Asia-Pacific Utilities

Balancing a need for growth with the challenge of transition

January 14, 2025

This report does not constitute a rating action.

What's changed?

Economic outlook. South and Southeast Asian (SSEA) countries will remain Asia-Pacific's growth engine.

Interest rates. Slow pace of rate cuts may add to the burden of renewable operators.

Execution risks. Grid and storage facilities will be a bottleneck holding back energy transition.

What are the key assumptions for 2025?

Power demand to maintain growth in the mid-single digits. Power demand growth in China is slightly higher than GDP given the structural shift of consumption to the service sector. Power demand in other Asia-Pacific markets will largely follow the rate of economic recovery.

Profitability facing challenges. Debt-funded capital expenditure (capex) for renewables expansion will stay high and add to Asia-Pacific power operators' debt burden. On-grid tariffs for renewables are falling in many markets given more marketized trading mechanism and cost cuts.

Governments continue to support energy transition. Asia-Pacific countries are moving toward their climate targets, backed by supportive policies.

What are the key risks around the baseline?

Grid stability. Higher intake of renewables may affect grid stability. Utilization and operating efficiency will be affected. In China, we expect power curtailment to rise for renewables.

Technology breakthrough. Power transmission and storage facilities are bottlenecks for renewable expansion in the prevailing power systems in Asia-Pacific.

Fuel cost. Fuel cost may fluctuate unexpectedly on rising geopolitical conflicts, leading to earning volatilities for gas and coal-power suppliers.

