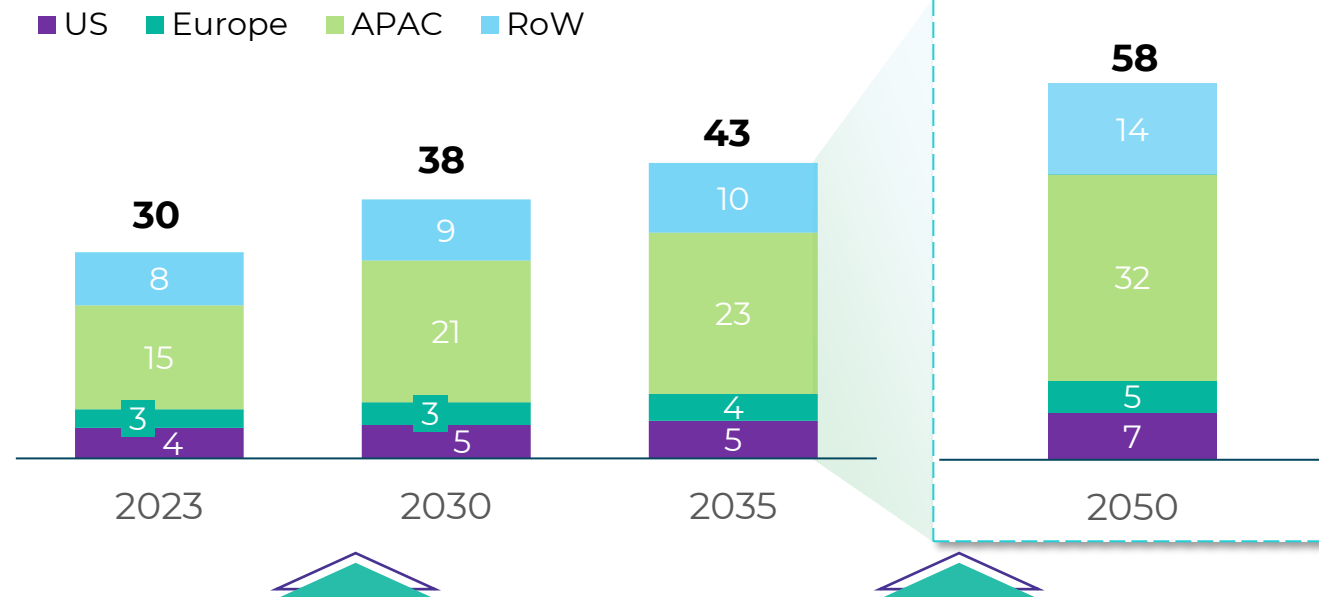
- 1 Optimize existing assets through **operational improvements and decarbonization measures**
- 2 Leverage and **utilize existing facilities** to further develop organic growth in key businesses
- 3 Explore **strategic partnerships** for portfolio growth in synergistic portfolio assets (BESS, Renewables)



# Overview of global power demand

## TOTAL GLOBAL ELECTRICITY CONSUMPTION BY REGION

Unit: '000 TWh



## DATA CENTERS AND EVOLUTION OF AI TO DRIVE SIGNIFICANT POWER DEMAND GROWTH

**US\$100**  
billion

Expected data center investments in Asia

**1,000**  
TWh

Growth in global data center electricity demand by 2030

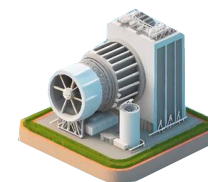
**10**  
times

Electricity to produce one ChatGPT query compared to a google search



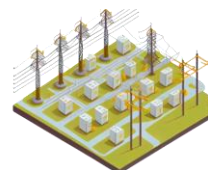
## RESPONSIBLE TRANSITION

### GAS FIRED POWER



- 1 Capture rising power demand
- 2 Provide baseload power for renewables

### TRANSMISSION INFRASTRUCTURE



- 1 Support renewable energy integration
- 2 Enhanced grid reliability and stability

### RENEWABLES + BESS



- 1 Grid balancing
- 2 Revenue stacking
- 3 Net zero demand growth

# Decarbonization strategy and initiatives

## STRATEGIC FRAMEWORK



### Avoid

Preventing emissions from being generated



### Reduce

Minimizing the emissions produced



### Remove

Extracting CO2 from the atmosphere



### Offset

Compensating for emissions through credits

## EXISTING INITIATIVES

### Zhengding: DPV Project

- **DPV construction:** commenced in June 2022
- **Initial operations:** first power station operating in Oct 2022
- **Progress:** continue construction in the future



### 3 CHPs: Biomass co-firing

- **Biomass co-firing at Zhengding, Luannan, and Zouping:** starting at 10% and potentially increasing 50% co-firing of current coal consumption
- **Progress:** currently in the study phase of the 50% blending



### Cotton Cove: CCUS

- **Carbon sequestration potential:** from Barnett operations and utilization of BKV's midstream infrastructure
- **COD target:** expected by 1Q26
- **Shareholding structure:** BBPUS holding a 49% interest and BKV dCarbon holding 51%



## APPLYING THE FRAMEWORK TOWARDS NEW GROWTH

### Gas-fired power

Invest in new gas-fired power plants across geographies to mitigate market risks



### Renewables and BESS

Invest in BESS and energy infrastructure to boost renewable integration and grid reliability



### Other energy transition

Explore opportunities in data centers, CCUS, and hydrogen for further portfolio decarbonization



