

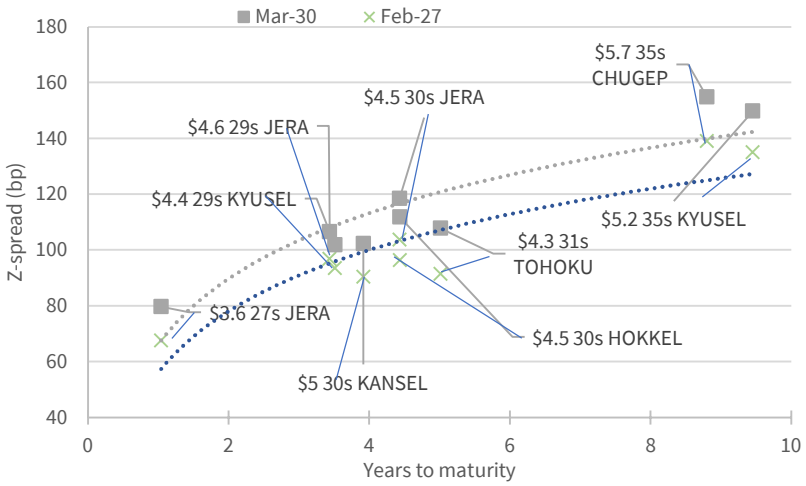
Japan utilities and the energy shock

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The war in Iran has damaged key energy infrastructure in the Middle East and closed the Strait of Hormuz, disrupting global oil and LNG flows. The duration of the conflict is uncertain — and when the conflict resolves, repairs to affected facilities and a resumption of normal trade flows will take months, keeping energy and commodity prices elevated and volatile. In this paper, we examine the implications of the current energy shock to Japan's utilities.

We focus on six organisations with USD bonds outstanding: JERA, Hokkaido Electric, Tohoku Electric, Kyushu Electric, Kansai Electric, and Chugoku Electric (Tickers: JERA, HOKKEL, TOHOKU, KYUSEL, KANSEL, and CHUGEP, respectively). JERA is Japan's largest power generation company, created as a 50/50 joint venture between TEPCO and Chubu Electric. It is a large LNG buyer. The others are regional electric utilities in Japan.

Figure 1. Japan USD bond utility spreads (Feb 27 vs Mar 31). Source: Bloomberg Finance L.P. accessed 31 Mar 2026.



We compare the effects of the current conflict with the previous energy shock in 2022-23 triggered by the Russia's invasion of Ukraine and see how Japan's power system has progressed since then — and unpack what challenges remain.

Key Takeaways

- **Japan's energy vulnerability is being exposed by the current US/Israel-Iran war, as the country is grappling with supply insecurity for both oil and LNG despite its efforts to diversify energy sources.**
- **Compared with the last energy shock during the Russia-Ukraine war, Japanese utilities may see less pressure on profit margins from higher fuel costs. This is because the fuel cost adjustment system is now more flexible. Utilities' bonds that rely less on fossil fuels have performed better than those that still depend heavily on them.**
- **There have been only limited changes to the power mix of most utilities since the last energy shock, except for Kansai and Kyushu Electric. Renewable generation remains a negligible portion of output at most utilities. While there has been a renewed focus on nuclear restarts, Japan also needs to prioritise investments in infrastructure for renewables if it wishes to achieve better energy security.**

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Introduction

Japan imports around 95% of its crude oil and 11% of its liquefied natural gas (LNG) from the Middle East.[1] About 6% of Japan's LNG imports pass through the Strait of Hormuz. Japan imports about 40% of its LNG from Australia[2] and the remaining amount from Asia, Russia, the US, and the Middle East. With war-related damages reported to the world's largest LNG plant in Qatar, and Australia experiencing major outages at one of its larger LNG export plants, global LNG supply has tightened. Despite Japan's diversified LNG procurement strategy, LNG supply dynamics will have an impact on Japan utilities through higher and more volatile LNG prices and ongoing delivery challenges. The situation will worsen if the conflict is prolonged.