Contacts

Apple Li
Hong Kong
+852 2533 3512
apple.li
@spglobal.com

Parvathy Iyer
Melbourne
+61 3 9631 2034
parvathy.iyer
@spglobal.com

Cheng Jia Ong
Singapore
+65 6239 6302
chengjia.ong
@spglobal.com

Mary Anne Low
Singapore
+65 6239 6378
mary.anne.low
@spglobal.com

Ryohei Yoshida
Tokyo
+81 3 4550 8660
ryohei.yoshida
@spglobal.com

Jeremy Kim
Hong Kong
+852 2532 8096
jeremy.kim
@spglobal.com

Ratings Trends: Asia-Pacific Utilities

Chart 1

Ratings distribution

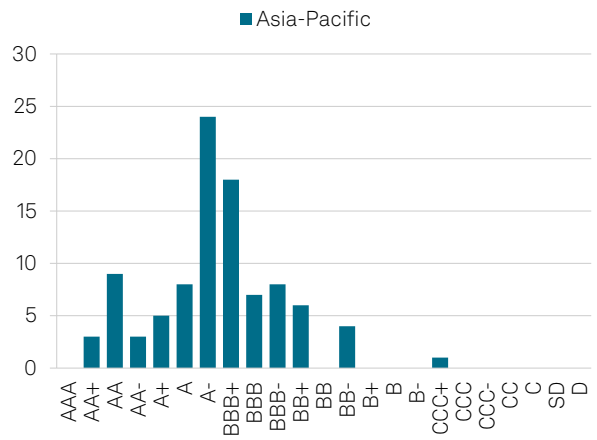


Chart 2

Ratings distribution by region

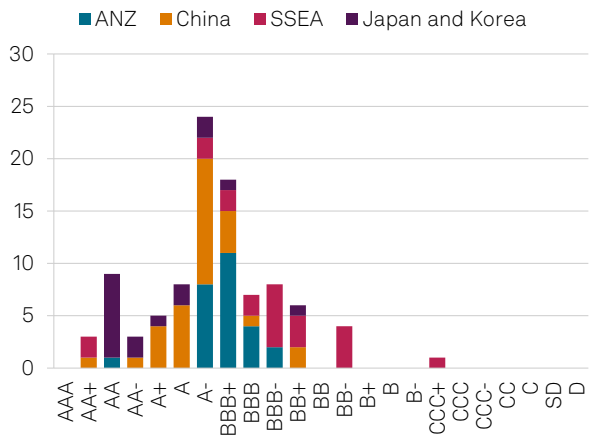


Chart 3

Ratings outlooks

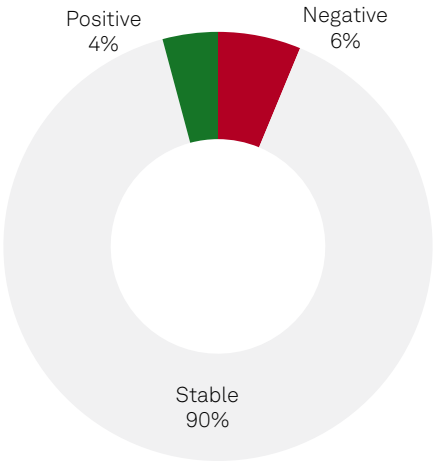


Chart 4

Ratings outlooks by region

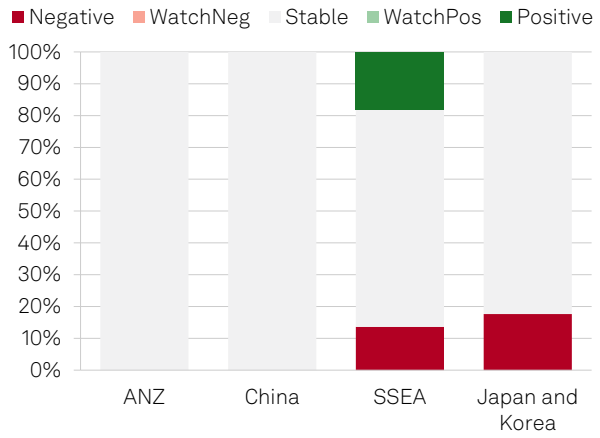


Chart 5

Ratings outlook net bias

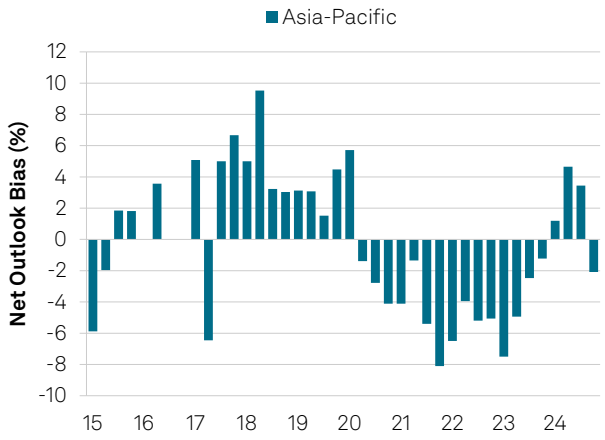
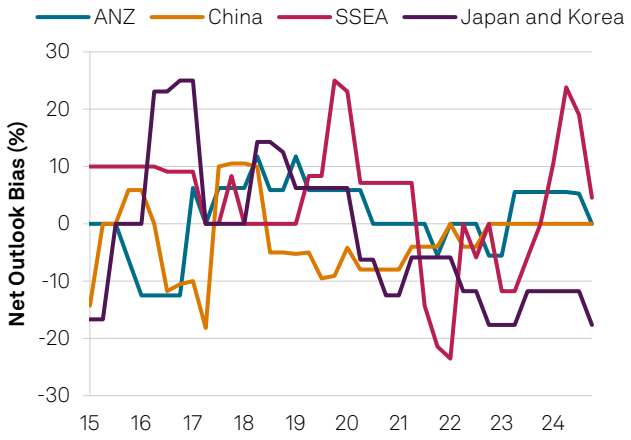


Chart 6

Ratings net outlook bias by region



Source: S&P Global Ratings.

Ratings data measured at quarter-end. ANZ—Australia and New Zealand. SSEA—South and Southeast Asia.

Industry Credit Metrics: Asia-Pacific Utilities

Chart 7

Debt / EBITDA (median, adjusted)

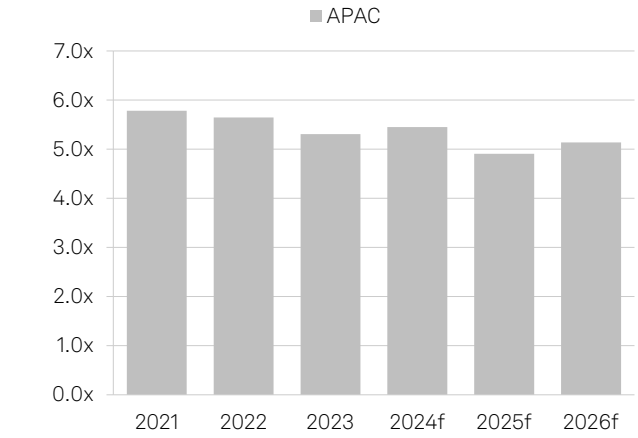


Chart 8

FFO / Debt (median, adjusted)

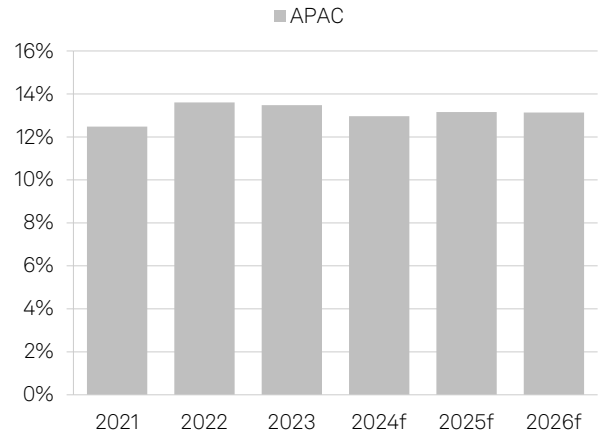


Chart 9

Cash flow and primary uses

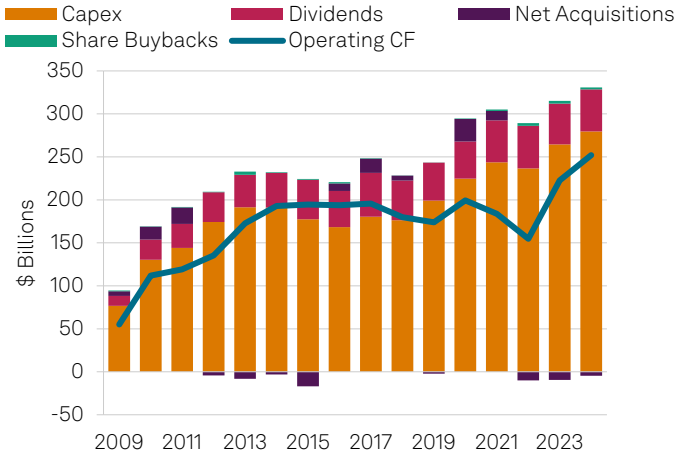
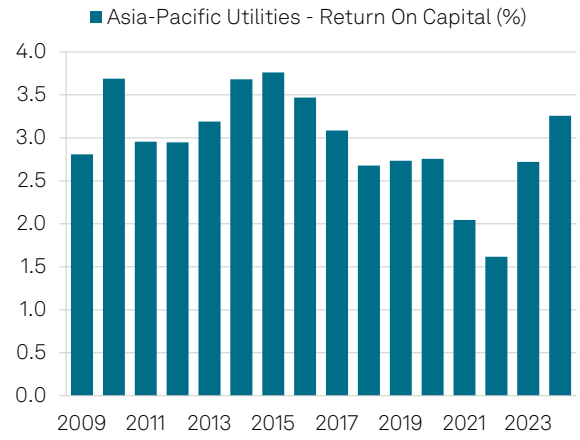


Chart 10

Return on capital employed



Source: S&P Global Ratings, S&P Capital IQ.
Revenue growth shows local currency growth weighted by prior-year common-currency revenue share. All other figures are converted into U.S. dollars using historic exchange rates. Forecasts are converted at the last financial year-end spot rate. FFO—Funds from operations. Most recent (2024) figures for cash flow and primary uses and return on capital employed use the last 12 months' data.

Industry Outlook: Australia and New Zealand

Ratings trends and outlook

We forecast stable credit metrics and outlook. This is supported by the adequate rating headroom of most rated entities. Regulated utilities are benefiting from high inflation-linked revenues, but higher costs will squeeze margins. Demand for electricity and gas remains flat; this trend is captured in regulatory determinations. Large transmission projects are underway, and we expect regulation and owners to remain supportive. Unregulated players in New Zealand will benefit from prudent policies on shareholder distributions during the building phase.