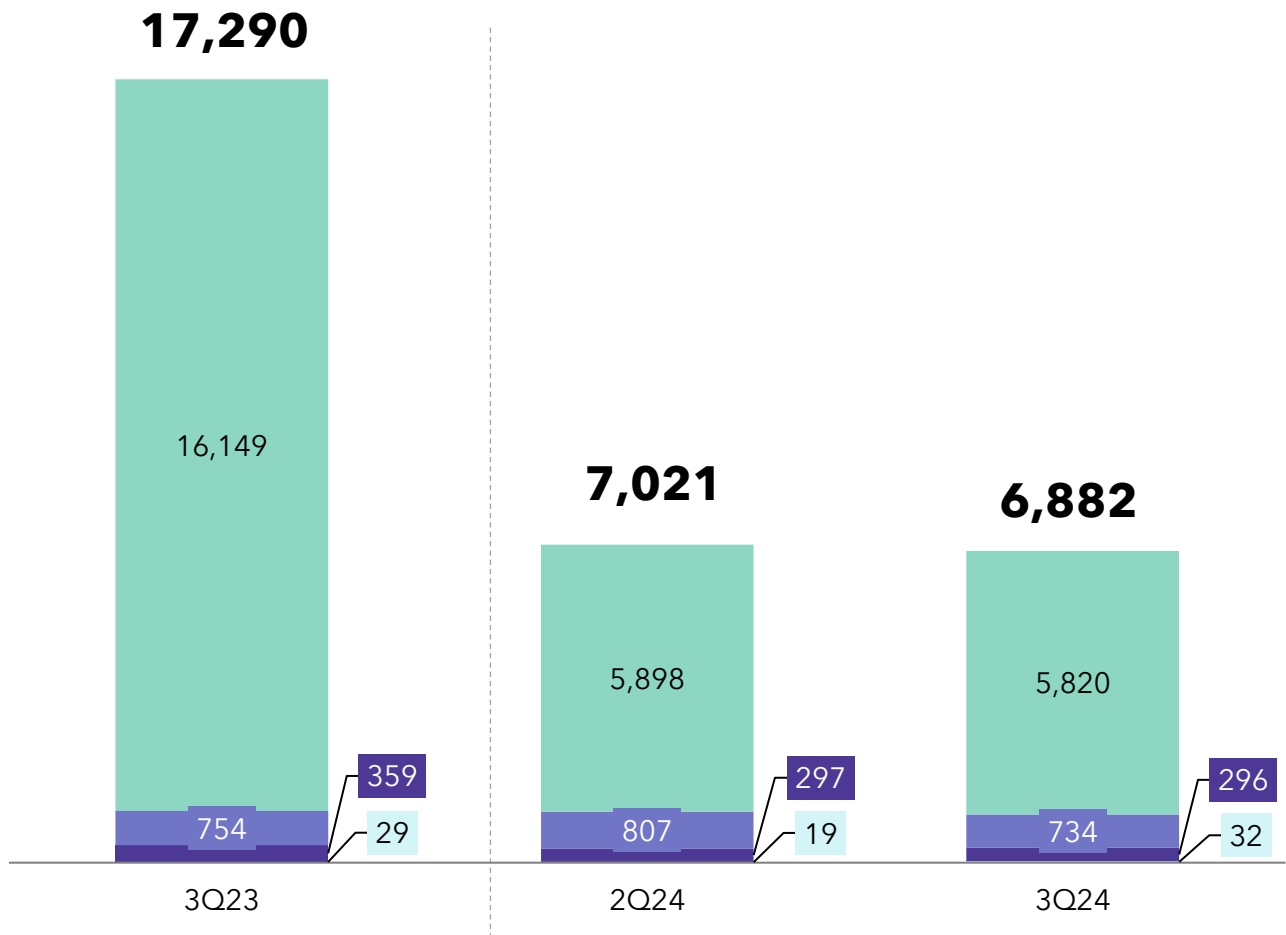


# Financial performance



# Banpu Power consolidated revenue – 3Q24

Unit: THB M



-2% QoQ

-60% YoY

US Power

-1% QoQ

-64% YoY

China CHP Steam

-9% QoQ

-3% YoY

China CHP Power

-1% QoQ

-17% YoY

Others<sup>(1)</sup>

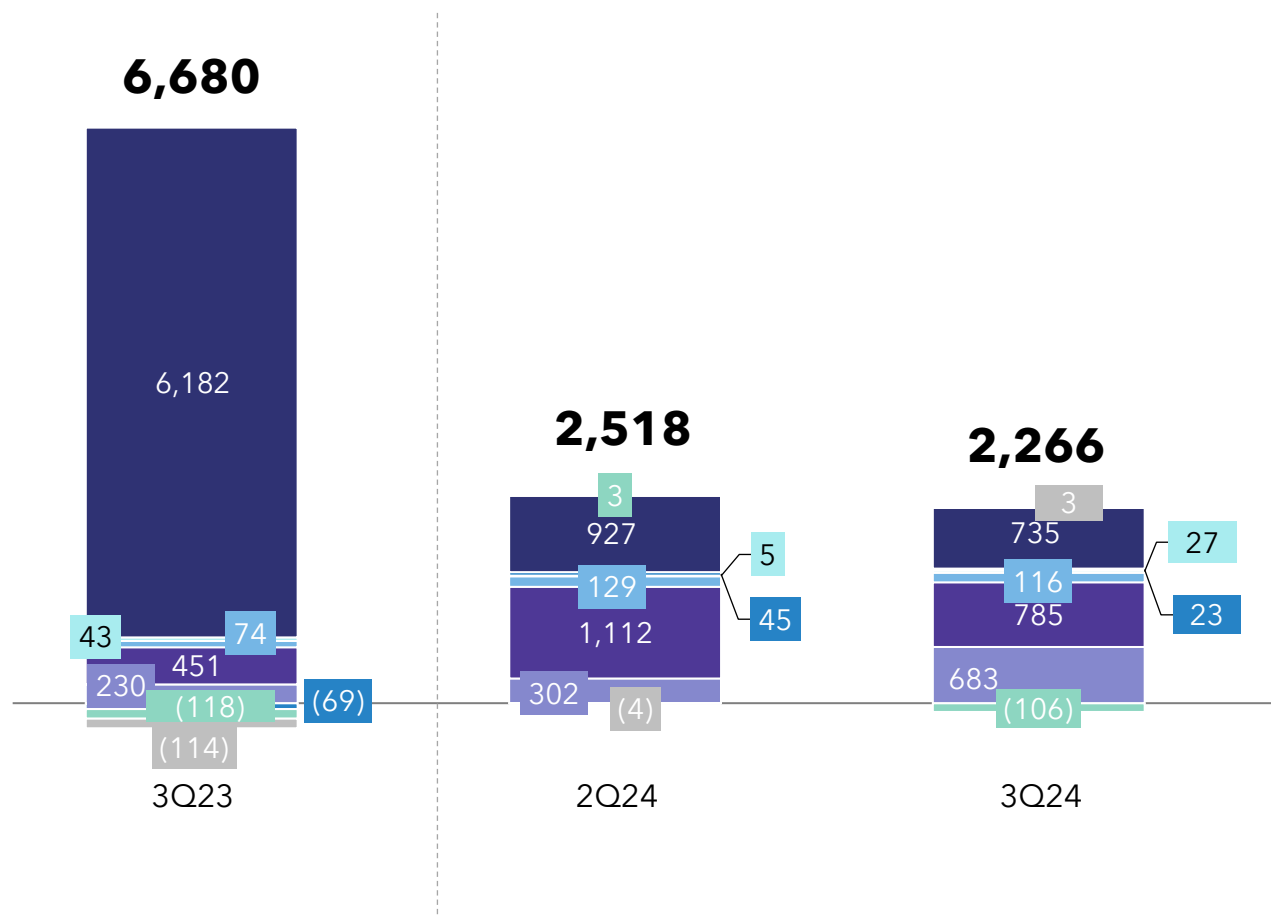
+68% QoQ

+11% YoY

Note: (1) Others include hot water, cooling water, and Zhengding solar rooftop

# Banpu Power consolidated EBITDA – 3Q24

Unit: THB M



**-10% QoQ**

**-66% YoY**

## HPC

-29% QoQ

+74% YoY

## US Power

-21% QoQ

-88% YoY

## BLCP

+127% QoQ

+197% YoY

## China CHP

-10% QoQ

+56% YoY

## Nakoso IGCC

-49% QoQ

n/a YoY

## SLG

+430% QoQ

-38% YoY

## Banpu NEXT

n/a QoQ

n/a YoY

## Others (1)

n/a QoQ

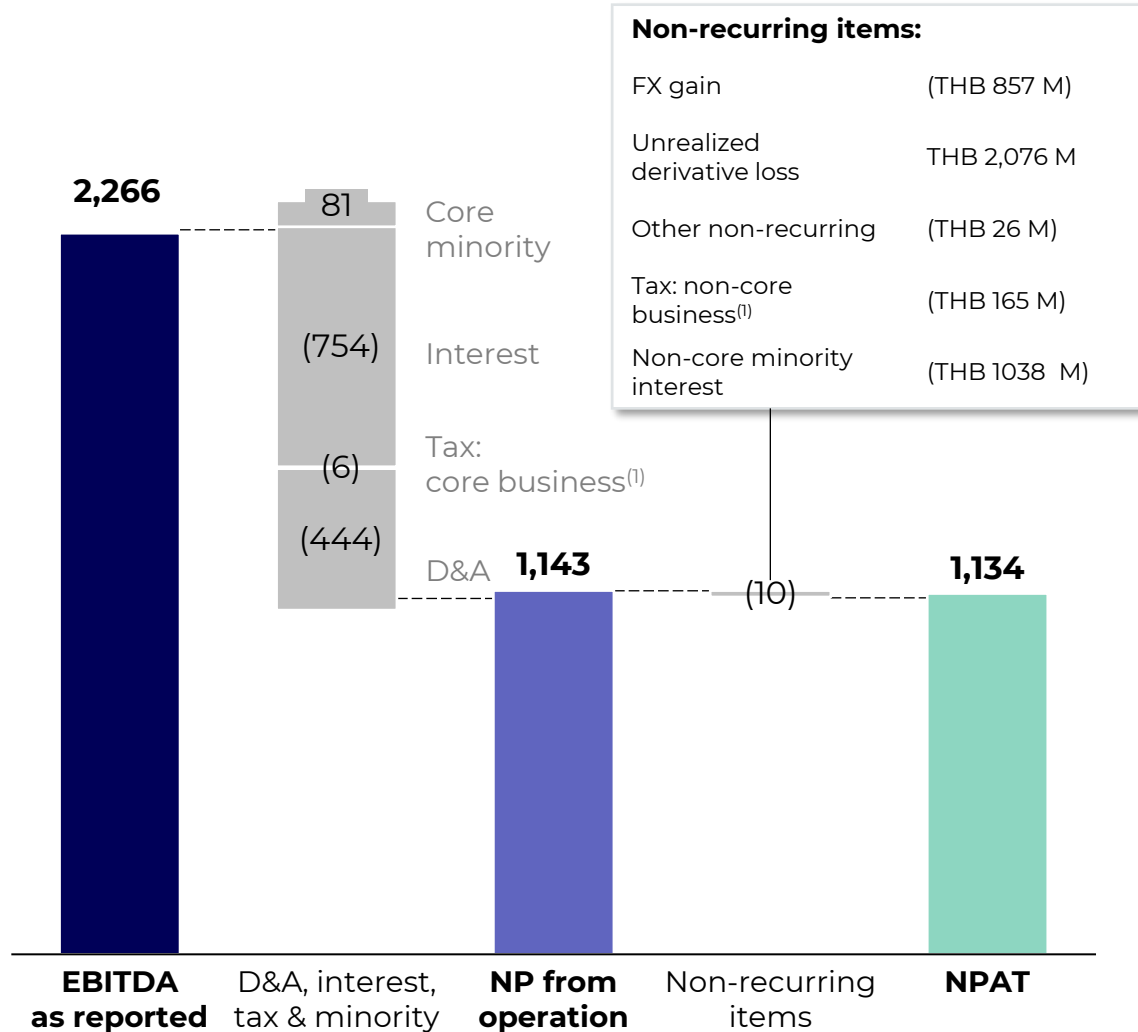
n/a YoY

Note: (1) Others include Head office - BPP

# Banpu Power consolidated NPAT – 3Q24

## 3Q24 NET PROFIT AFTER TAX

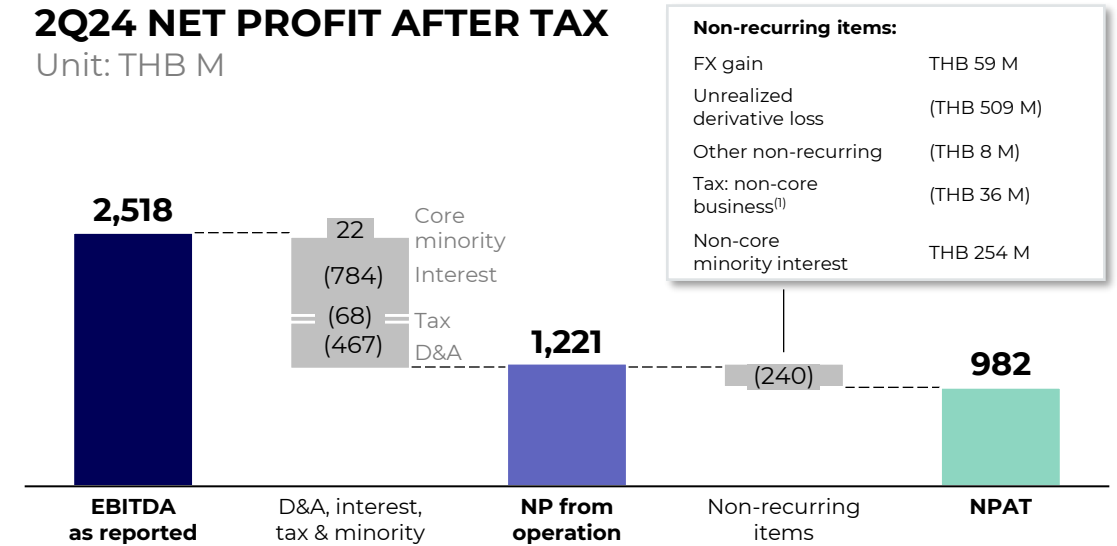
Unit: THB M



Note: (1) Income + Deferred

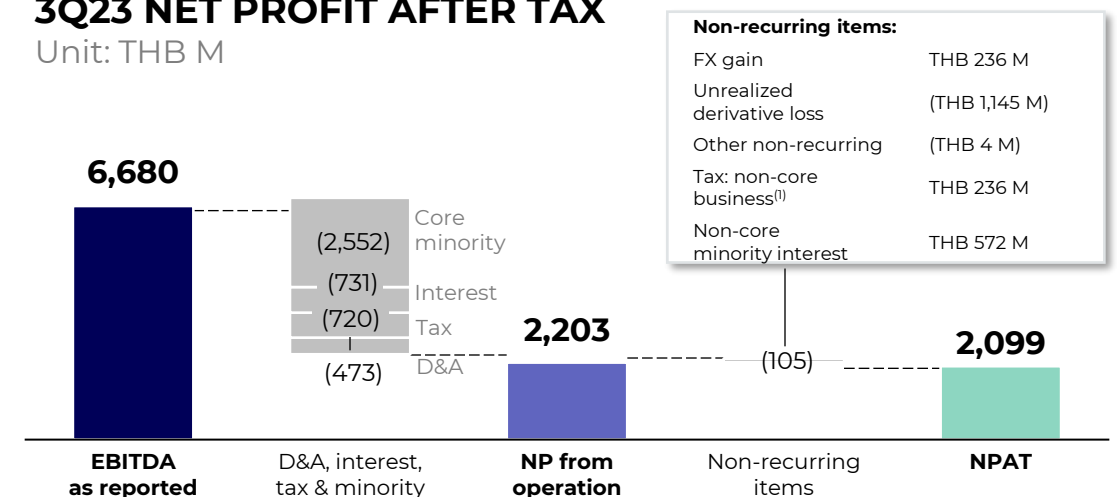
## 2Q24 NET PROFIT AFTER TAX

Unit: THB M



## 3Q23 NET PROFIT AFTER TAX

Unit: THB M

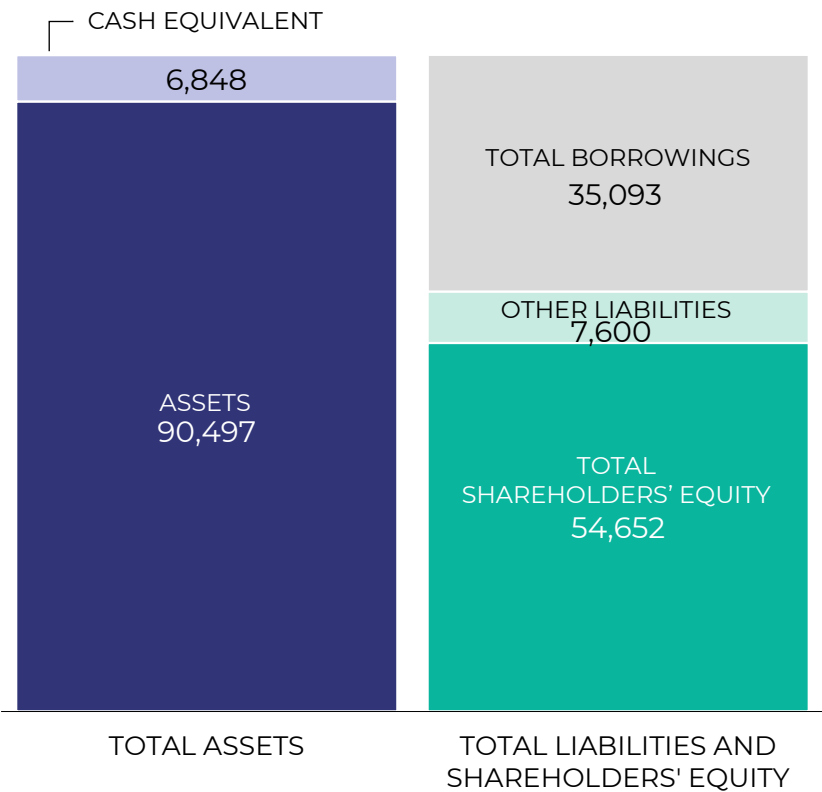




# Banpu Power consolidated financial position – 3Q24

## 3Q24 Consolidated Financial Position

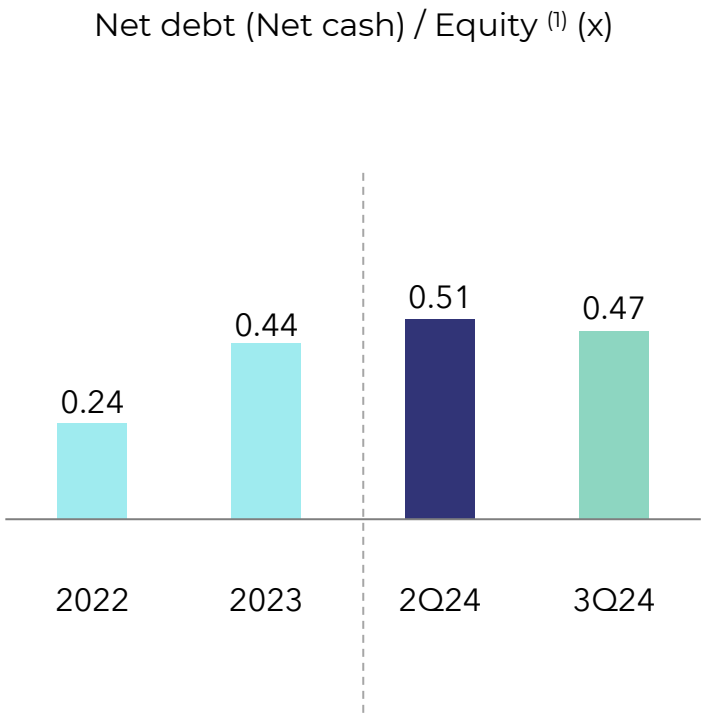
Unit: THB M



30 September 2024

In 3Q24, total assets were THB 97,345 M, an decrease of THB 7,421 M from 2Q24. The net D/E ratio decreased from 0.51 to 0.47 contributed from lower debt

## Gearing Ratios



Note: (1) Net debt to book value of shareholders' equity

# Thermal performance

# China CHP: operational performance

## China Combined Heat and Power (CHP) Plants

In 2006, Banpu invested into 3 combined heat and power plants in China with total of 548 equity MWe at present.

**Quarter update:** All plants operated normally with no disruptions. LN CHP completed coal yard expansion in September with 200,000 tons capacity in total.



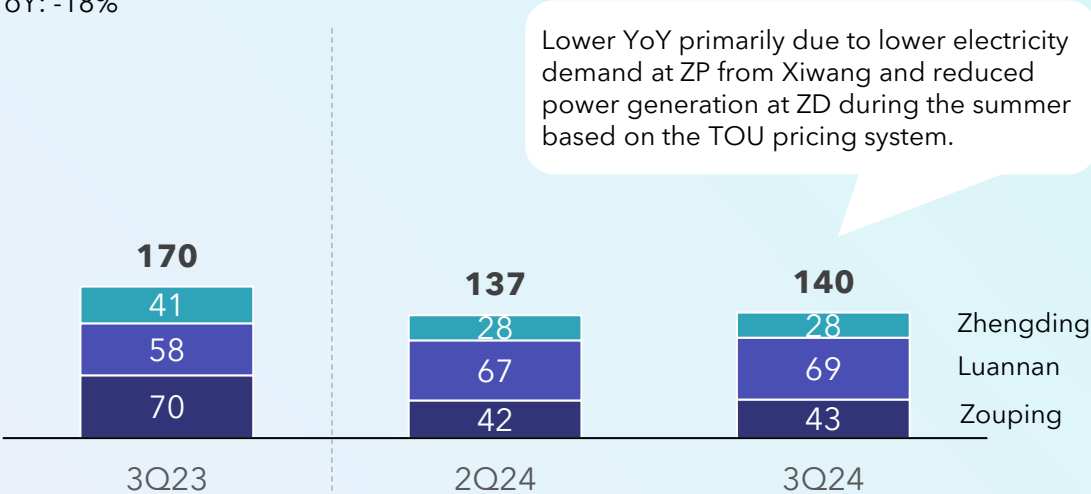
**ZHENGDDING CHP**  
🇨🇳 **HEBEI, CHINA**  
Ownership: 100%  
Power capacity: 139 MWe

**LUANNAN CHP**  
🇨🇳 **HEBEI, CHINA**  
Ownership: 100%  
Power capacity: 246 MWe

**ZOUPING CHP**  
🇨🇳 **SHANDONG, CHINA**  
Ownership: 70%  
Power capacity: 233 MWe

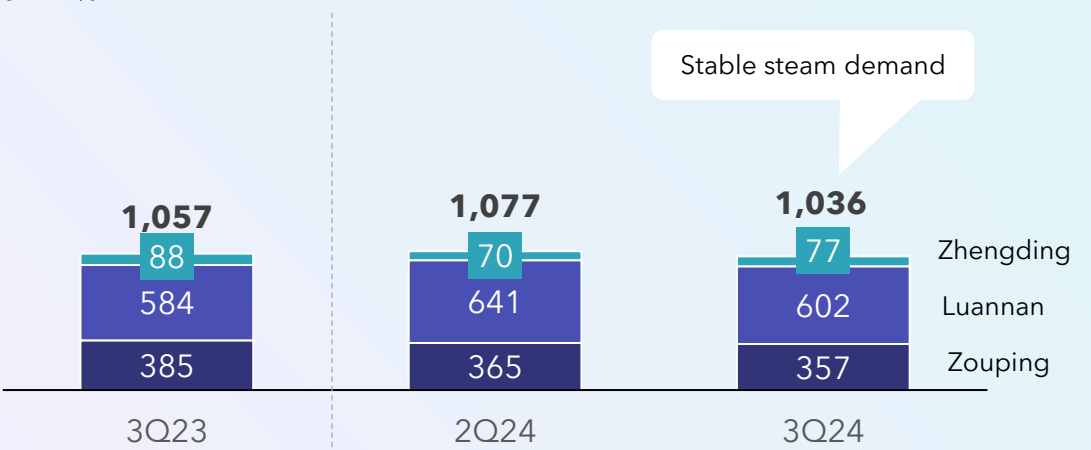
## Electricity sold (GWh)

QoQ: +2%  
YoY: -18%



## Steam sold ('000 t)

QoQ: -4%  
YoY: -2%

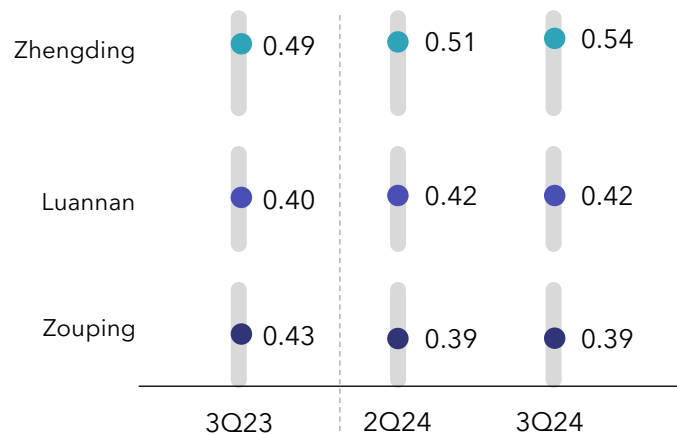




# China CHP: financial performance

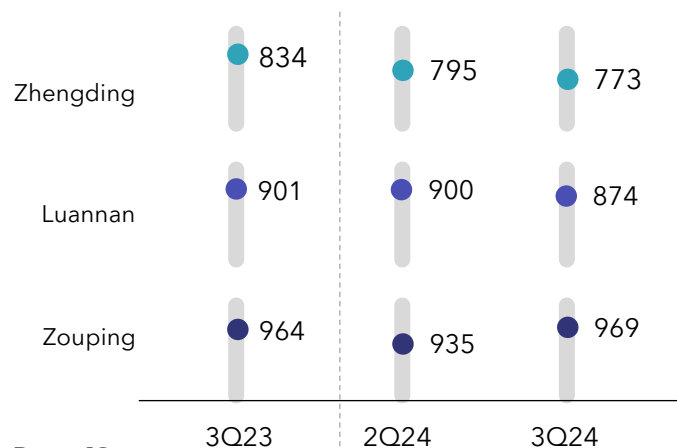
## Tariff (RMB/kWh)

Higher QoQ for ZD contributed by spike hours with highest tariff in summer peak season



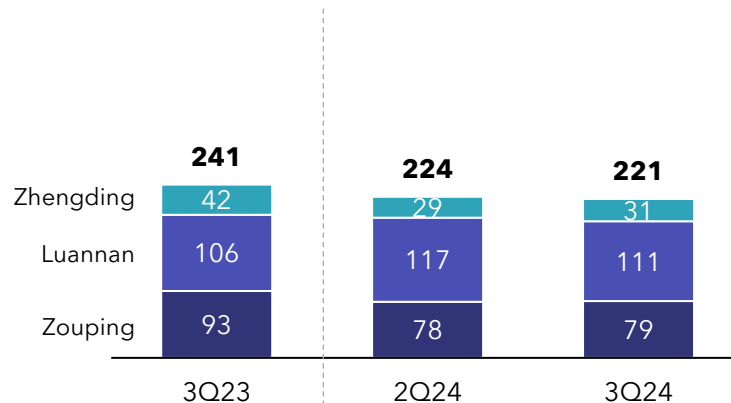
## Coal price (RMB/t)