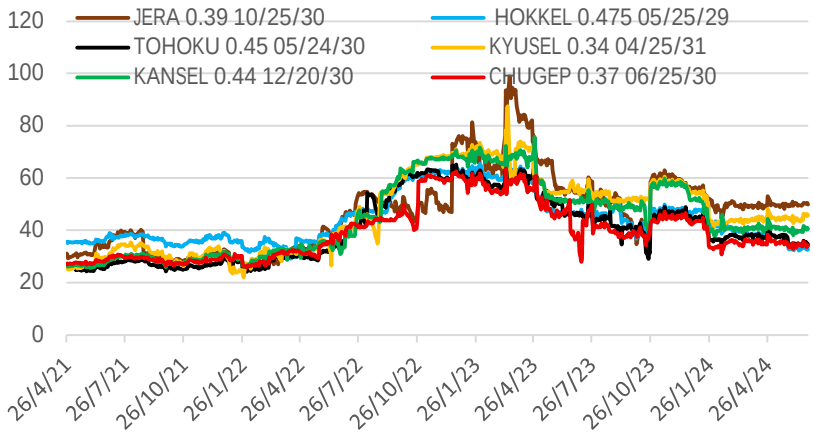
The Platts Japan-Korea Marker (JKM) benchmark price for LNG, which reflects the marginal value of spot cargoes in Asia (and includes the cost of liquefaction and shipping), had risen to USD20.4/MMBtu on March 30, from USD10.7 on February 27 this year. JKM prices peaked in 2022 at about USD70 during the worst period of the Russia-Ukraine conflict, and averaged USD34 in 2022.

Japan has taken several short-term measures to manage this latest energy shock. It has asked Australia to increase LNG shipments to its shores and raise output.[3] METI — the Ministry of Economy, Trade and Industry — which leads the country's energy security and energy transition policy, has temporarily relaxed its rules for one year so more coal-fired plants can run from April. This is expected to cut LNG use by 500,000 tonnes per year.[4] In addition, JERA and Korea Gas Corporation signed an MoU to facilitate LNG supply, including possible cargo swaps to increase flexibility.[5] METI has stated that Japanese power and gas companies had about 4 million metric tonnes of LNG in inventory as of March 10.[6] As for oil, Japan has released from its strategic reserves some 80 million barrels, equivalent to roughly 45 days of demand, plus around 15 days' worth from private stocks.[7]

2022 energy shock

During the previous energy shock in 2022-23, the six companies JERA, HOKKEL, TOHOKU, KYUSEL, KANSEL, and CHUGEP, did not have USD bonds outstanding. Such bonds were issued from 2024, however. In this section, therefore, we examine their JPY denominated bonds and assess how spreads moved from late 2022 and mid-2023. As shown in Figure 2, spreads moved from the lows of early 2022 2.5x to 4x at the peak

Figure 2. Japan utility JPY bonds historical trading spreads (April 21 to Jun 24). Source: Bloomberg Finance L.P. accessed 30 Mar 2026.

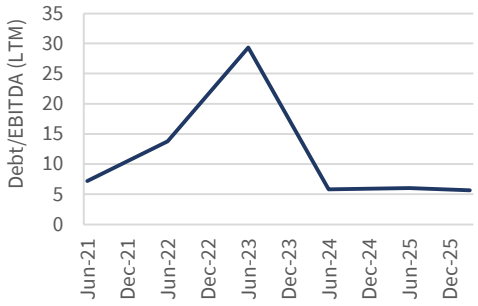


[1] "Japan's weak spot on energy in focus as Middle East crisis worsens", Channel News Asia, 11 Mar 2026.
[2] "Asia's oil and LNG dependence on the Middle East", Reuters, 3 Mar 2026.
[3] "Japan industry ministry asks Australia to boost LNG output amid Iran crisis", Reuters, 14 Mar 2026.
[4] "Japan to allow more coal-fired power to cope with energy shock", The Japan Times, 27 Mar 2026.
[5] "JERA signs MOU with KOGAS to enhance cooperation in LNG operation", JERA, 14 Mar 2026.
[6] "15 years after Fukushima disaster, Japan confronts new energy crisis", S&P Global, 11 Mar 2026.
[7] "Japan starts release of state-held oil to stabilize supplies amid Iran war", The Straits Times, 26 Mar 2026.

around March 2023, from a level in the mid-20bps to the mid-60bps (or 99bps in the case of JERA). Although these domestic JPY bonds are less liquid than their USD issues, spreads widened sharply in the last energy crisis as fuel procurement costs surged and utilities' cash flows fell. These firms, then heavily reliant on LNG and coal with limited nuclear and renewables, could not pass higher fuel costs through quickly enough under regulated and contracted tariffs to counteract the shock.[8]

Many companies in the sector experienced an increase in leverage (the sector average is shown in Figure 3.)[9] CHUGEP, JERA, KANSEL, TOHOKU, and Tokyo Gas issued subordinated hybrids — which received 50% equity treatment from the rating agencies — to shore up their capital and prevent their leverage from deteriorating further.