Main assumptions about 2025 and beyond

1. Companies will likely operate within their regulatory parameters.

Inflation-linked pricing will flow to revenues. Minimal benefit to margins due to higher costs for labor, contracts, and procurement. Stable interest rates for now in Australia and falling rates in New Zealand will ease pressure on interest costs. Softer gas demand or new connections could limit upside to gas distributors.

2. Elevated capex for regulated and unregulated operators.

Network reliability concerns with slow growth in electricity volumes due to energy transition, and new transmission projects will push up capex. This is captured in regulatory settings. The pipeline of renewable projects will increase capex for integrated merchant power. Lower shareholder distributions, or equity infusions in some cases, will support balance sheets.

3. More volatility in electricity prices due to climate effects and rising renewables.

We forecast average electricity prices will stay high, based on normal hydrology and stable demand. Downside risks include extreme hydrology or heat, rising gas prices, and strong retail competition.

Credit metrics and financial policy

In our view, the financial policies of rated entities boost credit quality. The financial metrics of the rated portfolio have reasonable headroom, which gives leeway for any unexpected variation in operating parameters. Most rated entities operate according to financial policy targets that can range from target ratios of funds from operations (FFO) to debt, risk limits, interest rate hedging, and refinancing ahead of debt maturities. All rated entities have flexibility in dividend distributions and, to some extent, for capex.

Key risks or opportunities around the baseline

1. High investment in regulated networks will increase the regulated asset base, and returns.

Higher capex and inflation will assist growth in asset bases and earnings. While there is opportunity to grow contracted (unregulated) connections for new renewable projects, these are likely to remain small.

2. Australian unregulated utilities: renewable power investments present mixed outcomes.

Construction costs, approvals, network connections, and contract arrangements will present risks to the timely execution of projects.

3. Merchant utilities in New Zealand will grow by establishing new projects.

The pipeline of projects across rated entities will increase demand for labor, materials, skilled contractors, and funding.

Cost escalation or poor project management can create risks for regulated utilities. This is particularly so for large new transmission projects given fixed-price contracts are no longer the norm. Risk can arise due to poor contractor performance, weather delays, difficult labor management or unfavorable outcomes from risk-sharing arrangements. Regulatory reopeners can reduce this risk, but this may take time and may not fully compensate for inefficiencies. We expect simple network-related projects to be managed within the regulatory allowances**.**

Rapid growth in renewable power will require large investments to connect them to the grid. Most of these are likely to be contracted or unregulated, and to be debt funded. We expect phased growth; however, a rapid increase in unregulated investments by regulated utilities could dilute our assessment of the business risk.

Australian unregulated utilities: Renewable power investments present mixed outcomes. Construction costs, approvals, network connections, and contract arrangements will involve steady variables and be a risk to project deliveries. Planned investments for generation and transmission are substantial, spurred by the target to reduce emissions by 43% by 2030.

Stability and reliability issues, as well as the uncertain visibility on the rollout of renewable capacity, are extending the lifecycles of some coal plants. Volatile pool prices, plant availability, and construction costs remain the biggest risk to the unregulated sector over the next one to two years.

Merchant utilities in New Zealand are investing in several new "green" projects. Cost management and execution remain key risks due to a shortage of contractors and the long lead times for equipment supply. While several large and small projects have been completed recently with no—or limited—risk to credit quality, few have seen cost escalations or delays due to weather, supply, or design changes.

Industry Credit Metrics: Australia and New Zealand

Chart 11

Debt / EBITDA (median, adjusted)

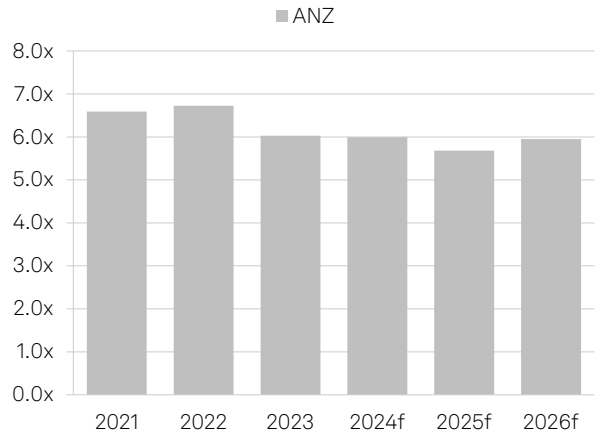


Chart 12

FFO / Debt (median, adjusted)

Chart 13

Cash flow and primary uses

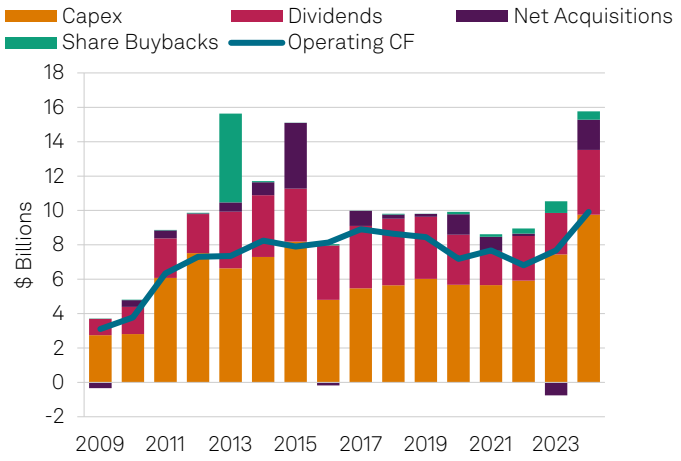
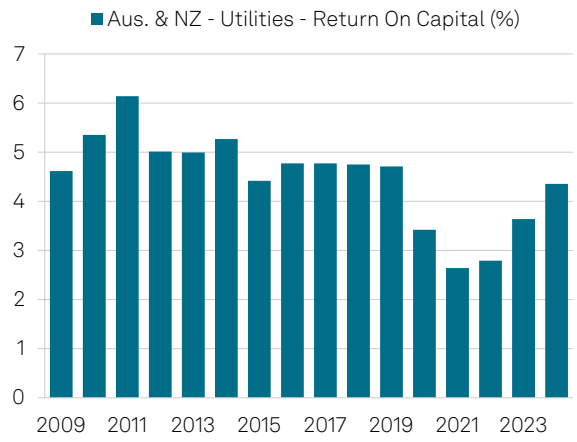


Chart 14

Return on capital employed



Source: S&P Global Ratings, S&P Capital IQ.
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Industry Outlook: Mainland China and Hong Kong

Ratings trends and outlook

Our stable outlook for the sector is underpinned by the continued government support in promoting clean energy usage and low interest rate environment in mainland China. Moderating fuel prices and a ramping-up of newly installed renewable capacities will support earnings growth for the independent power producers (IPPs). Tempering the financial improvement is a trend for diminished tariffs for renewable producers, and still elevated debt-funded capex over the next one-two years.