Higher QoQ for ZP due to the higher demand in summer peak season



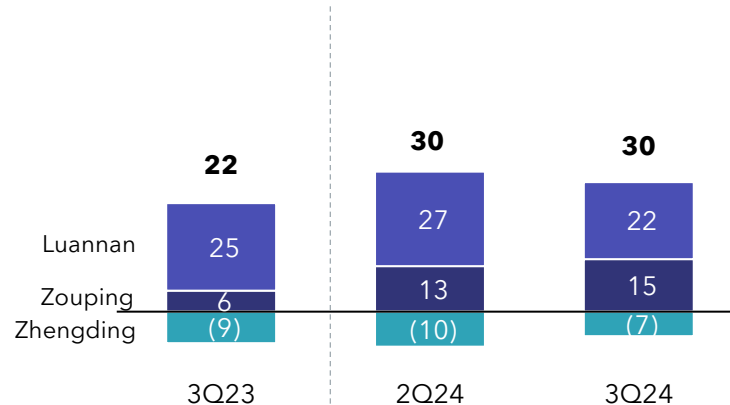
## Total revenue (RMB M)

QoQ: -1%  
YoY: -8%



## EBITDA (RMB M)

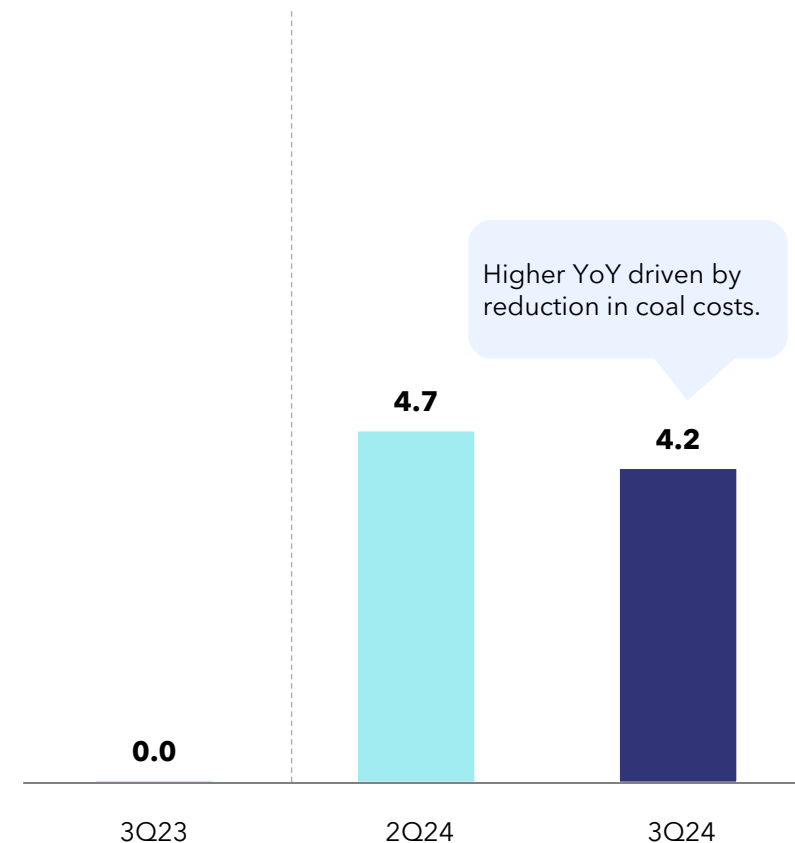
QoQ: +0%  
YoY: +36%



## Profit contribution to BPP (RMB M)

QoQ: -11%  
YoY: +9030%

Based on Banpu Power's  
100% interest for Luannan and  
Zhengding, and 70% for Zouping

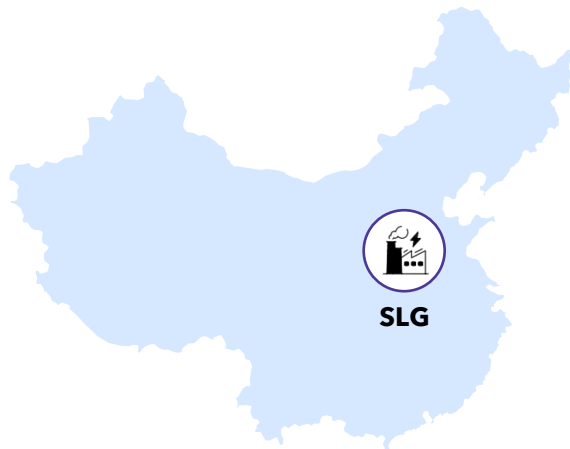



# SLG: operational and financial performance

## Shanxi Lu Guang Power Plant

Commissioned in 2021, SLG is a high efficiency coal-fired power plant that utilizes best of class technology to significantly lower emissions.

**Quarter update:** Unit #1 and Unit #2 were dispatched for reserve shutdowns of 7 days and 11 days, respectively, in Q3 due to low power demand. Industrial steam supply continued in Q3. SLG carried out a coal yard expansion in Q3, increasing total capacity to 250,000 tons.

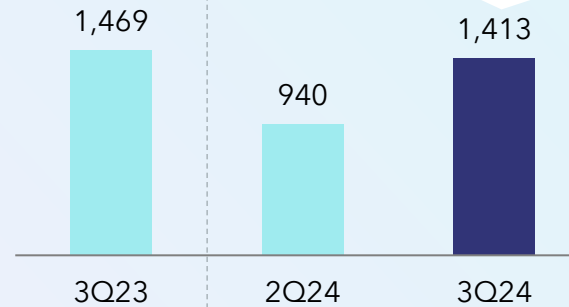


 **SHANXI, CHINA**  
**Ownership:** 30%  
**Power capacity:** 1,320 MW

### Electricity sold (GWh)

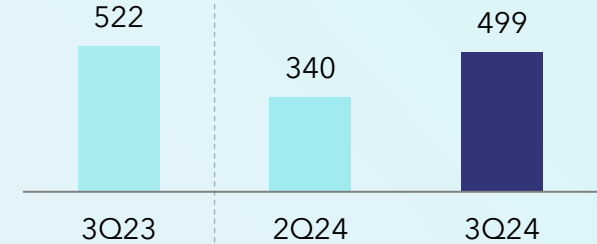
QoQ: +50%  
YoY: -4%

Lower YoY due to reduced demand from mild temperatures and higher hydropower capacity following heavy rainfall.



### Total revenue (RMB M)

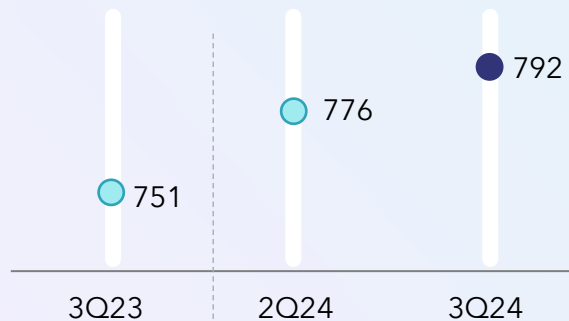
QoQ: +47%  
YoY: -4%



### Standard coal price (RMB/t)

QoQ: +2%  
YoY: +5%

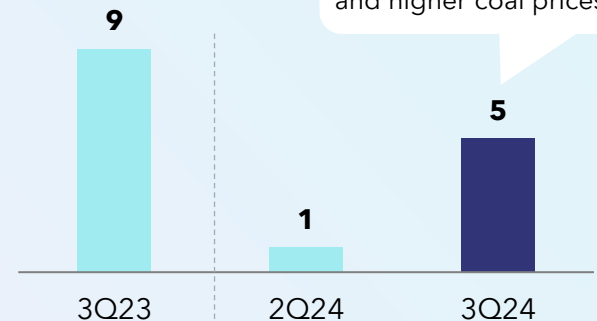
Higher YoY as SLG purchased a portion of the market's coal at a higher price due to high-load operations in Q3.



### Profit contribution to BPP (RMB M)

QoQ: +440%  
YoY: -40%

Lower YoY mainly due from lower revenue and higher coal prices.

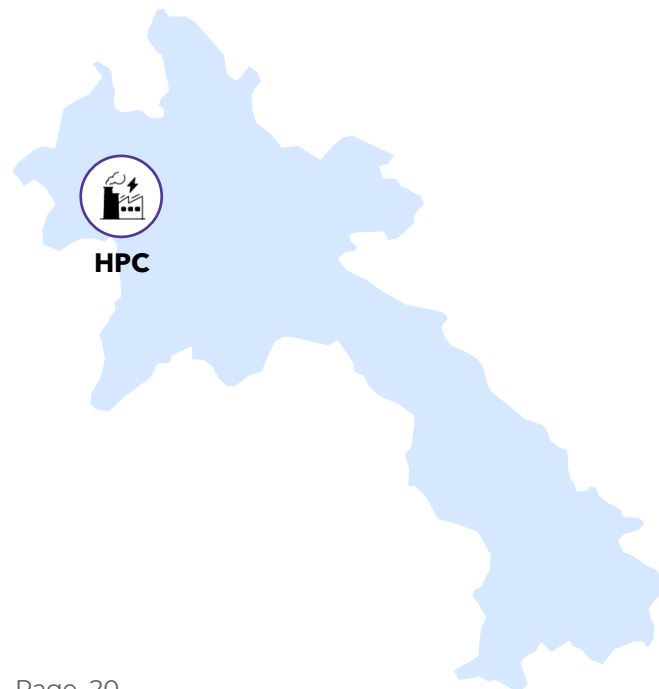



# HPC: operational performance

## HPC Power Plant

HPC is a lignite mine mouth power plant that commissioned between 2015 and 2016, making it Lao's largest power generating asset in terms of capacity.

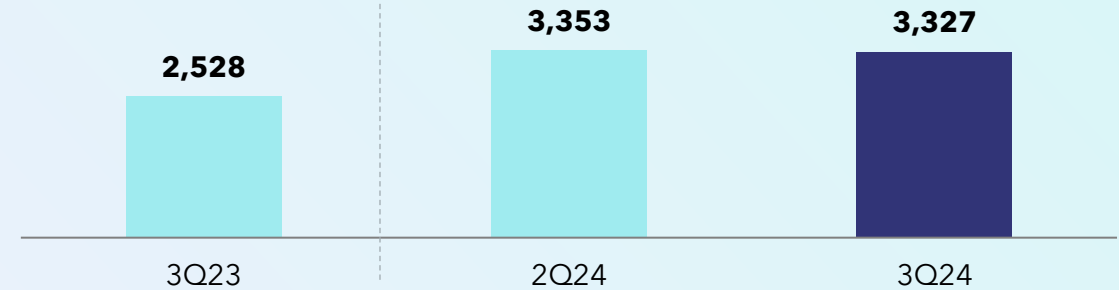
**Quarter update:** Operating smoothly as planned



**HPC**  
 **XAYABURI, LAOS**  
**Ownership:** 40%  
**Power capacity:** 1,878 MW

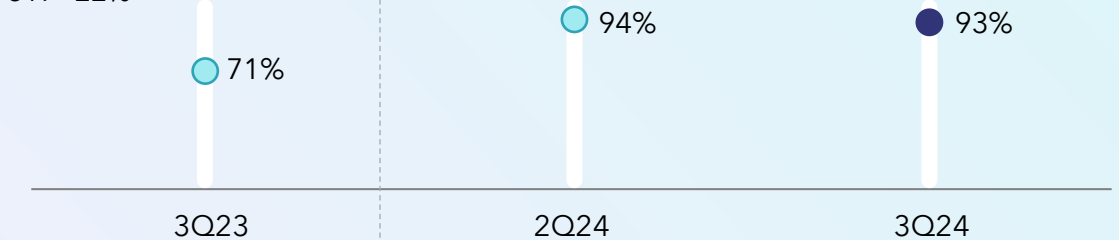
### Net generation (GWh)

QoQ: -1%  
YoY: +32%



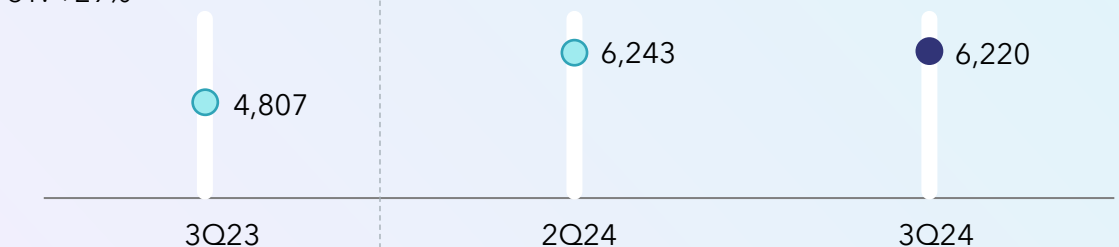
### Equivalent availability factor (%)

QoQ: -1%  
YoY: +22%



### Contracted availability hour (hrs)

QoQ: -0%  
YoY: +29%



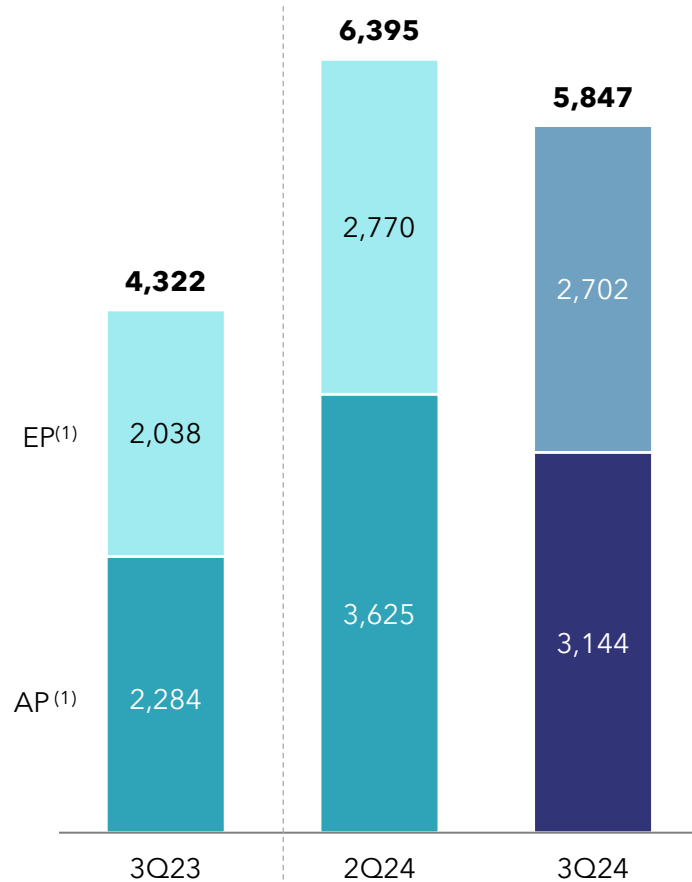


# HPC:

## financial performance

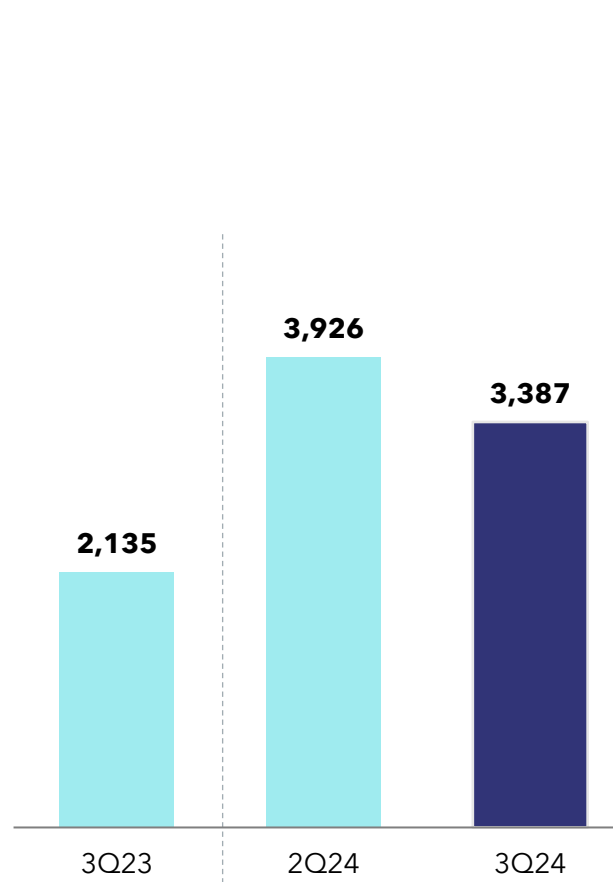
### Total revenue (THB M)