Figure 3. Japan Utility sector leverage (defined as last twelve months Debt/EBITDA). Source: Bloomberg Finance L.P. accessed 30 Mar 2026.



Fuel adjustment is calculated monthly using a three-month average on import prices versus a fixed base price. In 2022, as fuel prices spiked rapidly, the regulatory ceiling designed to protect consumers was exceeded quickly and utilities had to absorb part of the price shock. Currently, there is more flexibility in the system that allows for extra market-linked surcharges for large users. Therefore, utilities are expected this time around to have less margin squeeze if prices remain high, although the three-to–six-month fuel adjustment time lag remains.

What has changed since 2022?

Japan suffered through a 97.5% increase in its LNG bill of USD65.8 billion in 2022 as prices surged.[10] In response to this energy shock, METI stepped up strategic reserve purchases and initiated an LNG procurement strategy encouraging long-term, flexible contracts. METI also formalised its role in monitoring shipping, stocks, and coordinated swaps between Japanese buyers, while JOGMEC[11] became involved in financially supporting upstream and midstream LNG projects overseas.[12] In addition, a Strategic Buffer LNG (SBL) was introduced in December 2023 which requires JERA to hold at least one extra LNG cargo per winter month. The broader strategy was to diversify away from Russia, which in 2021 accounted for 9% of Japan's total LNG imports.[13]Japanese buyers evolved to become LNG portfolio players and started reselling surplus cargoes on the spot market at scale.

Current exposure to LNG from the Middle East is relatively limited, with JERA, KANSEL, and TOHOKU having direct offtake contracts with Oman, Qatar, and Abu Dhabi gas companies. On the other hand, JERA contracts over 10 Mtpa of LNG from Australia, out of around 35 million tonnes.[14] KANSEL and KYUSEL also have offtake contracts with Australia (see Table 3 in the Appendix). Japan

[8] For a discussion on Japan gas utilities and their LNG strategy please see "Japan Gas Utilities – LNG exposure creates risks for bondholders."
[9] Figure 2 shows the aggregate data for 26 companies under Bloomberg's utility sector in the Topix index and includes the 10 electric utilities as well as the gas utilities and other smaller utilities.
[10] "Japan was the world's largest LNG importer in 2022, followed by China", LNG Prime, 19 Jan 2023.
[11] JOGMEC (Japan Organization for Metals and Energy Security) is Japan's state resource-security agency.
[12] "Japan weighs government's involvement in LNG procurement amid Ukraine", S&P Global, 31 Mar 2022.
[13] Ibid.
[14] "JERA finalises major Australian acquisition of 15.1% participating interest in Woodside Energy's Scarborough Gas Field Project", JERA, 31 Oct 2024.

utilities have increasingly signed LNG offtake agreements with the US in the last few years, too. For example, JERA signed a 20-year agreement for up to 5.5 million tonnes of LNG from the US in June 2025.[15] KYUSEL also signed its first long-term contract with Energy Transfer in 2025 for 1 Mtpa out of its export project in Louisiana.[16]

The power mix of our sample of utilities has evolved only slightly since 2021. JERA, HOKKEL, CHUGEP, and TOHOKU are still fossil-heavy, reliant on LNG and coal. While HOKKEL, CHUGEP, and TOHOKU have plans to restart their nuclear plants in the next three years, JERA remains predominantly fossil fuel entrenched. The pace of nuclear restarts has been slow, and was hampered recently by Chubu Electric and Tokyo Electric Power (TEPCO). Chubu was found to have falsified earthquake-related data, while TEPCO delayed its March 18 re-start to April 16 due to a component fault.

Table 1. Power mix comparison of most current available year versus pre-Russia/Ukraine conflict power mix. Source: Company filings.