Main assumptions about 2025 and beyond

1. A breakthrough year for energy transition.

Renewable energy capacity achieved 1,250GW by September 2024, outpacing the 1,200GW target set for 2030. IPPs will continue to expand capacity but in a more selective way.

2. Deepening power market reforms to weigh on the profitability of the renewable sector.

Mainland China will further deregulate power generation by pushing all renewables into market-based trading in 2026-2029, earlier than the original guided 2030. On-grid tariffs will soften, particularly for renewable power sold through market-based contracts.

3. Deceleration of gas consumption growth reflects substitution risk and property downturn.

Government decarbonization measures and slowing GDP growth will weigh on gas demand. Income from new connection fees will continue to shrink amid the slowdown in the property sector. Gas distributors will count on dollar margin expansion and business diversification to sustain profitability.

A breakthrough in energy transition. Mainland China added 200GW of wind and solar in the first nine months of 2024. The cumulative capacity of non-hydro renewables has reached 1,250GW, handily beating a government target to create 1,200GW of such capacity by 2030. Including hydro, renewable capacity accounted for 54.7% of total power capacity, and generated 35.5% of total power in the first three quarters. We expect annual addition of non-hydro renewables to stay at about 200GW over the next one-two years.

We also expect IPPs will be more selective in project development. Priorities will be given to those in areas with more favorable local power trading policies and better demand. This is to ensure a project's rate of return meets internal requirements amid declining tariffs and potential power curtailment stemming from oversupply in certain regions.

Power market reforms to weigh on the profitability of the renewable sector. Mainland China's power market reforms advanced in December 2024, when the government outlined a three-step roadmap for establishing a national unified power market by 2029. All renewables will be traded under the marketized scheme by 2029, one year earlier than the original guidance. IPPs will face more challenges in sustaining their profitability in the near-term amid reduced guarantees on dispatching volume and declining average tariffs. The national mechanism will facilitate a fluctuation in power prices within a range, such that the price reflects real supply and demand dynamics. These measures should lead to cheaper green power, encouraging wider use.

A higher percentage of market-based trading volume will increase volatility in both pricing and operation risks for IPPs in near term. In 2023, 61.4% of national power was sold through market-

based trading mechanisms, a fivefold increase from 2016. About 47.3% of power generated from renewables was sold through market-based trading; that level will likely exceed 50% by 2025. Average on-grid tariffs will continue to trend down for both coal-power and renewables over the next three-five years. The financial impact on renewables may be greater because coal-power projects are compensated for drops in utilization hours with capacity tariffs. Such compensation is absent for renewables.

Decelerating growth in gas consumption points to substitution risk and a slowing economy. We expect gas volume growth will moderate over the coming five-six years as the central government slowly deprioritizes natural gas usage in meeting its energy security and emission-cutting goals. A slowdown in GDP growth to 4.1% in 2025 and 3.8% in 2026 under U.S. trade tariffs and a persistent property downturn could also pressure gas demand in manufacturing sectors. New connections will continue to decline against the backdrop of a weak housing market. Gas distributors' average dollar margin may expand slightly, supported by a 2%-3% annual decline in gas costs following drops in the Brent crude benchmark. The rising gas storage capacity will partly mitigate supply and price risks. Gas distributors are laying the groundwork for new sources of growth including sales of gas appliances and services, transitioning into integrated energy, and pushing into renewables.

Credit metrics and financial policy

We expect credit metrics to be stable for mainland Chinese IPPs over 2025-2026. Their average ratio of FFO to debt will remain at about 9%. The improvement in profitability from lowered fuel costs and the ramping up of renewables will be partly offset by declining average tariffs and increased capex (largely debt funded).

The credit metrics of mainland China gas distributors will modestly improve over 2025-2026. Their average ratio of FFO to debt will likely increase to 24% in 2025 from 22% in 2023, while gas sales volume continues to grow, albeit at a lower rate, with some mild improvements in dollar margins. We expect capex levels of gas distributors to be broadly stable over the next few years.

Key risks or opportunities around the baseline

1. Curtailment on renewable output could be a structural issue.

The curtailment rates may keep rising in mainland China's power sector, depressing utilization rates and margins for renewables operators.

2. Grid infrastructure and energy storage to catch up.

Investment in grid infrastructure and energy storage will accelerate to equip the power system for further structural changes.

3. Geopolitical uncertainties may drive up fuel costs and depress power demand.

Natural gas distributors may face more volatility given likely geopolitical tensions and swings in the price of liquified natural gas (LNG). Rising complications in doing international trade may depress power demand from the industrial sector.

Curtailment of renewable output could be a structural issue. Massive renewable capacity may magnify oversupply issues during certain times of a day given the inevitable mismatch between the supply of natural energy sources and power demand, particularly without storage facilities and smart distribution systems. As such, power curtailment rates may increase under the prevailing system. The power grid operators are allowed to loosen the renewable power

dispatching rate to 90% from 95%, implying the power curtailment rate for wind and solar projects may double from 5% to 10%.

This will translate into lower capacity utilization and even temporarily negative spot-market tariffs under market-based trading, particularly for solar projects. Participation in inter-regional market-based trading may be a way out for renewables when local grid dispatching is not assured and energy storage is insufficient.

Grid infrastructure and energy storage to catch up. Over the past decades, power grid operators have been building ultra-high voltage (UHV) transmission lines to connect areas with abundant renewable resources to those with greater energy demand, although the development pace of grids mismatches that for renewables—wind and solar capacity almost doubled over 2020-2023, while interprovincial transmission capacity only expanded by 15%. More investment into grid networks is likely, ensuring the stability and reliability of power supply as renewables gradually increase their share of power generation.