QoQ: -9%  
YoY: +35%



### EBITDA (THB M)

QoQ: -14%  
YoY: +59%

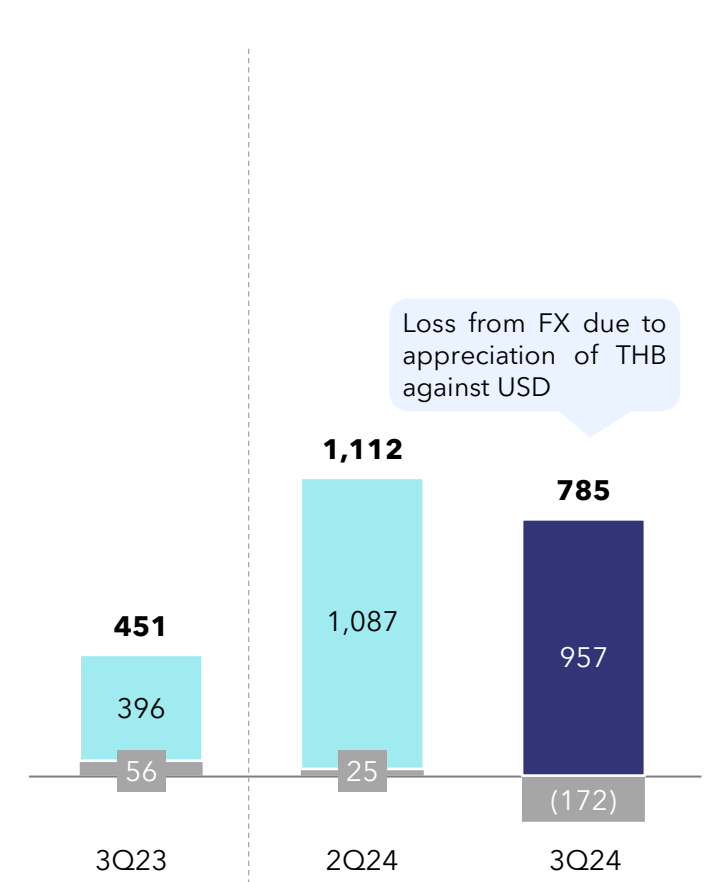


### Profit contribution to BPP (THB M)

QoQ: -29%  
YoY: +74%

Based on Banpu Power's 40% interest

■ FX Gain/loss



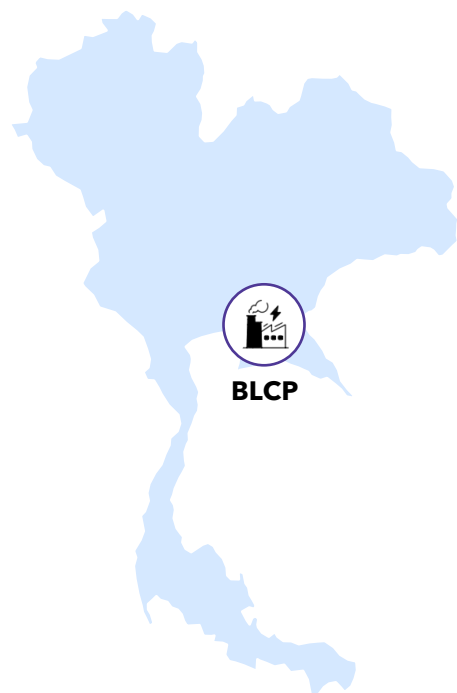
Note: (1) 100% basis for availability payment (AP), energy payment (EP)


# BLCP: operational performance

## BLCP Power Plant

BLCP is a coal-fired power plant located in Map Ta Phut Industrial estate, Rayong with Unit 1 and 2 COD in 2006 and 2007, respectively.

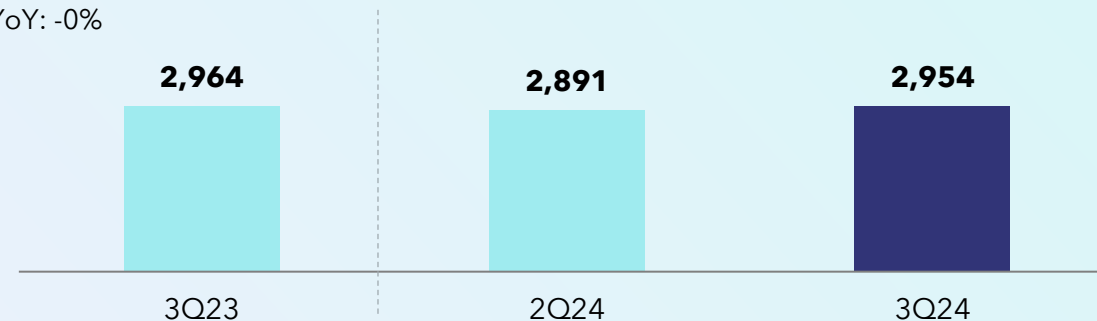
**Quarter update:** Operating smoothly as planned



**BLCP**  
 **RAYONG, THAILAND**  
**Ownership:** 50%  
**Power capacity:** 1,434 MW

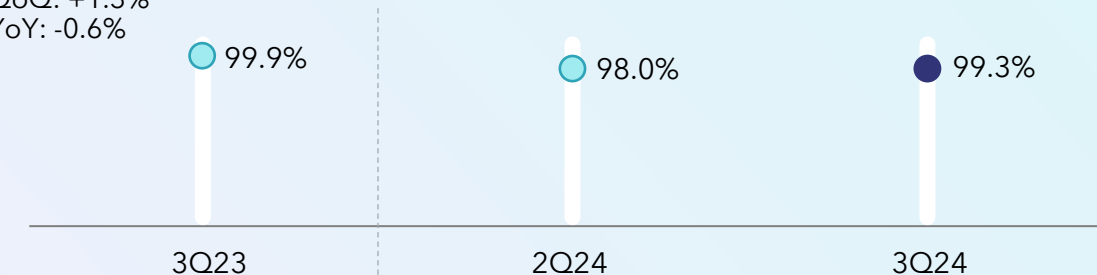
### Net generation (GWh)

QoQ: +2%  
YoY: -0%



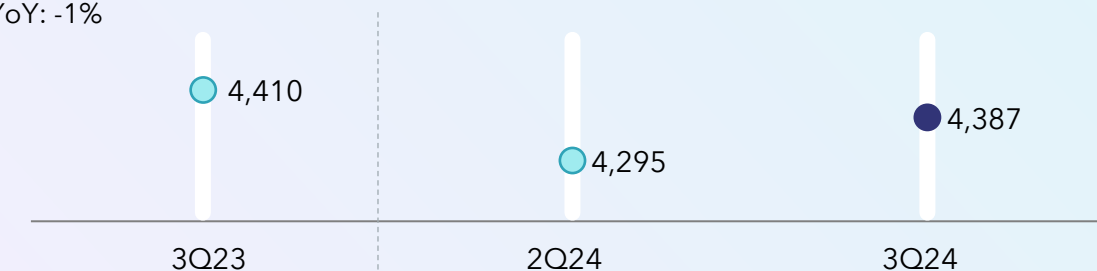
### Equivalent availability factor (%)

QoQ: +1.3%  
YoY: -0.6%



### Contracted availability hour (hrs)

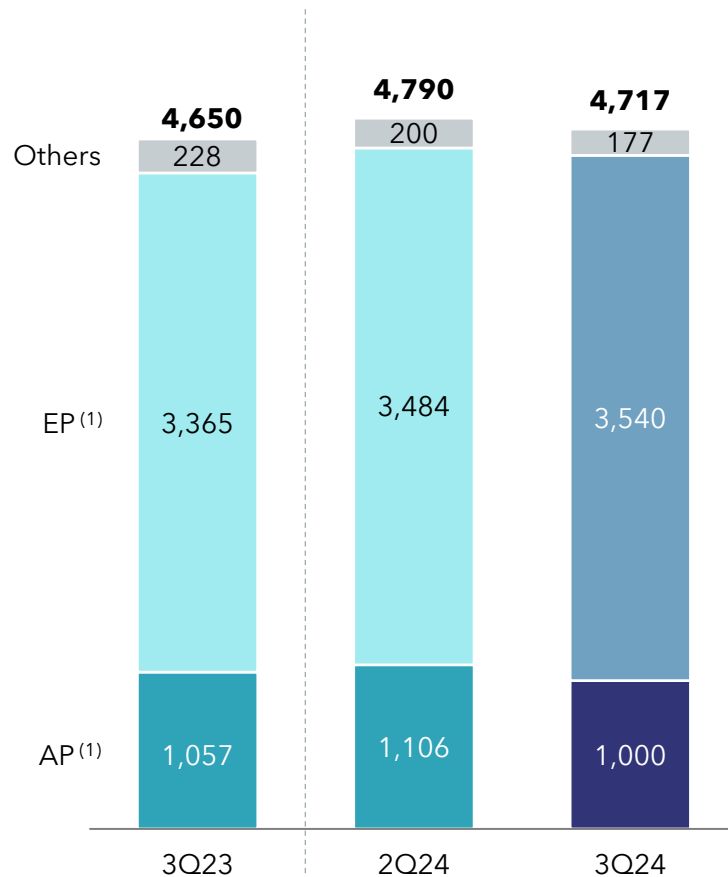
QoQ: +2%  
YoY: -1%



# BLCP: financial performance

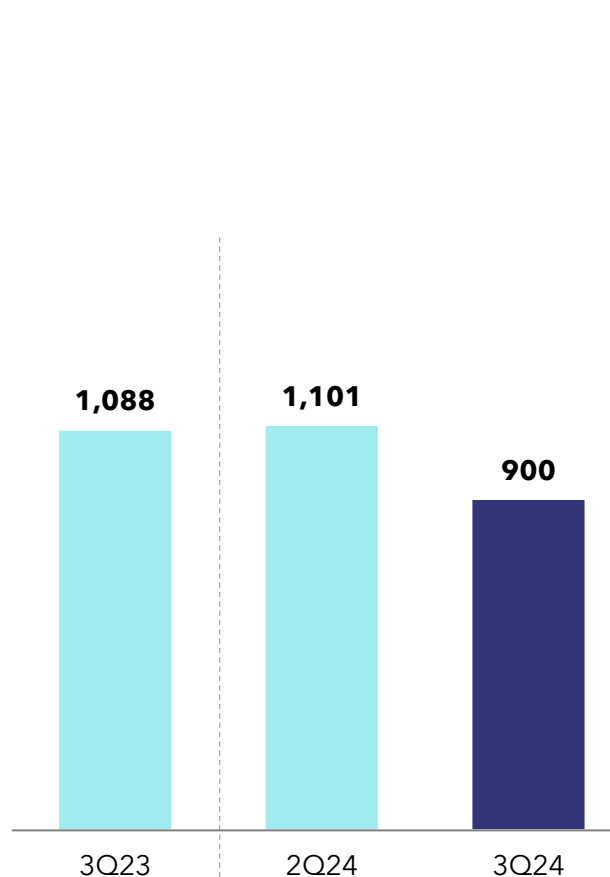
## Total revenue (THB M)

QoQ: -2%  
YoY: +1%



## EBITDA (THB M)

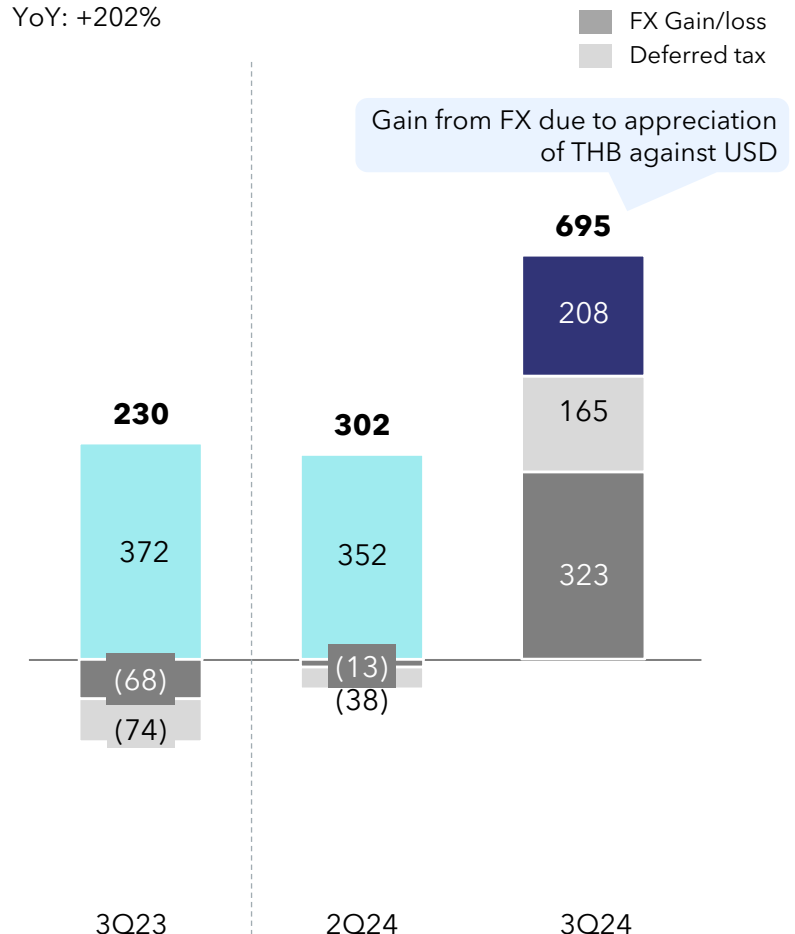
QoQ: -18%  
YoY: -17%



## Profit contribution to BPP (THB M)

QoQ: +131%  
YoY: +202%

Based on Banpu Power's 50% interest



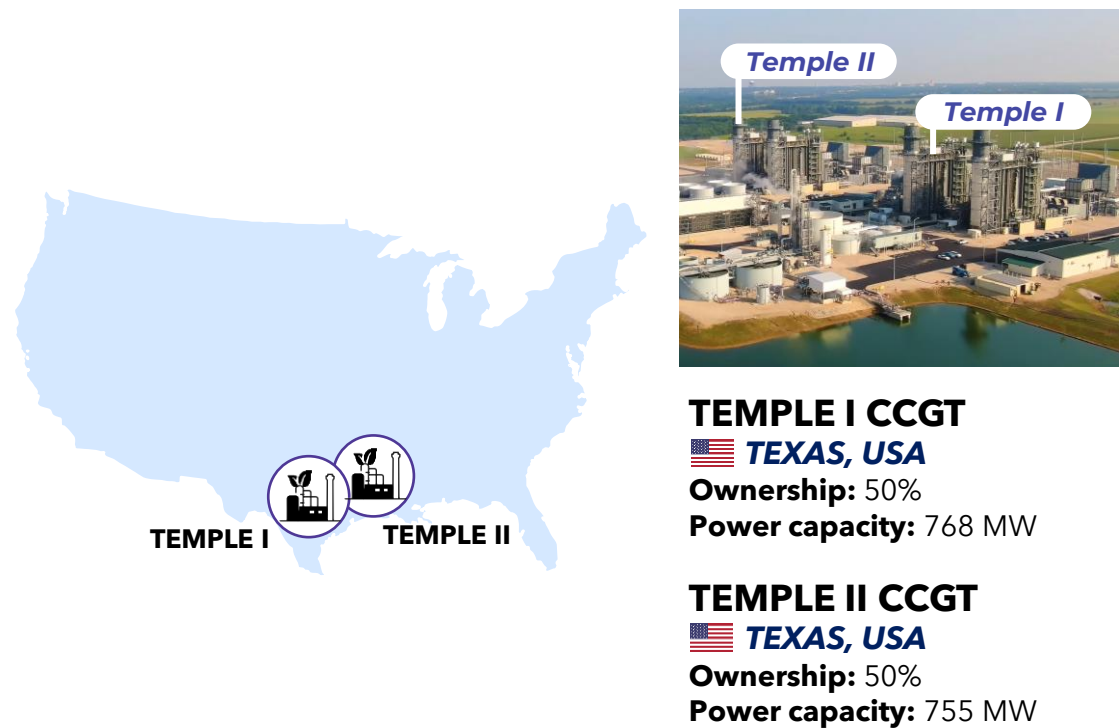
Financial performance provided are based on IFRS accounting standard  
Note: (1) 100% basis for availability payment (AP), energy payment (EP)

# Temple I & II: operational performance

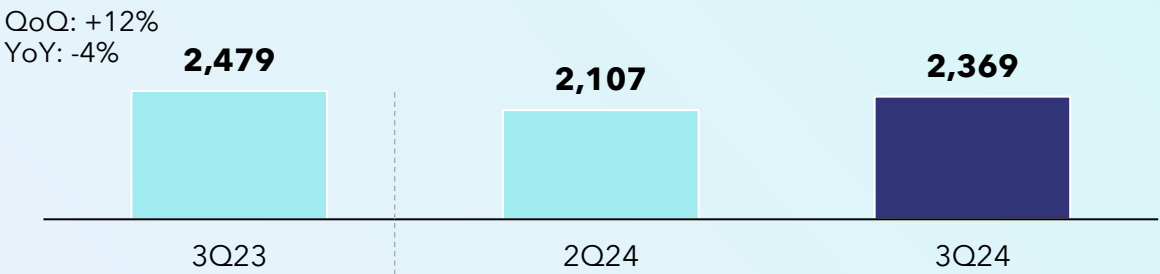
## Temple I & II CCGT

Temple I & II are combined cycle gas-fired power plants located next to each other, supplying base load power to the ERCOT market, COD in 2014 and 2015, respectively. Both assets have recognized revenue since November 2021 and July 2023, respectively.