Respective		Previous (~2021/2022)				Most Current Available (2024/2025)			
Years (FY)	Company	Nuclear	Thermal	Renewable*	Other	Nuclear	Thermal	Renewable*	Other
2021/2025	JERA (1)	0	100	0		0	99.99	0.01	
2022/2025	Hokkaido Electric	0	84.6	14.9		0	83.4	16.5	
2021/2025	Chugoku Electric	0	88.9	11.1		6.5	81.5	12	
2021/2024	Kansai Electric	36	50	14		48	39	13	
2019/2024	Kyushu Electric (1)	23	49	22	6	37	44	19	
2021/2024	Tohoku Electric	0	66	13	22	3	65	10	23

*Renewable includes Hydropower. (1) Includes FIT and purchased power

As can be seen in Table 1, KANSEL and KYUSEL have ramped up nuclear most significantly in recent years. TOHOKU and HOKKEL are also slated to generate more nuclear energy in FY28 and FY27 respectively but continue to incur high nuclear-related capex.

Renewable investments among the utilities are limited. These accounted for only 9-17% of total power generation capex annually across KANSEL, KYUSEL, J-Power, HOKKEL, and TEPCO.[17]

We do not expect cash flow stress at the utilities to reach 2022–2023 levels unless the current energy shock is significantly prolonged. This is because the fuel cost adjustment system is now more flexible. That said, some utilities are still more exposed to energy price volatility.

JERA is particularly vulnerable because its power mix is almost entirely made up of thermal coal and LNG, making earnings sensitive to fuel prices. Its global markets arm actively trades LNG and JKM swaps, which helps optimise short- and medium-term positions but does not remove this exposure.

HOKKEL and TOHOKU are in heavy capex cycles for nuclear safety upgrades and restarts, while HOKKEL and CHUGEP have the sector's highest leverage and negative interest coverage (EBITDA minus capex is below interest expense, see Table 4 in the Appendix). They would be hit hardest if high energy prices persist.

[15] "JERA announces milestone agreements with US partners", JEPIC USA, 12 Jun 2025.
[16] "Energy Transfer signs 20-year LNG deal with Kyushu Electric for Lake Charles project", RTTNews, 29 May 2025.
[17] "Nuclear Drives Capex in Japan 15 years after Fukushima", BNEF, 11 Mar 2026.

KANSEL and KYUSEL, in contrast, have stronger credit metrics and a larger share of nuclear generation in their power mix, so we expect them to be more resilient if the war in Iran is prolonged.

We show in Table 2 how spreads of the Japan utility sector's bonds have performed in the past month, relative to other developed market utility sector bonds. Spreads of the shorter-dated Japan utility bonds (average 3.7 yrs of duration) widened by an average of 12bps over the past month, while the longer-duration bonds (average 7 yrs duration) widened by about 14bps over the same period.

Within the Japan utility sector, KANSEL 30 and KYUSEL 29 have outperformed relatively, given their lower reliance on fossil fuel procurement, while HOKKEL 30, TOHOKU 31, and CHUGEP 35 have widened more. This is in line with expectations, and if the energy market crunch persisted, we could potentially see more dispersion between HOKKEL and CHUGEP and the rest of the sector given their weaker credit profiles and strong reliance on fossil fuels. Compared with similarly rated US utilities in the same duration bucket, the Japan utilities have underperformed. However, they are in line with their European peers.

Table 2. Japan USD utility bonds change in spread versus Bloomberg US and Europe Utility sector indices change in spread. Source: Bloomberg Finance L.P. accessed 1 Apr 2026.

Issuer (Rating)	Modified Duration	27/2/2026	31/3/2026	Chg in Spd
JERA 30 (A-)	3.9	103.7	117.9	14.2
KANSEL 30 (A3)	3.5	90.5	100.3	9.8
KYUSEL 29 (A3)	3.2	93.5	101.7	8.3
JERA 29 (A-)	3.1	96.8	106.1	9.3
HOKKEL 30 (BBB+)	3.9	96.4	111.0	14.6
TOHOKU 31 (A-)	4.4	91.5	107.7	16.1
KYUSEL 35 (A3)	7.3	135.1	147.4	12.3
CHUGEP 35 (BBB+)	6.6	139.0	154.6	15.6
Bloomberg US utility intermediate (A3/Baa1)(1)	4.3	78.9	85.7	6.8
Bloomberg Europe utility intermediate (Baa1/Baa2)(2)	5.2	97.1	111.8	14.7
Bloomberg Europe utility (3-5 yrs)(Baa1/Baa2) (3)	3.7	81.4	97.2	15.8

(1) Bloomberg US corporate index LUACTRUU Utility sector intermediate bonds.
(2) Bloomberg Euro-Aggregate LP05TREU Intermediate utilities 5-7 years bonds.
(3) Bloomberg Euro-Aggregate LP05TREU utilities 3-5 years bonds.