Entities will also be investing heavily in energy storage. In the first nine months of 2024, the capacity of new-energy storage projects reached 58.5GW, an increase of 86% from end-2023. Mainland China is targeting 100GW of battery storage capacity by 2030, which has the advantage of high capacity, long life cycles, lower cost, and fast response times.

Industry Credit Metrics: Mainland China and Hong Kong

Chart 15

Debt / EBITDA (median, adjusted)

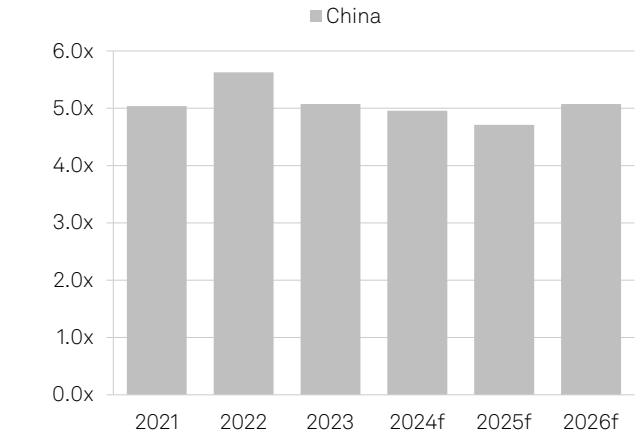


Chart 16

FFO / Debt (median, adjusted)

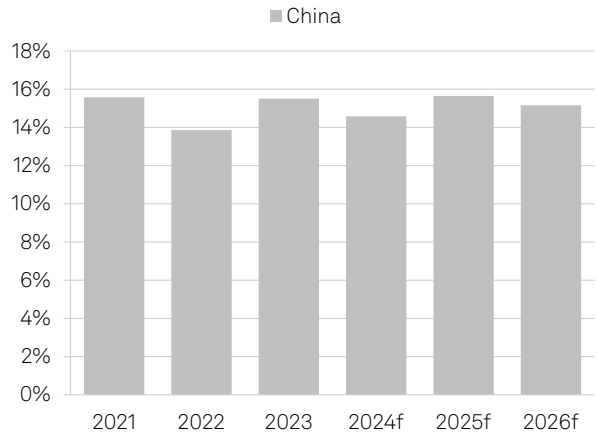


Chart 17

Cash flow and primary uses

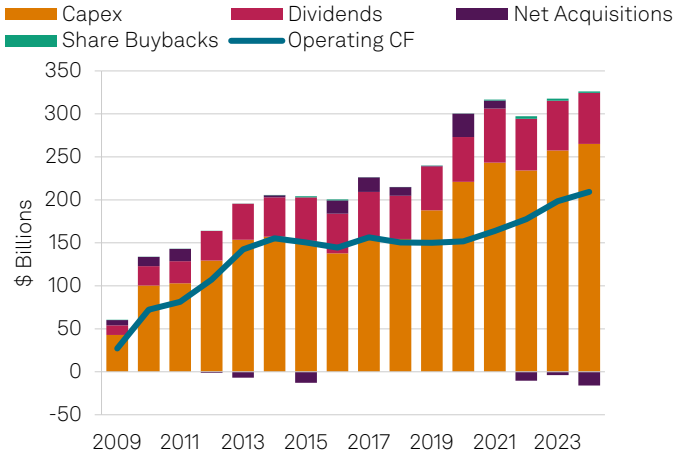
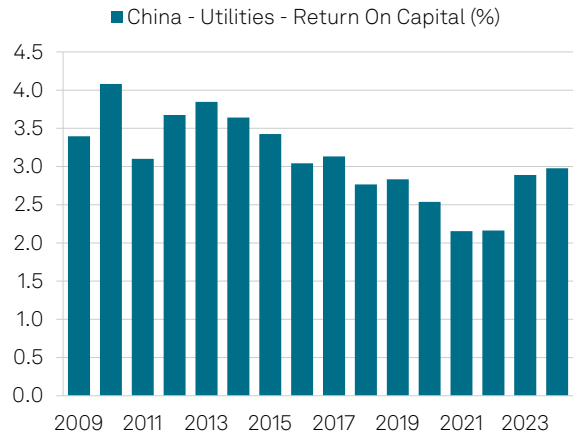


Chart 18

Return on capital employed



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Industry Outlook: South and Southeast Asia

Ratings trends and outlook

We have a largely stable outlook for the sector, supported by increased headroom for most rated entities. This is following several positive rating actions during 2024 across some entities in India, Malaysia, and the Philippines. A positive outlook on the Indian sovereign is also driving improving rating trends. Solid operating performance and continuing regulatory support underpins cash flow predictability. Regulated utilities continue to benefit from supportive regulations, with a long record of being able to pass though full costs when needed, to alleviate periods of volatility, either through tariffs or subsidies. Rated IPPs continue to be able to pass through fuel costs under existing contracts. Leverage remains high, but under control, as rising operating cash flow offsets increasing capex, as the sector navigates energy transition.

Main assumptions about 2025 and beyond

1. Healthy economic growth to support power demand.

Relatively healthy GDP growth in South and Southeast Asian economies will drive power demand. We project around 4%-7% growth in annual power demand in fast-growing emerging economies such as India, Indonesia, the Philippines, and Malaysia. Singapore and Thailand will experience increased power demand of 2%-3% annually.

2. Increasing capex supported by higher earnings keeping leverage stable.

Rising demand and new capacity, in addition to stable returns, support the profitability of utilities. Continuing investments in renewable energy, and fossil fuel power plants as baseload power for energy security will keep capex and leverage high for rated utilities in South and Southeast Asia. Capex for utilities in India should significantly increase over the next two to three years. This is largely on account of investment in renewable assets to meet the country's targets for renewable energy and in building out transmission networks to support additional capacities. Capex for rated Indian utilities over the next couple of years will likely be 50%-100% higher than that of fiscal 2024 (year ending March).

3. Supportive regulatory frameworks to continue.

We expect the supportive regulatory frameworks in Malaysia and Singapore to continue in the next regulatory tariff reset periods of January-April 2025, without any material adverse regulatory changes. India has reset the tariff framework without any material changes until 2029. Indian utilities are investing heavily in renewable assets and transmission assets (under competitive bidding) that do not benefit from a regulated return. But these assets will not comprise a meaningful part of the total assets over the next three to five years.