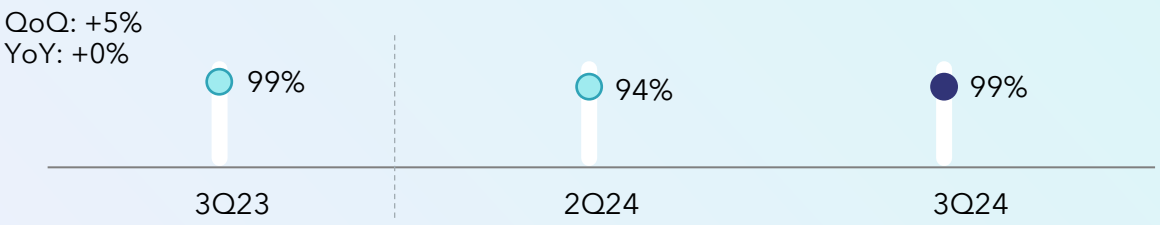
**Quarter update:** The plants operated under normal conditions.



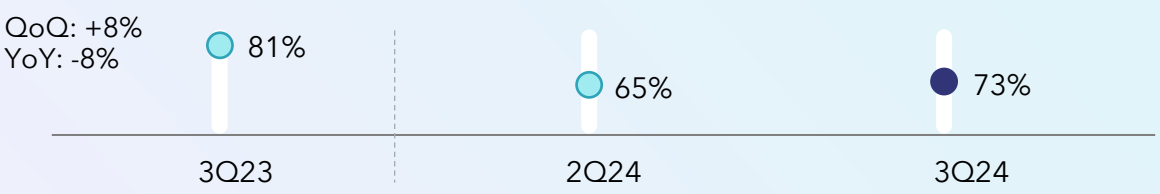
### Net generation (GWh)



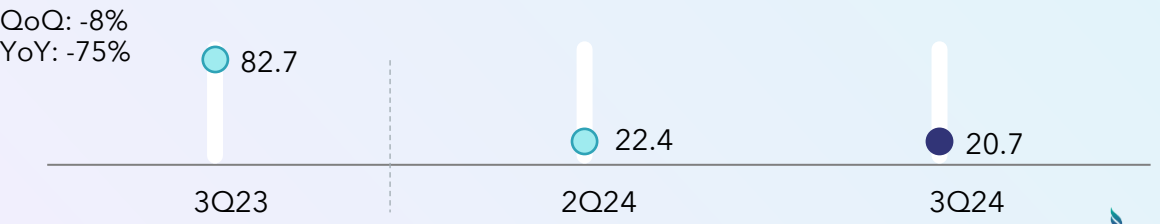
### Equivalent availability factor (%)



### Capacity factor (%)



### Spark spread (US\$/MWh)

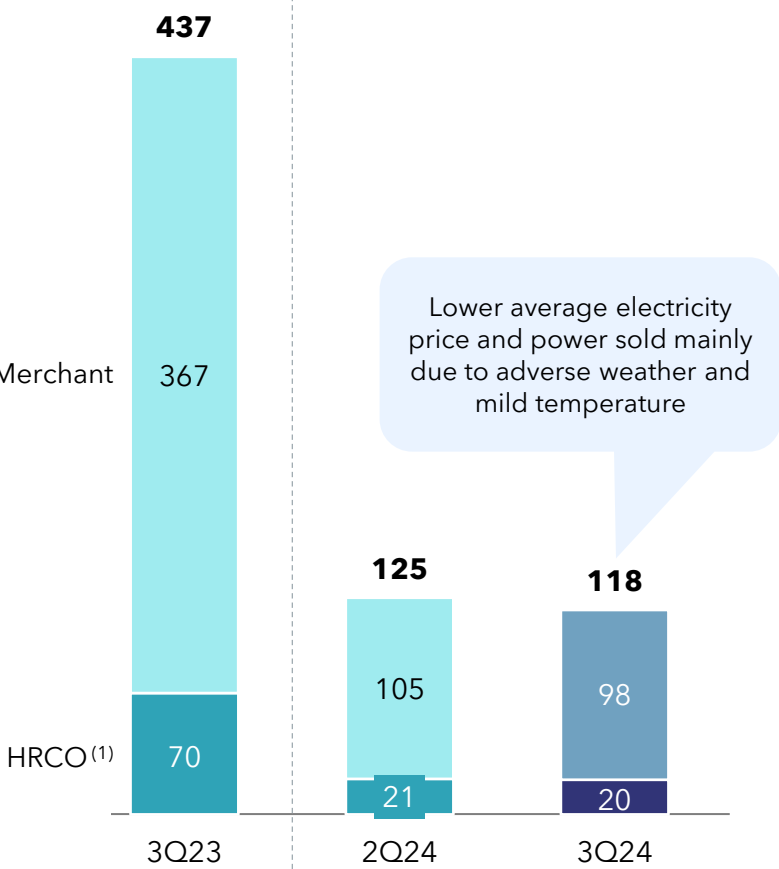




# Temple I & II: financial performance

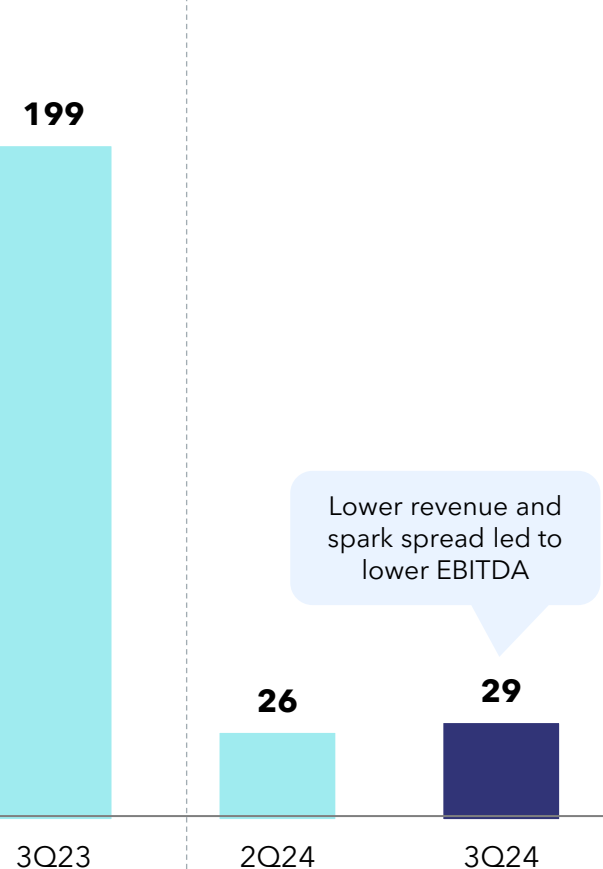
## Total revenue (US\$ M)

QoQ: -6%  
YoY: -73%  
Based on 100% interest



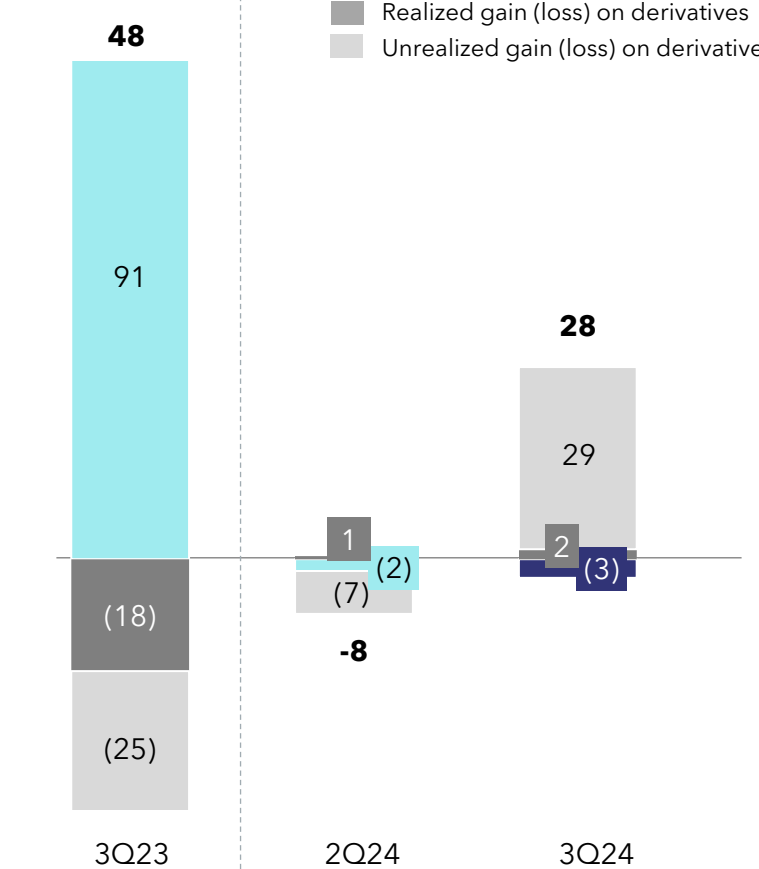
## EBITDA (2) (US\$ M)

QoQ: +11%  
YoY: -85%  
Based on 100% interest



## Profit contribution to BPP (US\$ M)

QoQ: N/A  
YoY: -41%  
Based on Banpu Power's 50% interest



Note:  
(1) Heat Rate Call Option (HRCO) is a derivative used to secure monthly fixed revenue to ensure stable cash flow streams for both low and peak season  
(2) EBITDA includes realized gain / (loss) from derivative but excluded unrealized gain / (loss) from derivative.

# Nakoso: operational & financial performance

## Nakoso Power Plant

Nakoso is an integrated gasification combined cycle power plant that generates power at higher efficiencies with lower emissions and fuel consumption, COD in April 2021.

**Quarter update:** Nakoso IGCC operated under normal conditions.

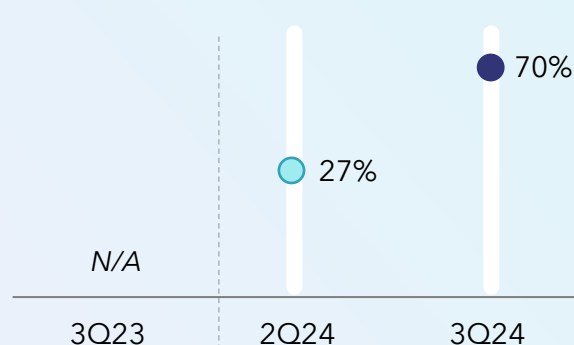


**Nakoso**  
🇯🇵 **FUKUSHIMA, JAPAN**  
**Ownership:** 13.4% <sup>(1)</sup>  
**Power capacity:** 543 MW

Note:  
(1) BPP owns 33.5% in NIMCO, which owns 40% of Nakoso IGCC

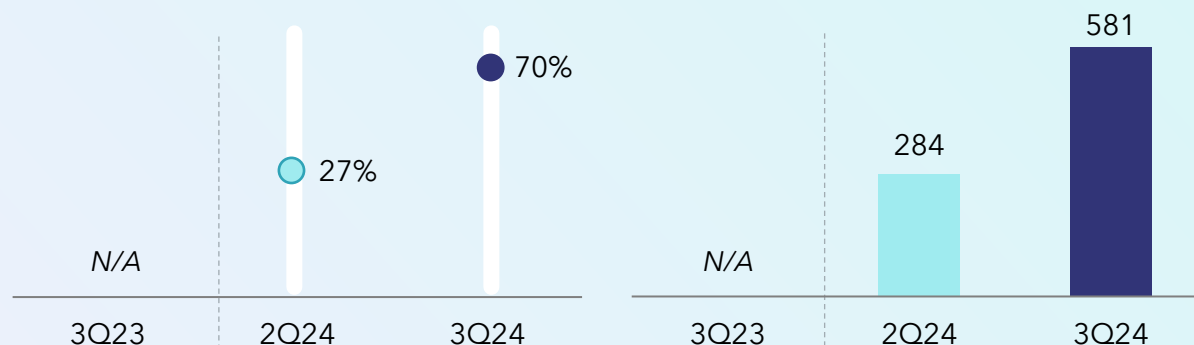
## Equivalent availability factor (%)

QoQ: +43%  
YoY: N/A



## Net generation (GWh)

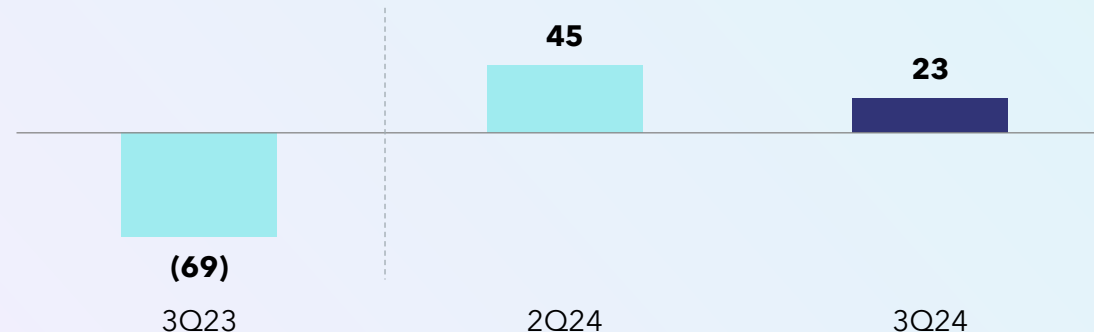
QoQ: +105%.  
YoY: N/A




## Profit Contribution to BPP (THB M)

QoQ: -49%  
YoY: N/A

Based on Banpu Power's  
13.4% interest







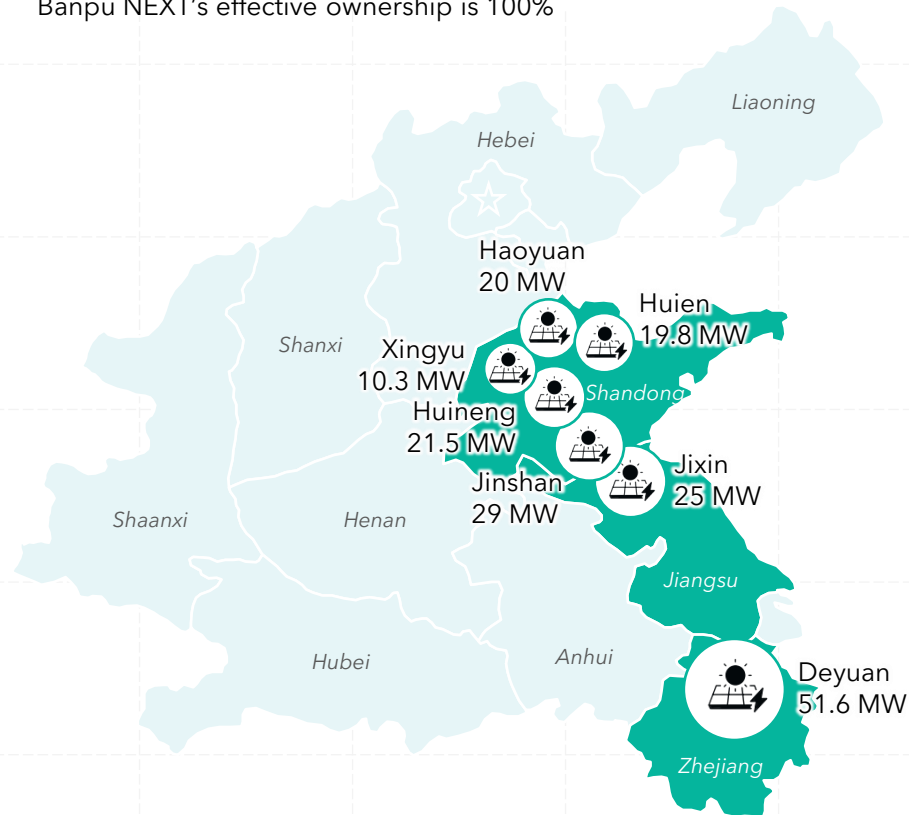
# Renewables & Energy Technology performance