Short-term measures versus long-term strategy

The short-term response to the present energy crisis to use more coal power goes against Japan's recent efforts to shutter inefficient coal plants. Coal prices have also increased, with Newcastle coal futures up from USD115.8 on Feb 27 to USD144.25 on March 30. The reduction of about 500,000 tonnes of LNG shipped per year by reverting to coal can be easily achieved by increasing existing solar generation from current capacity. Japan's solar generation share was about 9.5% in 2024,[18] despite having a capacity of 70GW in FY24, and up to 100GW by FY25.[19] This puts Japan's

[18] "Japan remained the fourth-largest solar generating country globally in 2024, but lags far behind on wind", EMBER, 8 Apr 2025.
[19] "The Electric Power industry in Japan 2025", Japan Electric Power Information Center Inc., 28 Feb 2026.

capacity factor for solar at only around 11%.[20] This low utilisation rate is due to grid integration constraints, caused by insufficient grid infrastructure and transmission bottlenecks. There is also a curtailment of excess output during peak solar hours. Just increasing the capacity factor by a few percentage points could compensate for the displaced LNG.

Japan's energy transition has progressed slowly. The latest oil shock will disrupt global supply chains, not only for oil and petrochemicals but also for clean energy inputs such as batteries, critical minerals, and related components. This could likely add to inflationary pressures, weaken the yen, and push interest rates higher. Japan is turning back to fossil fuels such as coal in the short term to limit economic damage, but the long-term strategy should focus on energy self-sufficiency via renewables.

Japan's ten regional integrated monopolies, with their transmission and distribution grids, are the key to renewable power growth. These utilities need to level up their grid management and invest in transmission and distribution to include renewables in their networks. However, this approach would be at odds with their existing thermal assets, which have to be phased out eventually to make way for the renewables. If the current energy shock persists, those utilities which rely on importing fossil fuel will suffer from lower cashflows, as was the case in the past energy shock in 2022-23, and the earnings squeeze will force the utilities to delay further their energy transition investments.

LNG has been held up as a transition fuel for Japan, allowing inefficient coal plants to close while renewables and nuclear capacity generation ramp up. The current LNG situation shows that even a diversified supply strategy cannot fully eliminate the risks associated with this fuel. In this increasingly unstable geopolitical environment, policymakers will have to make tough choices and prioritise investment in critical energy infrastructure, particularly in grids that can support more renewables.

Conclusions

- The current US/Israel-Iran conflict has exposed Japan's energy vulnerability. While the country has sought to diversify its fossil fuel supply since the Russia-Ukraine energy crisis, it remains exposed to volatile fuel prices and supply insecurity.
- The previous energy shock in 2022-2023 shows how utilities' earnings and cashflows would suffer due to their reliance on imported fossil fuels as energy prices explode and access is curtailed. These stresses would also impact future investments in capital expenditures. Current price adjustment mechanisms allow utilities to recuperate more of the higher procurement costs and buffer higher prices to limit margin impact. However, if the energy shock is more prolonged, the impact on utilities' cashflows will be more dire.
- Japan utilities that can adapt to shifting geopolitics and are less reliant on fossil sources, such as Kansai and Kyushu Electric, have outperformed the rest of the sector.
- To achieve energy security, Japan will need to pursue the long-term strategy of increasing renewable and nuclear generation. This means prioritising investments in critical infrastructure for renewables, including in the grid, transmission, and distribution.

[20] Total solar power transmitted in 2024 in Japan was estimated to be 96.6TWh. This is against capacity of 100GW, and capacity factor will be 96.6 TWh (100GWx8760h).

Appendix

Table 3. Japan utility LNG offtake contracts. Source: Global LNG Contracts Database (Jan 26 Update), BloombergNEF.