Malaysia and the Philippines continue to demonstrate a long record of consistently passing through costs when needed to alleviate periods of volatility. This is despite a six-month lag following the Malaysia government's approval and ongoing delays in the Philippine regulatory tariff reset for regulated utilities.

Thailand's electricity regulatory framework remains broadly supportive, albeit with delays in the recovery of accrued revenue from electric energy sales according to the automatic tariff adjustment. These delays are due to the government's tariff caps. In our view, Thai regulations are similar to those in Malaysia, where the utilities are exposed to sociopolitical considerations, as the government may delay tariff hikes, particularly the fuel cost pass through component.

Credit metrics and financial policy

Leverage generally remains high, with the ratio of debt to EBITDA at about 4x-5x for utilities in growing markets such as India and Indonesia, because capex is growing fast. Nonetheless, leverage has improved from 5x-6x levels over the past few years. Growth in power demand and improving profits support higher spending and stable credit quality. Power majors in mature and fully electrified markets such as Singapore and Peninsular Malaysia will continue to operate around 2x-4x debt-to-EBITDA. Many of the rated utilities in the region are government-related entities with a record of high dividend payments. We believe this will continue to result in negative discretionary cash flow, especially given the large capex. However, these companies and governments have shown a willingness to lower dividends in times of stress, such as during the pandemic.

Key risks or opportunities around the baseline

1. Implementation risks with higher capex and new business/geographic areas.

Several utilities across South and Southeast Asia are investing heavily in renewable energy. Further, many Southeast Asian utilities are making these investments in markets outside their home market. While the companies have good records in project implementation, execution ability in new resources and geographies, as well as regulations, presents risks.

2. Renewable players: Transition from plain-vanilla projects to hybrid and storage-based projects.

Cost management and execution are key risks for larger and more complex round-the clock and pumped storage hydropower projects. India-based players are increasingly active in this space, and we expect experienced players with good access to funding to take on such projects.

3. Rise in corporate purchase power agreements (PPAs) could mean better counterparty credit quality and payment record despite shorter contracts.

These benefits, including the diversity in offtakers, could outweigh the shorter corporate PPA contracts as compared with typical long-term fixed-tariff contracts with government-owned utilities. Key risks to this strategy are renewal risk of contracts and the uncertainty of cash flows at time of renewal due to exposure to volatile merchant power markets if the contracts are not renewed.

Implementation risks with higher capex and new business/geographic areas. Rated Indian utilities are investing heavily in renewables. For companies such as NTPC Ltd., renewable assets could account for about 40% of total capacity by 2032 from less than 5% currently. Apart from execution risk, the profitability of new projects will be a key watchpoint, given the absence of regulated returns in the renewables business. Southeast Asian utilities have also been actively investing in renewable assets overseas. These also present risks compared to the utilities' domestic markets if the regulatory systems are weaker, macroeconomic conditions are more volatile, and currency or geopolitical risks are greater. To manage such variables, most companies will invest in a phased manner, and likely in partnership with local players.

Transmission capacity roll-out and spending is also increasing significantly in the region as major power producers are focusing on renewables. A high demand for transmission equipment and components has led to a surge in transmission costs, increasing spending for developers. Power producers are also facing execution delays for pipeline projects due to delayed delivery in transmission components. In India, we expect transmission capacity constraints in key renewable states such as Gujarat and Karnataka over the next three years. Transmission spending will need

to pick up in the country to accommodate renewables expansion. That said, there are currently no curtailment issues for existing power projects in India and most of Southeast Asia. We expect regulated transmission utilities to be able to fully recover all costs with adequate returns as they invest in the transmission networks to cater to rapid demand growth.

Renewable players: Transition from plain-vanilla projects to hybrid and storage-based projects. Cost management and execution are key risks for larger and more complex renewable projects. This includes round-the clock and pumped storage hydropower projects, which are more common in India's maturing renewables space. Such projects have longer gestation periods and carry higher execution risks and capital costs. Despite the risks, returns can be higher due to less competition for bids. Other countries are also venturing into hybrids and storage-based projects, though mainly in developing solar-battery storage projects.

Rise in corporate PPAs could mean better counterparty credit quality and payment record despite shorter contracts. These benefits, including the diversity in offtakers, could outweigh the shorter contract tenors of typically between five and 10 years as compared with the typical 20-25 year fixed-tariff contracts with government-owned utilities. In India, renewables players are increasingly signing up with commercial and industrial (C&I) customers, not just state discoms with the typical long-term PPAs. Continuum Green Energy Holdings Ltd.'s differentiated focus on the C&I segment in India's power sector will continue to support its competitive position and receivables. Vena Energy, an IPP of renewable energy across Asia-Pacific, signed with C&I customers such as Amazon in Australia.

Key risks to this strategy are renewal risk of contracts and the uncertainty of cash flow at time of renewal due to exposure to volatile merchant power markets if the contracts are not renewed.

Industry Credit Metrics: South and South-East Asia

Chart 19

Debt / EBITDA (median, adjusted)

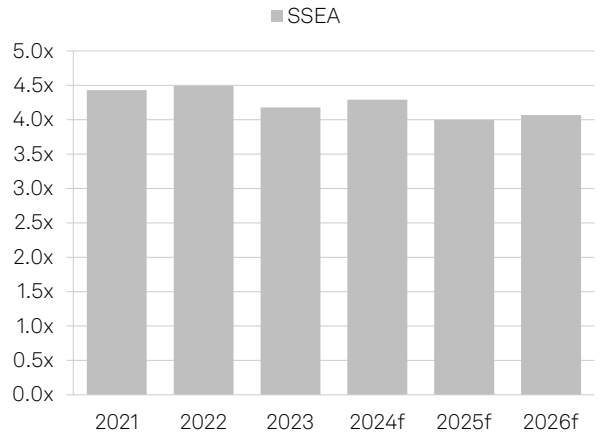


Chart 20

FFO / Debt (median, adjusted)