# China solar: total equity capacity of 177 MW<sub>dc</sub>

## Banpu Power's solar portfolio in China

Banpu NEXT's effective ownership is 100%



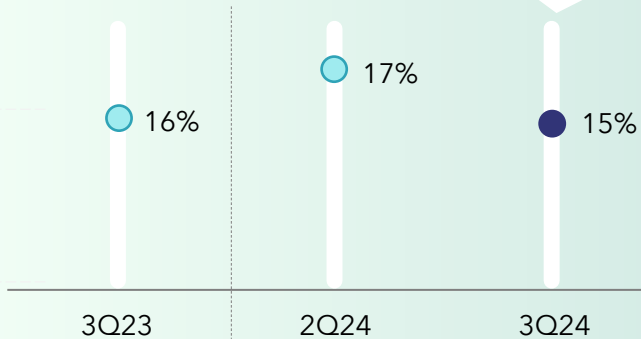
Equity capacity based on Banpu NEXT's interest

Note: RMB1.0/kWh of FIT and subsidies for Jinshan, Haoyuan and Huineng phase 1, RMB0.83/kWh for Huineng phase 2, RMB0.98/kWh for Hui'en and RMB0.87/kWh for Deyuan

## Average capacity factor (%)

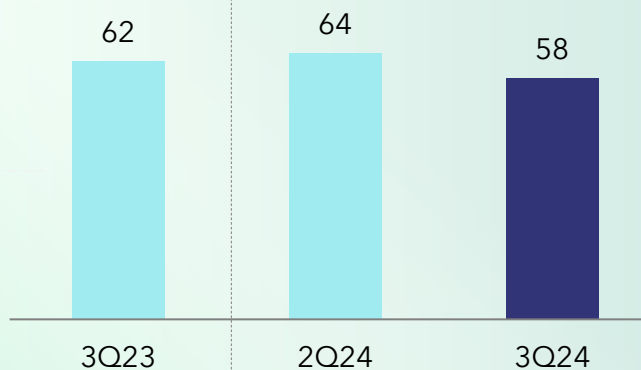
QoQ: -2%  
YoY: -1%

Lower QoQ and YoY  
due to grid curtailment



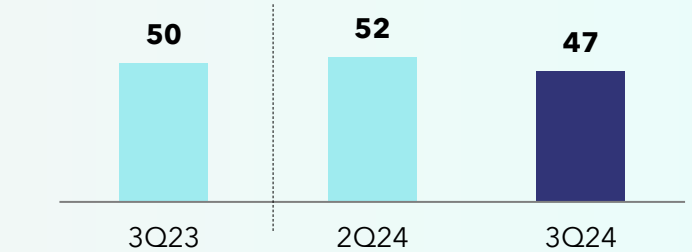
## Power sold (GWh)

QoQ: -9%  
YoY: -6%



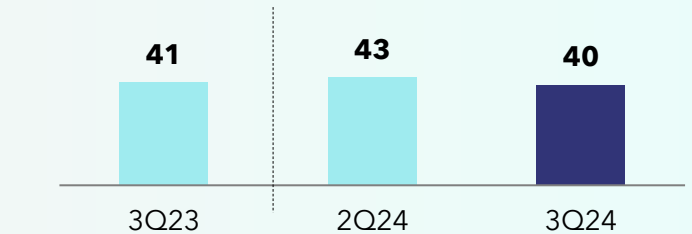
## Revenue (RMB M)

QoQ: -10%  
YoY: -6%



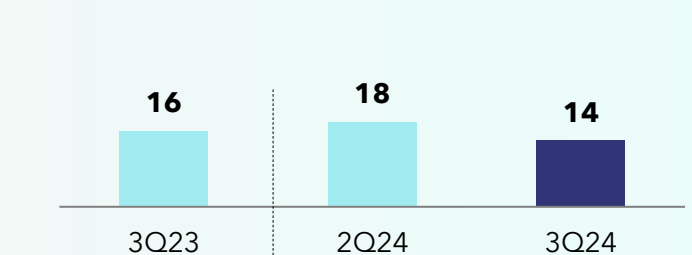
## EBITDA (RMB M)

QoQ: -7%  
YoY: -2%



## Net profit (RMB M)

QoQ: -22%  
YoY: -13%

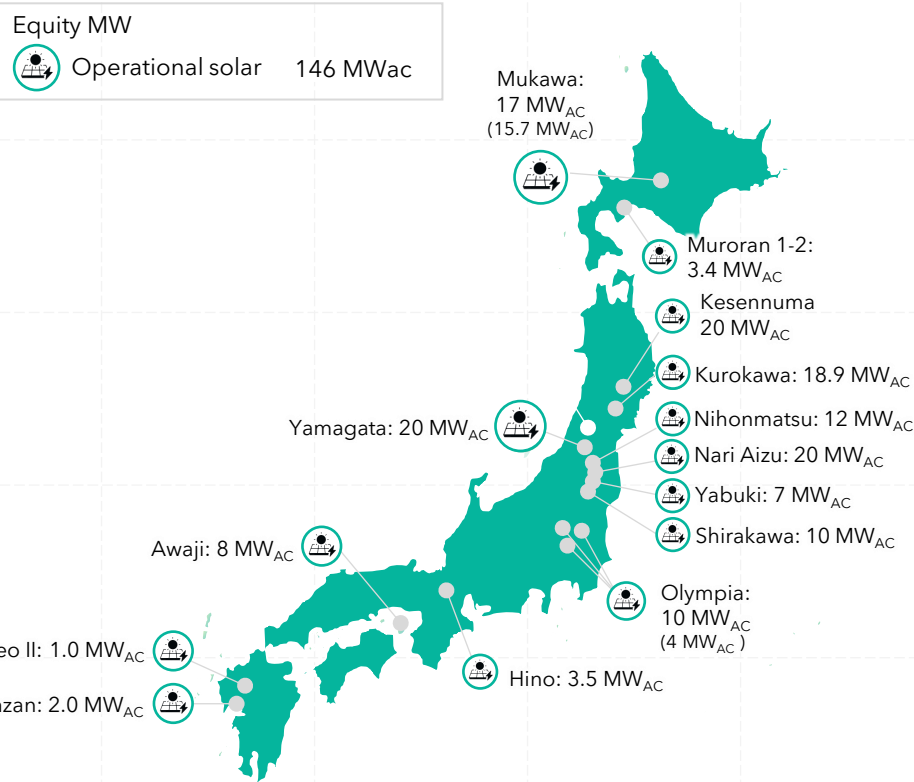




# Japan solar: total equity capacity of 146 MW<sub>ac</sub>

## Banpu Power's solar portfolio in Japan

Capacity presented on a 100% basis and Banpu NEXT's equity capacity in parentheses; figure not drawn to scale

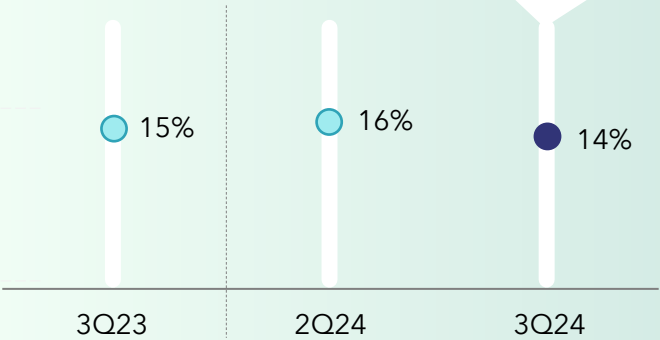


Equity capacity based on Banpu NEXT's interest

## Average capacity factor (%)

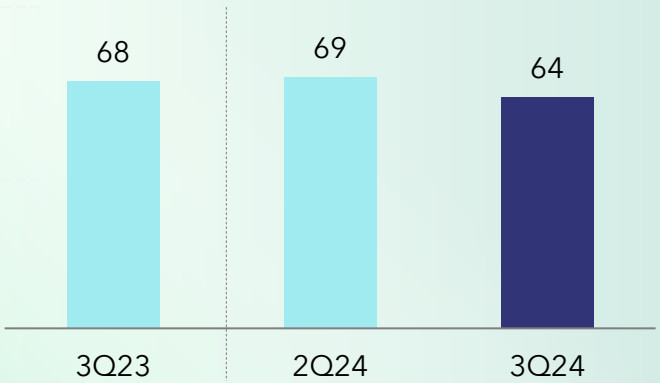
QoQ: -2%  
YoY: -1%

Lower QoQ and YoY due to unfavorable weather conditions



## Power sold (GWh)

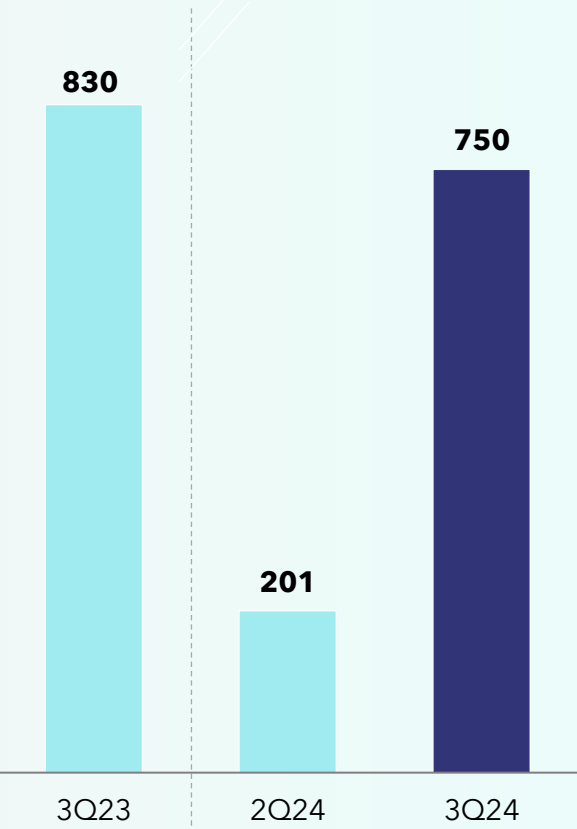
QoQ: -8%  
YoY: -7%



## Cash Distribution<sup>(1)</sup> (JPY M)

QoQ: +273%  
YoY: -11%

Based on Banpu NEXT's 40-100% interest



(1) From TK investment

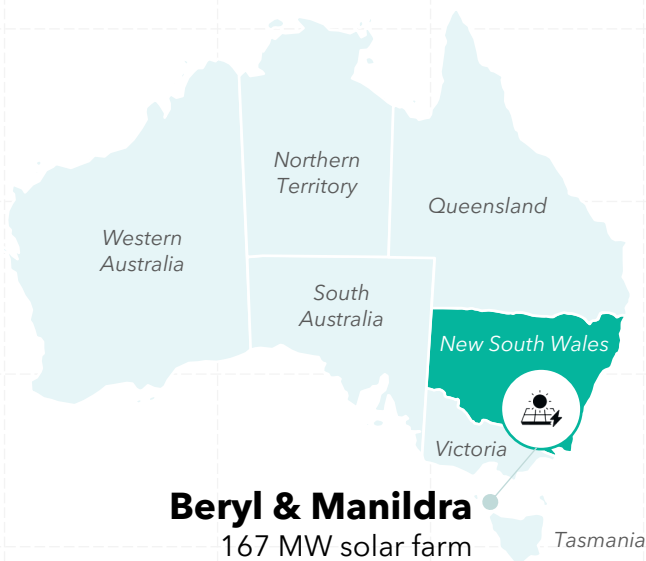
# Australia solar: Beryl and Manildra

## Banpu Power's solar portfolio in Australia

### Equity Capacity <sup>(1)</sup> (MW)



Operational solar 33 MW



### Beryl & Manildra

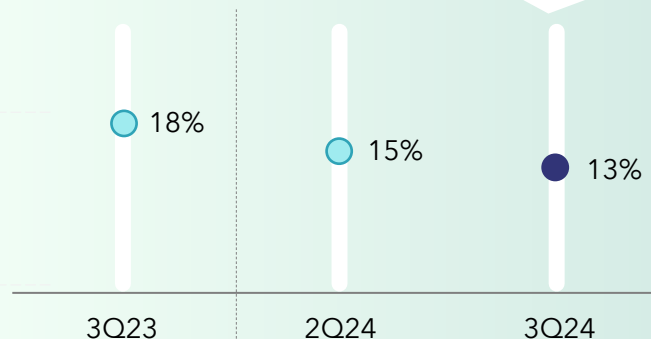
167 MW solar farm  
(33 MW)

Note: (1) Equity capacity based on Banpu NEXT's interest, with the remaining 134 MW held by Banpu Group

### Average capacity factor (%)

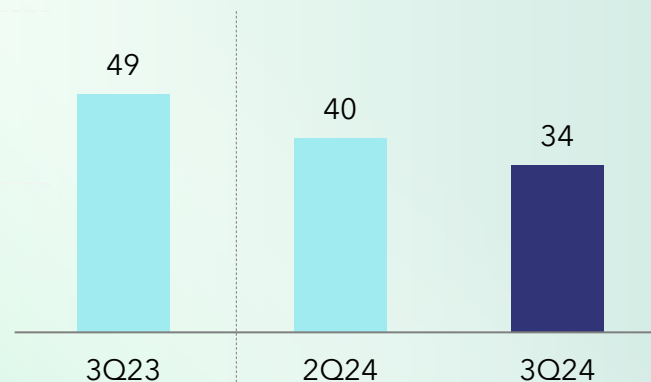
QoQ: -2%  
YoY: -5%

Lower QoQ and YoY due to curtailment and unfavorable weather conditions.



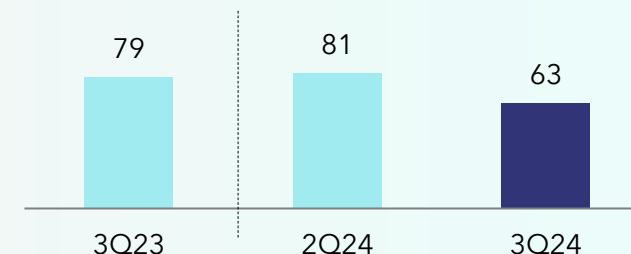
### Power sold (GWh)

QoQ: -14%  
YoY: -30%



### Average Power Tariff (A\$/MWh)

QoQ: -22%  
YoY: -20%

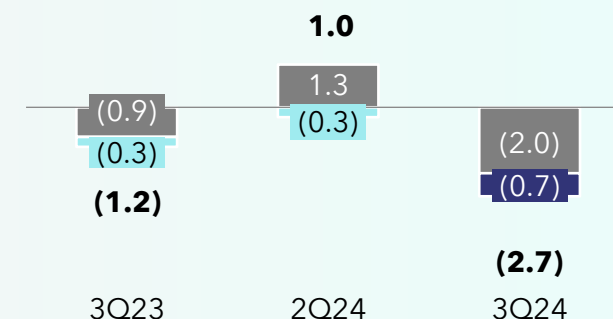


### Net profit (A\$ M)

QoQ: N/A  
YoY: N/A

Based on Banpu NEXT's  
20% interest

■ Gain (loss) on derivatives






# Vietnam renewables: solar and wind

## Banpu Power's renewables portfolio in Vietnam

Average wind speed at  
100 m height (m/s)

4-5 5-6 >6

### Equity Capacity (MW)

-  Operational solar 35 MW
-  Operational wind 37.6 MW
-  Developing wind 80 MW

### Vinh Chau (Soc Trang)

Phase 1 - 30 MW onshore wind  
(Tariff & COD date under finalization)  
Phase 2 & 3 - 50 MW onshore wind  
(Feasibility study)