Company	Export Project	MM metric ton/yr Contract Volume	Start yr	End yr	Terms	Country
JERA	ADNOC LNG	NA	NA	NA	NA	Abu Dhabi
JERA	QatarGas	0.7	2013	2028	Oil linked	Qatar
JERA	QatarGas	3	2028	2055	NA	Qatar
JERA	Oman LNG	0.8	2025	2034	NA	Oman
Tohoku Electric	QatarGas	0.5	2013	2027	NA	Qatar
Kansai Electric	QatarGas	0.18	2016	2030	Oil linked	Qatar
Kansai Electric	Oman LNG	0.4	2026	2029	NA	Oman
Jera	Pluto LNG Trains 1-2	1.2	2026	NA	Oil linked	Australia
Jera	Darwin LNG	0.425	2026	2046	Oil linked	Australia
Jera (Chubu Electric)	Wheatstone LNG	1	2017	2036	Oil linked	Australia
Jera (Tepco)	Wheatstone LNG	3.3	2017	2036	Oil linked	Australia
Jera (Tepco)	Wheatstone LNG	0.41	2017	2036	Oil linked	Australia
Jera (Tepco)	Wheatstone LNG	0.7	2017	2036	Oil linked	Australia
Jera (Chubu Electric)	Ichthys LNG	0.49	2018	2032	Oil linked	Australia
Jera (Tepco)	Ichthys LNG	1.05	2018	2032	Oil linked	Australia
Jera (Tepco)	Wheatstone LNG	0.9	2017	2036	Oil linked	Australia
Jera (Chubu Electric)	Gorgon LNG	1.44	2016	2040	Oil linked	Australia
Jera (Chubu Electric)	North West Shelf LNG	0.6	2009	2029	Oil linked	Australia
Kansai Electric	Ichthys LNG	0.8	2018	2032	Oil linked	Australia
Kansai Electric	Australia Pacific LNG (APLNG)	1	2016	2036	Oil linked	Australia
Kyushu Electric	Ichthys LNG	0.3	2018	2032	Oil linked	Australia
Kyushu Electric	Wheatstone LNG	0.8	2017	2036	Oil linked	Australia
Kyushu Electric	Gorgon LNG	0.3	2016	2031	Oil linked	Australia
Tohoku Electric	Wheatstone LNG	0.92	2017	2036	Oil linked	Australia
Jera	Portfolio	1	2029	2050	Gas-linked	US
Jera	Port Arthur LNG (Phase 2)	1.5	2031	2050	Gas-linked	US
Jera	Commonwealth LNG	1	2030	2050	Gas-linked	US
Jera	Rio Grande LNG (Phase 2) Train 5	2	2031	2051	Gas-linked	US
Jera	CP2 LNG Phase 1	1	2029	2049	NA	US
Jera (Tepco)	Cameron LNG	0.8	2019	2039	Gas-linked	US
Jera (Tepco)	Cameron LNG	0.4	2019	2039	Gas-linked	US
Jera (Chubu Electric)	Freeport LNG (Train 1)	2.32	2019	2039	Gas-linked	US
Japanese consortium	Lake Charles LNG	1.6	2032	2052	NA	US
Kansai Electric	Cameron LNG	0.4	2019	2039	NA	US
Kansai Electric	Cove Point	0.8	2018	2037	Gas-linked	US
Kansai Electric	Freeport LNG	0.13	2020	2032	NA	US
Kyushu Electric	Lake Charles LNG	1	2032	2052	NA	US
Tohoku Electric	Cameron LNG	0.2	2022	2039	Gas-linked	US
Tohoku Electric	Cameron LNG	0.27	2019	2039	Gas-linked	US

Table 4. Credit metrics of Selected Japanese Utility issuers, Source: Bloomberg Finance L.P. accessed 30 Mar 2026.

Credit Metrics	FY2024 JERA	FY2024 HOKKEL	FY2024 KANSEL	FY2024 KYUSEL	FY2024 TOHOKU	FY2024 CHUGEP
Debt/EBITDA	6.70	9.58	5.33	8.31	6.90	12.97
Net Debt/EBITDA	4.30	8.53	4.23	7.53	5.77	11.80
EBITDA/Interest	8.99	13.56	24.03	14.99	18.80	16.94
EBITDA-Capex/Interest	4.07	-1.85	10.49	3.39	3.76	-9.90
Debt/Equity (%)	117.60	350.62	144.45	362.78	333.28	450.70
Debt/Capital (%)	54.05	77.81	59.09	78.39	76.92	81.84
(Bn JPY)						
Revenues	3,355.9	902.1	4,337.1	2,356.8	2,644.9	1,529.2
Total Debt	3,522.0	1,428.2	4,488.9	3,741.3	3,362.1	3,181.3

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