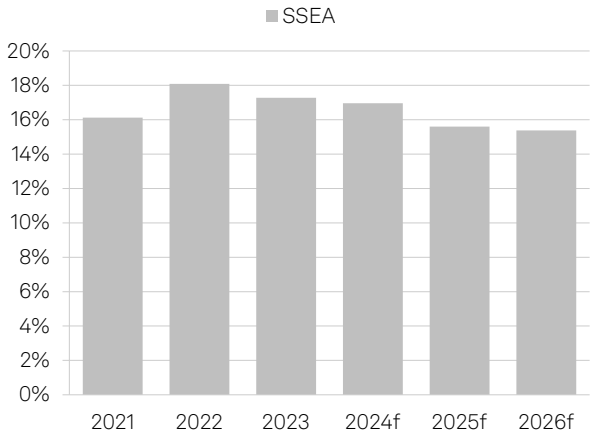


Chart 21

Cash flow and primary uses

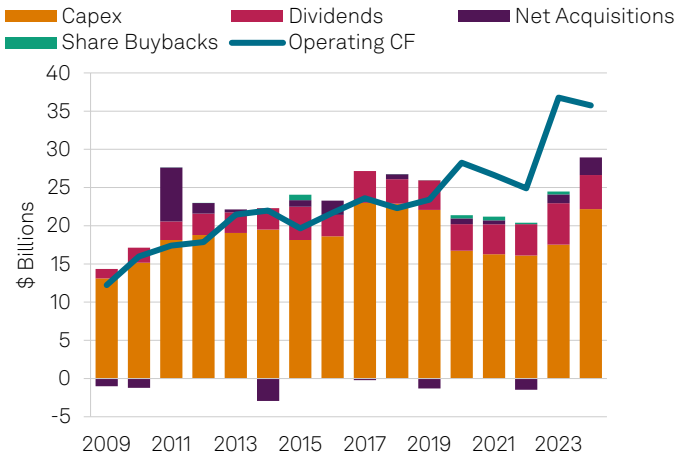
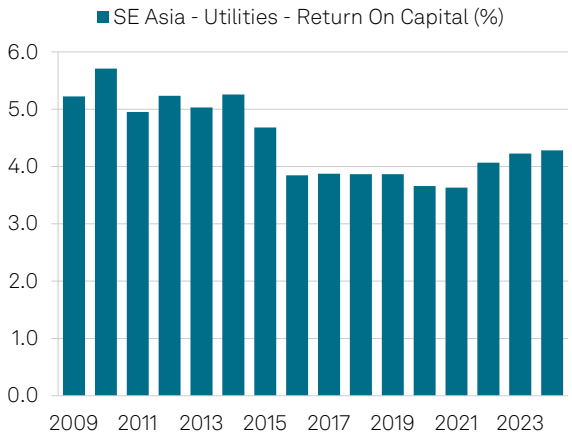


Chart 22

Return on capital employed



Source: S&P Global Ratings, S&P Capital IQ.
Revenue growth shows local currency growth weighted by prior-year common-currency revenue share. All other figures are converted into U.S. dollars using historic exchange rates. Forecasts are converted at the last financial year-end spot rate. FFO—Funds from operations. Most recent (2024) figures for cash flow and primary uses and return on capital employed use the last 12 months' data.

Industry Outlook: Japan and Korea

Ratings trends and outlook

In Japan, the outlook is stable for the regulated electric utilities sector but negative for the gas utilities sector. For the regulated electric power companies, multiple factors continue to support creditworthiness such as strong positions in respective supply regions, favorable regulatory frameworks, transparent pricing systems, and the possibility of extraordinary support from the Japanese government in times of need. On the other hand, for gas companies, the rising weight of its portfolio in unregulated businesses has been increasing pressure on creditworthiness.

In South Korea, the outlook is stable on utilities companies. Korea Electric Power Corp. (Kepco) and Korea Gas Corp. (Kogas) are government-related entities with an almost certain likelihood of support in times of financial distress. The ratings and outlooks are equalized with those on the South Korean government.

Main assumptions about 2025 and beyond

1. Expectations for Japanese electric utilities over the next 12 months:

Stabilizing operating performance eases a huge investment burden.

2. Expectations for South Korean utilities over the next 12 months:

Earnings and operating cash flow continue to gradually recover into 2025, but the leverage burden for Kepco and Kogas to stay elevated.

Japanese regulated electric utilities: Performance will remain firm, backed by higher rates for their end customers implemented in mid-2023, stable demand backed by a resilient domestic economy, and increased utilization of nuclear power plants. Debt growth will be mild due to stable cash flow generation, despite aggressive investments in areas including decarbonization.

South Korean utilities: We believe earnings and operating cash flow of South Korean utilities will be steady in 2025. After weak operating results and an accompanying increase in debt over 2021-2022, earnings began to recover starting in mid-year in 2023 with stabilizing raw material costs and some tariff increases.

Leverage burdens will remain elevated over next 12-24 months. For both Kepco and Kogas, the adjusted debt increased sharply over 2021-2023, and further deleveraging, if any, will likely be gradual. Also, risks remain around the limited visibility on future tariff hikes, and potential upswing in raw material prices.

Credit metrics and financial policy

Key cash flow measures for Japanese electric and gas utilities will be stable for the next two years, supported by solid performances, despite continued high debt burden. Their FFO-to-debt ratios will remain at around 10% for most of the regulated electric utilities and slightly above 25% for regulated city gas players.

Bifurcation in financial policies among the Japanese utilities will likely continue. Most Japanese electric utilities will continue with modest shareholder returns. This is because they are increasingly aware that a sufficient financial buffer is necessary to cushion capex, which will likely accelerate, amid uncertainties around operating environments including potential fuel price volatility. By contrast, we expect Japanese leading gas utilities will remain aggressive in

shareholder returns than in the past years. This is because they started to prioritize improving capital efficiency (e.g., returns on equity) and may reduce capital as part of measures to achieve this efficiency.

For South Korean utilities, debt leverage will stay high, despite improving significantly from peak levels seen in 2022-2023. We forecast Kepco's FFO-to-debt ratio to improve to about 10%-12% in 2024-2026, from 2.8% in 2023. Kogas' FFO-to-debt ratio will likely improve to about 6%-8% in 2024-2026, from 4.5% in 2023.

Kepco's capex burden will likely be sizable over the next 12-24 months, driven by investments in nuclear power plants and green energy projects. Meanwhile, Kogas will face ongoing challenges in recovering tariff-related receivables, which will limit the pace of deleveraging.

Key risks or opportunities around the baseline

1. Acceleration in investments by electricity utilities.

For Japanese electric companies, downward pressure on free cash flow could grow if investments in decarbonization or safety measures to restart their idle nuclear power plants accelerate, resulting in more debt. This would add to the already very high debt levels of electric utilities due to the global energy crisis in 2022.