### El Wind Mui Dinh

37.6 MW  
Onshore Wind

### Nhon Hai Solar

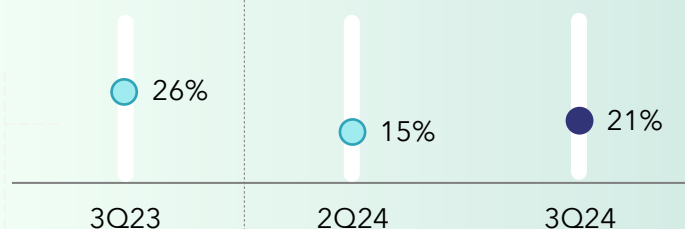
35 MW

Equity capacity based on Banpu NEXT's interest

## Average capacity factor (%)

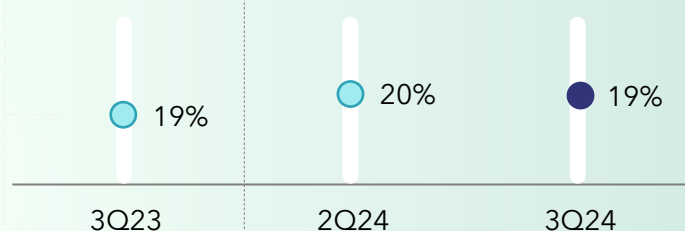
### WIND

QoQ: +5%  
YoY: -5%



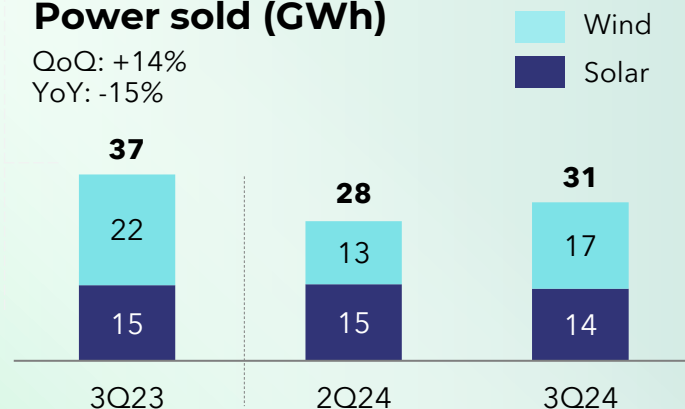
### SOLAR

QoQ: -1%  
YoY: +1%



## Power sold (GWh)

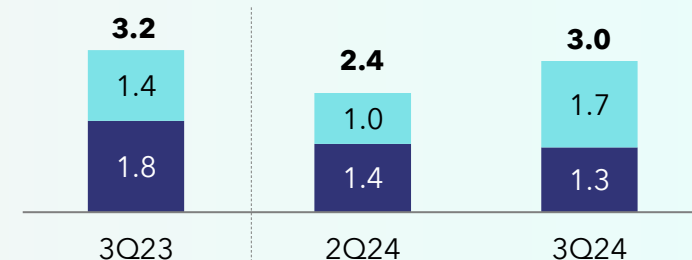
QoQ: +14%  
YoY: -15%



## Revenue (US\$ M)

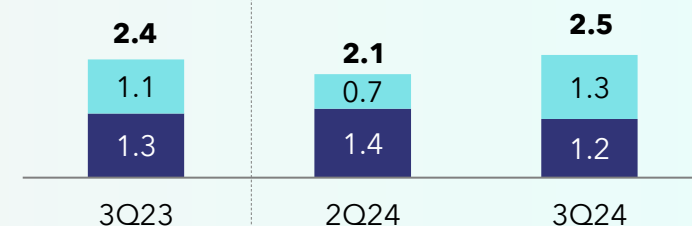
QoQ: +27%  
YoY: -7%

Based on Banpu NEXT's  
100% interest



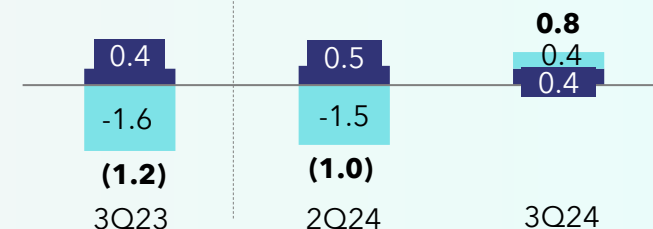
## EBITDA (US\$ M)

QoQ: +28%  
YoY: +4%



## Net profit (US\$ M)

QoQ: N/A  
YoY: N/A



# Energy technology: current position and future targets

NEW BUSINESS & INVEST. ENERGY MGMT SERVICES INFRA SERVICES

3Q24

2025 target

2030 target

INTEGRATED  
CLEAN ENERGY  
ECOSYSTEM



**Energy trading and  
energy storage project**

**1,769 GWh**

Electricity sales (9M24)

In progress

Battery farm

**2,400 GWh**

(annually)

**58 MWh**

Storage capacity



**Solar: rooftop & floating**

**256 MW**

Committed capacity

**500 MW**



**Smart cities &  
energy management**

**36 projects**

Energy management,  
Smart infra, Total solution  
services, etc.

**60 projects**



**Battery production**

**3.0 GWh**

Production capacity

**6.0 GWh**



**E-Mobility**

**488 MWh**

Electricity sales  
(MuvMi battery & charger)

**861 Units**

EVs (Battery + 2W)

**MaaS**

Mobility-as-a-service





# Energy technology: 3Q24 energy trading and energy storage updates

## IMPLEMENTED AN ADVANCED MARKETING & SALES STRATEGY WITH MARKET-DRIVEN PRICING AND SECURED SUPPLY AGREEMENTS VIA A COMPETITIVE TENDERING

**1,769 GWh**

3Q24 accumulative sales

**1,445 clients**

Increasing from 1,286 clients in 2Q24

**9 utility areas**

From both private and public sectors

*45% of total sales are market-linked price products, while the remaining sales are fixed-price contracts secured through tendering and hedged to minimize potential risks.*



## IWATE TONO PROJECT (UTILITY-SCALE BATTERY STORAGE)

**58 MWh**

Capacity

**2Q25**

Expected COD

**99%**

Construction progress

### PROJECT UPDATES

Phase 2 of the construction of extra high-voltage electric equipment and the substation is ongoing without any delay of the planned construction schedule.



# Energy technology: 3Q24 energy management updates

## DISTRICT COOLING SYSTEM (DCS) AT GOVERNMENT CENTER ZONE C (BANGKOK) THROUGH BANPU NEXT AND SP GROUP'S JV

**12,600 RT**

Chilled water  
management capacity <sup>(1)</sup>

**4Q24**

Expected full operation

**100%**

Construction progress  
(Oct'24)



### PROJECT UPDATES



## BANPU NEXT BRINGS NET ZERO SOLUTIONS EXPERTISE TO SUPPORT KOH SAMUI'S LOW-CARBON ENDEAVORS

- Signed an MoU with Koh Samui Municipality to conduct a feasibility study and develop a master plan to transition Koh Samui into a low-carbon destination.
- Aligns with Thailand's commitment towards carbon neutrality by 2050 and Net Zero by 2065.

### POTENTIAL BANPU NEXT SOLUTIONS



Renewable energy



Energy storage



E-mobility



GOVERNMENT CENTER ZONE C, DCS PROJECT



MOU Ceremony between Koh Samui Municipality and Banpu NEXT

# Energy technology: 3Q24 battery and e-mobility updates

## DP NEXT PRODUCTION PLANT (AMATA CITY, CHONBURI)

**1.0 GWh**

Production capacity

**4Q24**

Expected COD  
(First phase 200 MWh)

**92%**

Construction progress  
(Pending machine installation)

### PROJECT UPDATES

- Factory grand opening in November 2024 and SOP in December 2024.
- New battery order received from E-bus and E-truck assembly plants, which is currently in pilot testing phase.

## ESTABLISHMENT OF COMMERCIAL EV FLEET LEASING BUSINESS WITH POTENTIAL JAPANESE PARTNERS

**70%**

JV progress

**4Q24**

Expected commercial operation

## EV FLEET CHARGING STATIONS DEVELOPMENT WITH A SECURED CUSTOMER BASE DRIVEN BY MARKET & POLICY

**69%**

Construction progress

**4Q24**

Expected commercial operation





# Energy technology: 3Q24 investment updates

## Banpu NEXT invests in 'Amp Japan'

Amp Japan is the exclusive platform for AMP Energy that develops, acquires, constructs and operates renewable energy assets in Japan



>300 MW

Development and building track-record to date

~800 MW

Additional solar and wind energy pipeline

2 GW

Platform capacity target

PROJECT AMPJP

US\$145 M

Committed investment



Together with Asia-Pacific Sustainable & Decarbonization Infrastructure Equity, LP, a fund sponsored by Aravest and SMBC Group.

ENERGY TRANSITION PLATFORM





# Appendix

# ESG recognition



Prepared by SET, shortlists Thai companies with business and sustainability excellence

for SET-listed companies with market cap. between THB 30-100 bn



## Commended Sustainability Award

For outstanding sustainability practices, inclusive corporate governance, and dedication to minimizing negative impacts, while creating positive ones for society and the environment

## Outstanding Company Performance Award

For outstanding performance, good corporate governance and adherence to regulations of the SET

## Outstanding CEO Award

Presented to CEOs with moral values, visionary leadership, and a commitment to prioritizing sustainability practices

# Credit rating



A Strategic Partner of S&P Global

As a strategic partner of S&P Global, Tris Rating has over 20-years of experience as a leading credit rating agency in Thailand



SET awarded 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



5th  
consecutive year

The THSI, prepared by SET, shortlists Thai companies following the highest ESG standards

## A+

ratings with a '**stable**' outlook on the company, reflecting the company's stable cash flow, proven track record of strong operations and quality of power portfolio



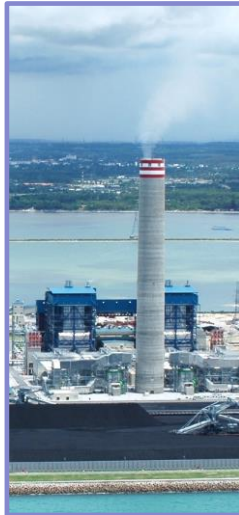
# Thermal Power: 3Q24 updates



## HPC

Operating smoothly as planned, with high EAF and net generation, resulting in increased profit sharing.

<b>93%</b>	EAF <sup>(1)</sup> (+22% YoY)
<b>THB 5.8 bn</b>	Revenue
<b>THB 3.4 bn</b>	EBITDA
<b>THB 0.8 bn</b>	share of profit



## BLCP

BLCP has achieved high EAF while managing operations without planned maintenance. Foreign exchange gains from the appreciation of THB contributed to increased profit sharing.

<b>99%</b>	EAF (-0.6% YoY)
<b>THB 4.7 bn</b>	Revenue
<b>THB 0.9 bn</b>	EBITDA
<b>THB 0.7 bn</b>	share of profit



## SLG

Reduced power sales due to lower demand from mild temperatures, and increased hydropower supply from heavy rainfall, resulted in decreased revenue and profit sharing.

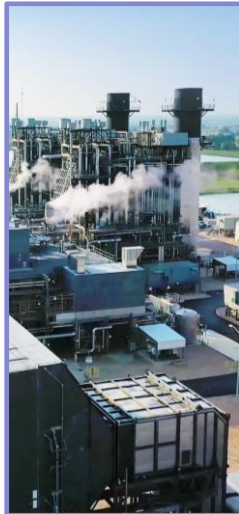
<b>1,413 GWh</b>	net power sold (-4% YoY)
<b>RMB 5 M</b>	share of profit



## China CHP

Profits improved following a reduction in coal prices, despite lower electricity sales from lower demand at Zouping and Zhengding.

<b>RMB 221 M</b>	Revenue
<b>RMB 30 M</b>	EBITDA
<b>RMB 4.2 M</b>	share of profit



## Temple I & II

Temple I & II received reduced net profits, from lower power sales and reduced spark spread due to mild weather conditions

<b>99%</b>	EAF (+0% YoY)
<b>2.4 GWh</b>	net generation
<b>US\$ 118 M</b>	Revenue
<b>US\$ 28 M</b>	share of profit <sup>(2)</sup>



## Nakoso IGCC

Nakoso operated under normal conditions.

<b>70%</b>	EAF
<b>581 GWh</b>	net generation
<b>THB 23 M</b>	share of profit

Note: : (1)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

(2) Includes US\$ 31 M of gain on derivatives

# Renewable Power: 3Q24 updates



## China Solar

Lower power sold due to grid curtailment and lower irradiation.

<b>15%</b>	avg. capacity factor
<b>58 GWh</b>	power sold (-6% YoY)
<b>RMB 40 M</b>	EBITDA
<b>RMB 14 M</b>	profit contribution



## Japan Solar

Lower power sold due to unfavorable weather conditions.

<b>14%</b>	avg. capacity factor
<b>64 GWh</b>	power sold (-7% YoY)
<b>JPY 0.8 bn</b>	cash distribution



## Australia Solar

Lower power sold due to curtailment and unfavorable weather conditions.

<b>13%</b>	avg. capacity factor
<b>34 GWh</b>	power sold (-30% YoY)
<b>(A\$ 13.5 M)</b>	share of loss <sup>(1)</sup>



## Vietnam Solar

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

<b>19%</b>	avg. capacity factor
<b>14 GWh</b>	power sold (-5% YoY)
<b>US\$ 0.4 M</b>	share of profit



## Vietnam Wind

### El Wind Mui Dinh

<b>21%</b>	avg. capacity factor
<b>17 GWh</b>	power sold (-22% YoY)
<b>US\$ 0.4 M</b>	share of profit

## Vietnam Wind

### Vin Chau project

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

Note: Banpu Power has 50% shareholding in Banpu NEXT

(1) Includes A\$ 1.3 M of loss on derivatives

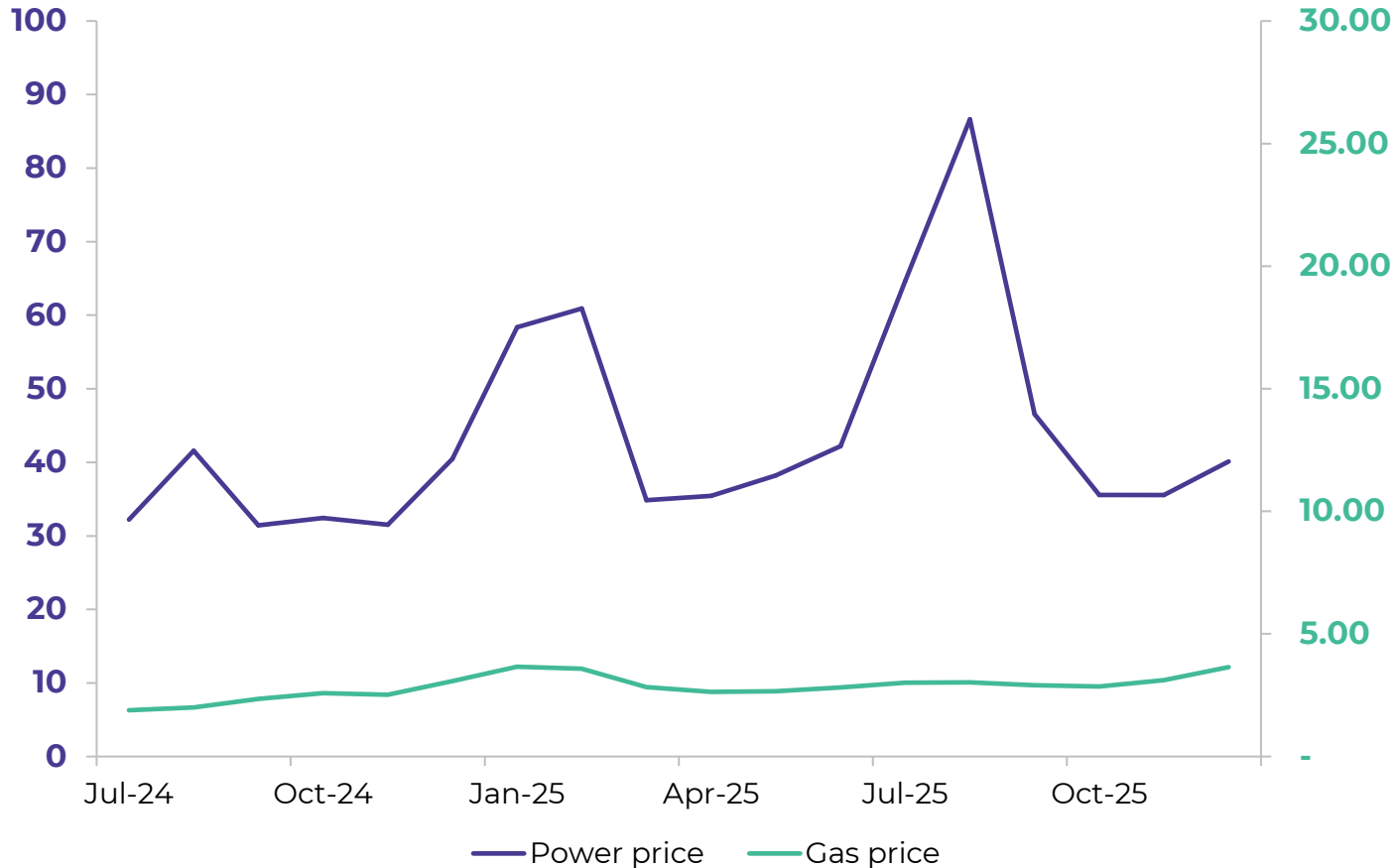


# US power outlook: potential upside from weather volatility

## Forecasted power and gas prices

Unit: US\$ / MWh

Unit: US\$ / Mmbtu



Source: EIA

## Key takeaways

- ➔ The EIA is forecasting that average wholesale electricity prices in ERCOT will rise to \$45/MWh in 1H25 up 12% from \$40/MWh in 1H24
- ➔ Henry hub spot prices are expected to average \$3.0 Mmbtu in 1H25 up from an average of \$2.3 Mmbtu in 1H24
- ➔ Forward power prices could experience sudden spikes due to abrupt transitions from El Niño to La Niña weather patterns, driving volatility in both summer and winter months