For Kepco, we assume rising capex in 2024-2026 from 2022-2023 levels, driven by investments in new nuclear power plants and green energy projects. This should limit the pace of its deleveraging to gradual at best.

2. Intensified competition in domestic electricity retail in Japan.

The deregulation of the electricity retail business leaves open the possibility of the industry being exposed to fierce competition. This could hit sector profitability.

3. Expansion in unregulated businesses by Japanese gas players.

Japan's largest regulated gas players are expanding unregulated domestic IPP business and shale gas development projects in North America. Higher exposure to such areas could add volatility to the earnings and cash flow of these utilities.

4. Tariff adjustment visibility remain a risk to Korean utilities.

Korean utilities companies endured a sharp spike in debt over 2021-2023, largely due to delayed and insufficient tariff adjustments. Uncertainties around timely tariff adjustments remain a key swing factor for the Korean utilities' credit metrics and deleveraging.

In Japan, a second round of competition in the electric retail sector is set to start. Liberalization of the retail electricity market in April 2016 lured hundreds of new entrants to the market. Many of them exited from the market following the outbreak of the global fuel crisis and turbulence in the electricity wholesale market in 2022. That said, competition among retail players is gradually intensifying again, in our view, because of the new standard business practice. Power generation units of major regulated power companies are now required to treat other players for power purchases on equal terms with their own retail subsidiaries. Accordingly, retail players can procure cost-competitive electricity easily and make the most of it to take retail market shares.

In Korea, we see Kepco's capital expenditure burden also increasing. We forecast its capex will increase to Korean won (KRW) 16 trillion–KRW18 trillion in 2024-2025 from KRW14 trillion in 2023 and KRW12 trillion in 2022. The increase is in large part driven by further investments in

generation capacity including nuclear power plants. This should constrain the pace of debt reduction for the company, in our view, in the next 12-24 months.

In addition, delays to tariff adjustments is a risk for Korean utilities, although we have seen the companies' earnings recover over the past few quarters. For Kogas, we estimate it will take five years or more for it to recover receivables accumulated through the period when commodity prices spiked and tariff adjustments were delayed. For Kepco, although recent tariff hikes have provided some relief, they are insufficient to significantly reduce its debt stemming from substantial losses over 2021-2023.

Industry Credit Metrics: Japan and Korea

Chart 23

Debt / EBITDA (median, adjusted)

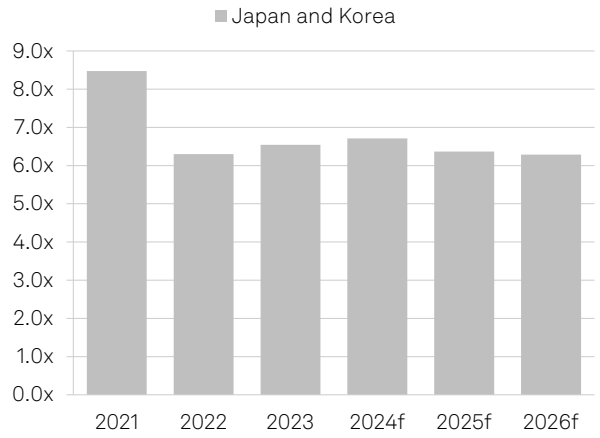


Chart 24

FFO / Debt (median, adjusted)

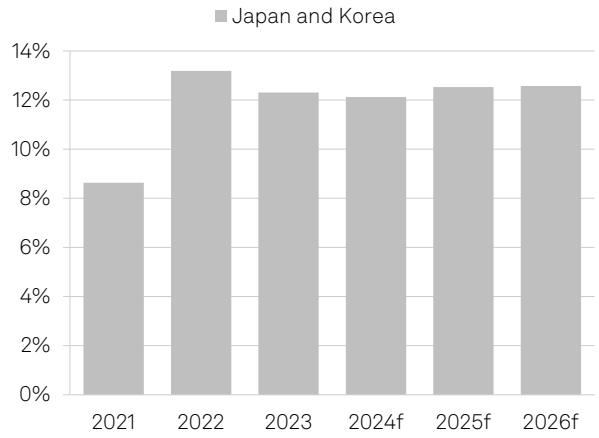


Chart 25

Cash flow and primary uses

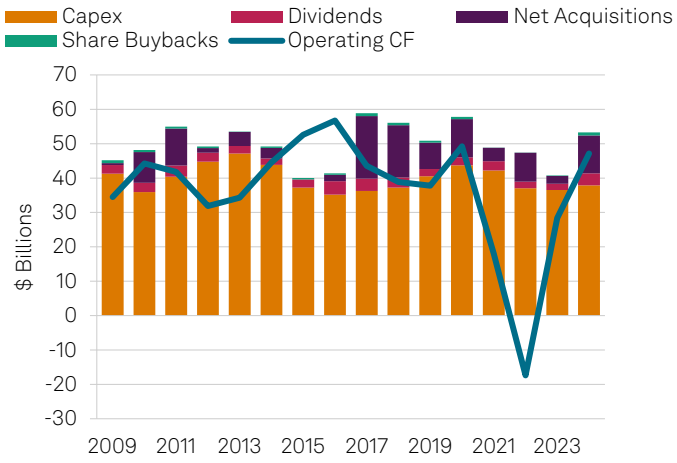
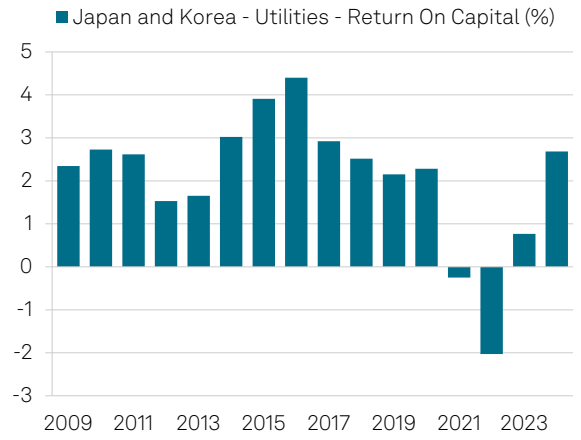


Chart 26

Return on capital employed



Source: S&P Global Ratings, S&P Capital IQ.
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