# Maintenance schedule for 2024

■ Major maintenance    ■ Minor maintenance

## POWER PLANT

### BLCP

- Unit 1 on minor inspection for 18 days (1-17 Jan 2024)
- Unit 2 on minor inspection for 17 days (15-31 Dec 2024)

### HPC

- Unit 1 on yearly maintenance for 22 days (21 Dec 2024 - 11 Jan 2025)
- Unit 2 on yearly maintenance for 22 days (3-24 Nov 2024)
- Unit 3 on extended major inspection for 55 days (24 Dec 2023 - 16 Feb 2024))

### NAKOSO IGCC

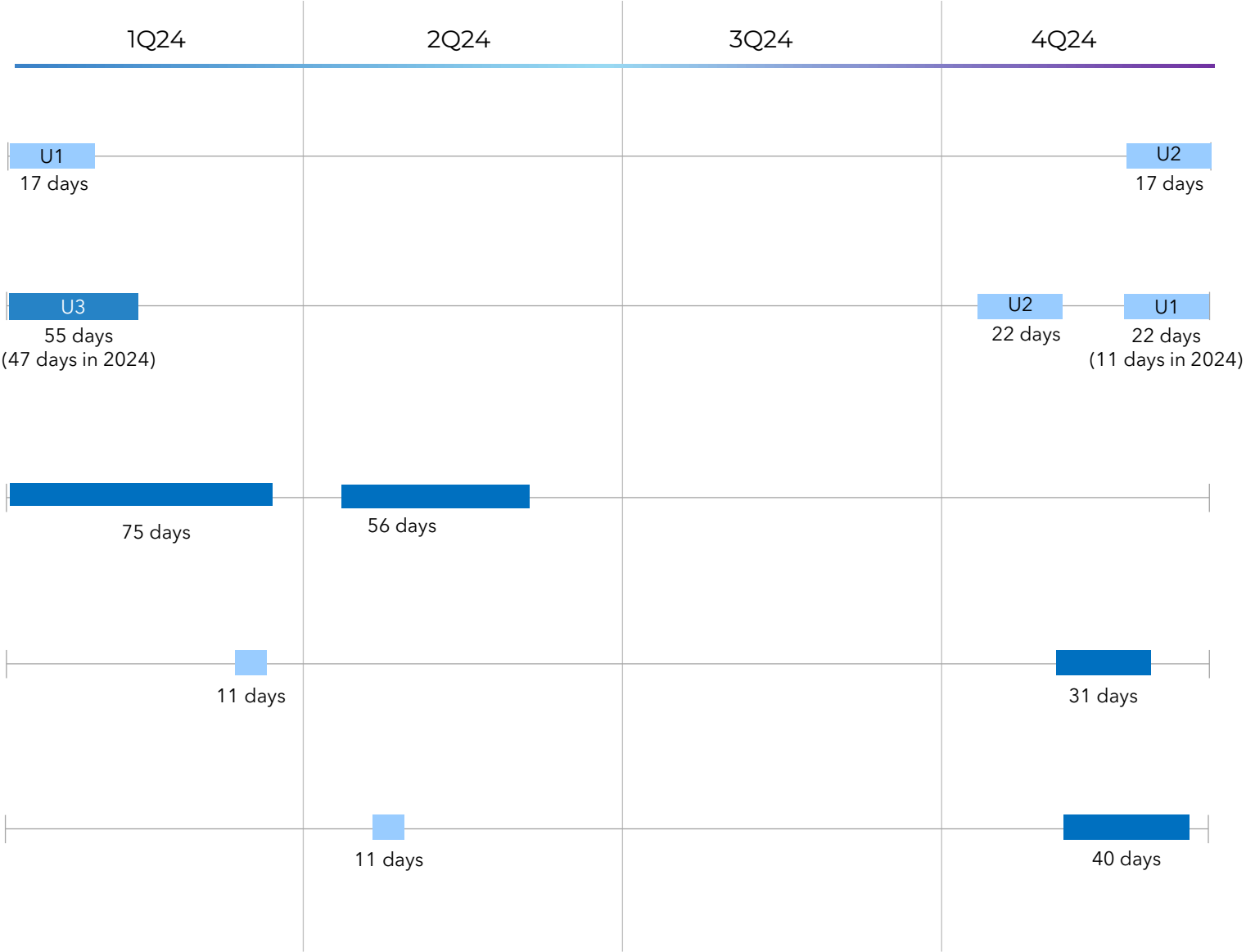
- Planned maintenance outage for 75 days (1-15 Mar 2004)
- Planned maintenance outage for 47 days (12 Apr -6 June 2024)

### TEMPLE I CCGT

- Spring outage for 11 days (8 - 18 Mar 2024)
- Fall outage for 31 days (5 Nov - 5 Dec 2024)

### TEMPLE II CCGT

- Spring outage for 11 days (30 Apr - 10 May 2024)
- Fall outage for 40 days (8 Nov - 17 Dec 2024)



# Maintenance schedule for 2024

■ Major maintenance    ■ Minor maintenance

## POWER PLANT

### SLG

- Unit 1 on c-class maintenance for 46 days (18 Apr – 2 June)
- Unit 2 on c-class maintenance for 21 days (Oct 1-21)

### CHP LUANNAN

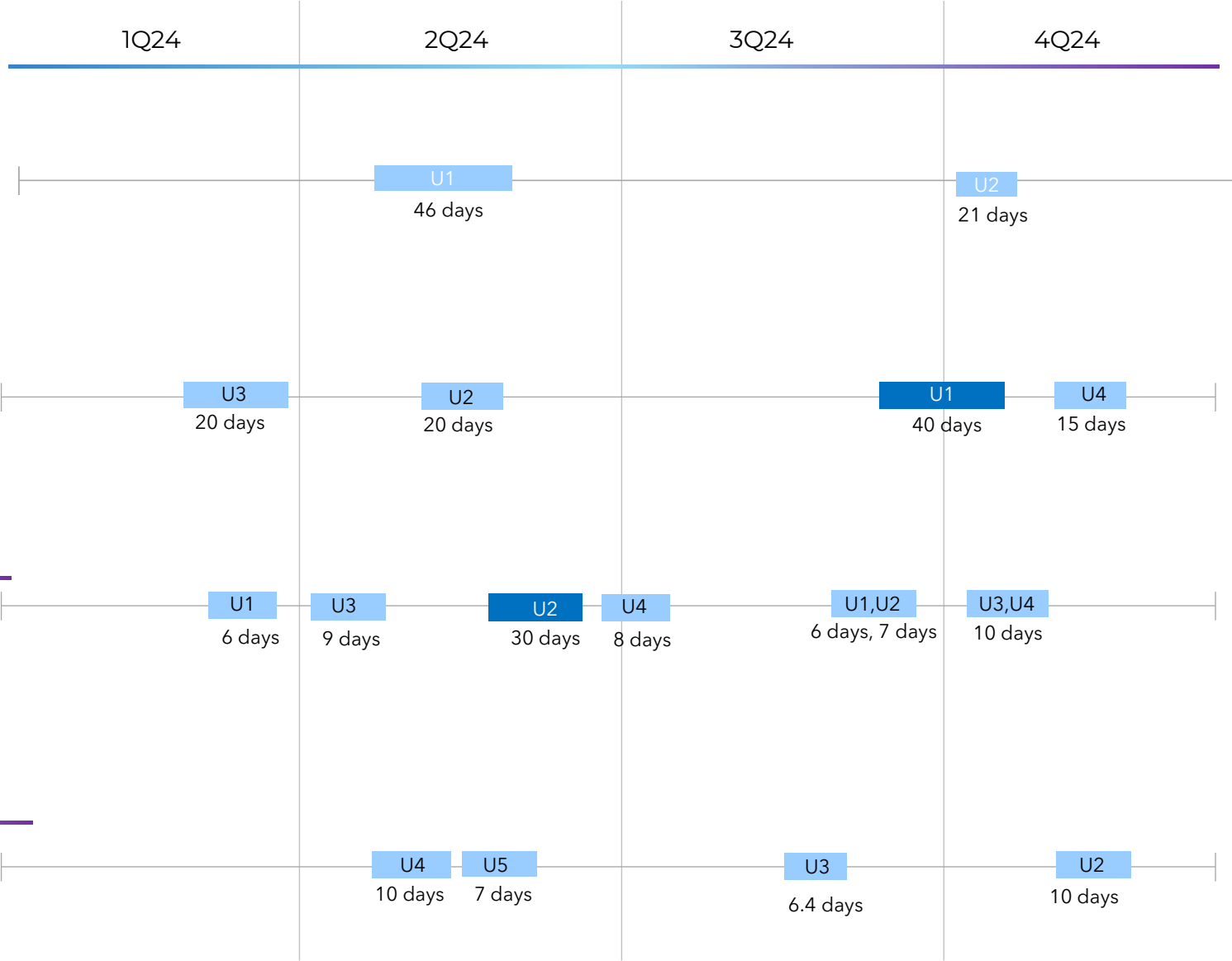
- Unit 3 on C-Class maintenance 20 days in 1Q
- Unit 2 on C-Class maintenance 20 days in 2Q
- Unit 1 on A-Class maintenance 40 days in 3Q-4Q
- Unit 4 on C-Class maintenance 15 days in 4Q

### CHP ZHENDING

- Unit 1 on D-class maintenance 6 days in 1Q, D-class maintenance 6 days in 3Q
- Unit 2 on A-Class maintenance 30 days in 2Q, D-class maintenance 7 days in 3Q
- Unit 3 on D-class maintenance 9 days in 2Q, C-class maintenance 10 days in 4Q
- Unit 4 on D-class maintenance 8 days in 2Q-3Q, 10 days in 4Q

### CHP ZOUPING

- Unit 4 on C-class maintenance for 10 days in 2Q
- Unit 5 on D-Class maintenance for 7 days in 2Q
- Unit 3 on D-Class maintenance for 6.4 days in 3Q
- Unit 2 on C-class maintenance for 10 days in 4Q



# Banpu Power: income statement

THB million	3Q24	2Q24	3Q23	QoQ%	YoY%
<b>Sales revenue</b>	<b>6,881.6</b>	<b>7,021.0</b>	<b>17,289.8</b>	-2%	-60%
Cost of sales	(6,263.0)	(6,213.8)	(9,241.3)		
<b>Gross Profit</b>	<b>618.6</b>	<b>807.2</b>	<b>8,048.5</b>	-23%	-92%
<i>GPM</i>	9%	11%	47%		
Administrative and selling expenses	(470.1)	(429.2)	(588.3)		
Equity income	1,412.3	1,466.8	537.3		
Other income	145.5	166.9	107.9		
Realized gains (loss) on Derivatives	115.9	39.1	(1,898.9)		
<b>EBIT</b>	<b>1,822.1</b>	<b>2,050.8</b>	<b>6,206.6</b>	-11%	-71%
Interest expenses	(747.4)	(777.1)	(729.8)		
Financial expenses	(7.0)	(6.7)	(1.6)		
Income tax & deferred tax (core business)	(5.8)	(67.6)	(720.3)		
NCI / Minorities (core business)	81.4	21.8	(2,552.0)		
<b>Net profit - Core business</b>	<b>1,143.3</b>	<b>1,221.3</b>	<b>2,202.9</b>	-6%	-48%
Non-recurring items	(25.8)	(7.7)	(4.0)		
Income tax & deferred tax (non-core business)	(165.3)	(36.4)	236.5		
NCI / Minorities (non-core business)	(1,038.3)	254.5	572.7		
Unrealized gain (loss) on Derivatives	2,076.6	(509.0)	(1,145.5)		
FX translation	(856.6)	59.0	236.1		
<b>Net Profit</b>	<b>1,134.0</b>	<b>981.7</b>	<b>2,098.7</b>	-16%	-46%



# Banpu Power: Sustainable Development Goals

## CLIMATE ACTION

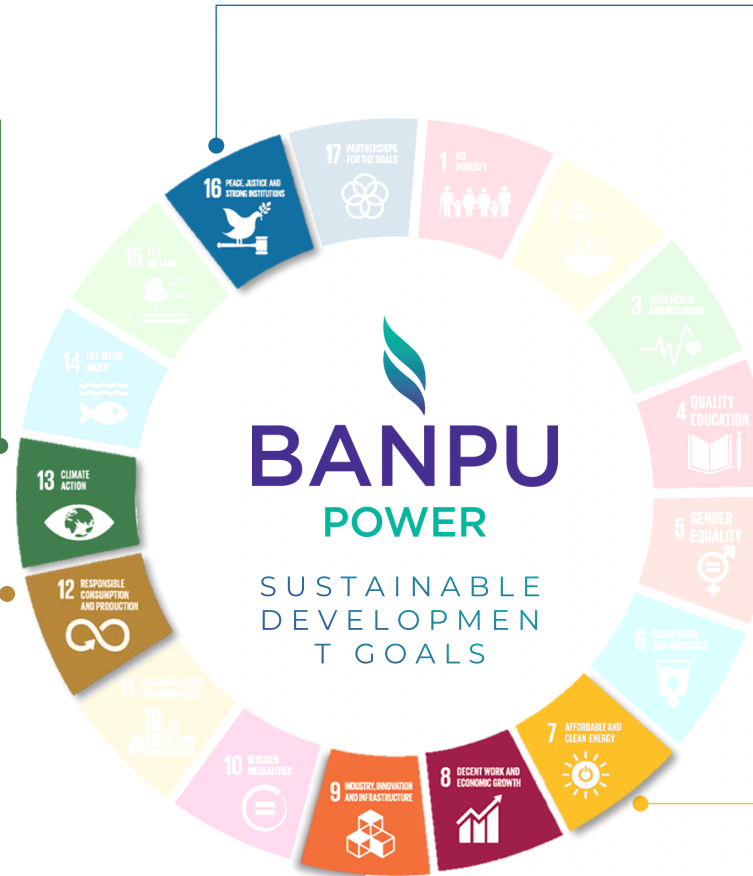
- ✓ GHG emissions intensity < 0.676 ton CO<sub>2</sub>e/MWh
- 🎯 Renewable energy generation capacity > 800 MWe
- 🎯 Disclose climate change information according to TCFD
- 🎯 Establish business continuity management system and conduct drill at all operating assets 100% coverage of critical business function conduct business continuity plan drill

## RESPONSIBLE CONSUMPTION AND PRODUCTION

- 🎯 Water consumption intensity Target: < 0.868 m<sup>3</sup>/MWh (Current: 0.958 m<sup>3</sup>/MWh)
- 🎯 Energy consumption intensity Target: < 1.55 GJ/MWh (Current: 2.3 GJ/MWh)
- ✓ 100% re-used/recycled of fly ash and bottom ash
- ✓ All operational control assets assessed for potential biodiversity impact

## INDUSTRY, INNOVATION AND INFRASTRUCTURE

- 🎯 Ultra-low emissions intensity
- ✓ No significant environmental and social incident
- ✓ No significant ESG complaint from communities
- ✓ All combined heat and power plant in China was certified ISO 14001.
- ✓ Cybersecurity and privacy maturity score > 2.5



## PEACE JUSTICE AND STRONG INSTITUTIONS

- ✓ Achieve zero incidents involving non-compliance, corporate governance and corruption
- ✓ 100% of significant corporate governance complaints resolved through a dispute mechanism
- ✓ Be a member of the Thai Private Sector Collective Action Against Corruption (CAC)

## AFFORDABLE AND CLEAN ENERGY

- 🎯 Power gen. capacity Target: 5,300 MW | Current: 3,534 MWe
- ✓ Availability Factor (AF) > 90%
- ✓ Forced Outage Factor (FOF) < 5%
- 🎯 Key ESG issues are part of senior management's KPI

## DECENT WORK AND ECONOMIC GROWTH

- ✓ No major incident and occupational illness in employees and contractors
- 🎯 Employee Engagement score: [TH] Target: >70% (Current: 57%) [CH] Target: >85% (Current: 91%)
- ✓ Banpu Heart Score: > 70% in TH and >90% in CH
- ✓ No significant human rights complaints
- ✓ No complaint about customer privacy and product use

Achieved
 Goal / Target

