

Korea Electric Power Corp

South Korea, Steel

Accounting		Climate Assumptions		Audit		Date of analysis: May 19 2021
Judgements	Consistency with other reporting	Visibility	Paris alignment	Visibility in CAMs	Consistency check	Year end: December 2020 Report date: April 30 2021 AGM: March 25 2021
Significant concerns	Significant concerns	Significant concerns	Significant concerns	Significant concerns	Significant concerns	CA 100+ company, so seen by investors as key to driving global net zero emissions
<p>Summary view:</p> <ul style="list-style-type: none"> • Korea's electricity distributor, and the generator of around 70% of its electric power, KEPCO has a significant CO2 footprint, not least because 45% of output is from coal-fired generation, with more from other fossil fuels. • While there are significant ambitions for decommissioning coal power stations or converting them to LNG, the CO2 footprint will remain substantial – and the company has coal-fired assets elsewhere in Asia with expected lives to 2050 and beyond. Yet none of the clear associated risks and issues appear to be reflected in the financial statements. 						

Background

The Business

- Korea Electric Power Corp (KEPCO) is Korea's national electricity company. It is 18% owned directly by the government and a further 33% through the Korea Development Bank.
- KEPCO is both a generator of electricity and a distributor. Transmission and distribution is the largest segment (47% of assets, 62% of revenues prior to removing intersegment duplication); power generation is split into nuclear (26% of assets, 11% of revenues) and non-nuclear (23% of assets, 22% of revenues). It owns just under 65% of Korea's total electricity generation capacity and generated just over 70% of the electricity used in 2020.
- Nearly half of KEPCO's 24 nuclear power units reach the end of their original 30-year licences before 2030. The government seems to be moving away from new nuclear generation, having cancelled planning on 6 KEPCO units and appearing to be reconsidering 4 more where construction has already begun.
- While the company has exposures across renewables, including wind, solar and hydro-electric (Korean generators are currently expected to produce at least 10% of power from renewables), almost 45% of KEPCO's electricity output comes from coal-fired generation and around 11% from LNG. Nuclear represents 28% of KEPCO's installed capacity; hydro 6% (though most of this – 5.6% of total capacity – is pumped storage), and other renewables total less than 2%. KEPCO bought 68m tons of bituminous coal in 2020 at an average price of just under W70,000 per ton.
- KEPCO made substantial losses in 2018 and 2019 (W1,175bn and W2,264bn respectively) as fuel prices spiked upwards but government-approved electricity tariffs did not rise at the same rate. The company has returned to profit in 2020 (W2,093bn) as fuel prices have fallen.

Approach to climate change

- Korea has set out significant climate ambitions, including a national 2050 net zero goal. KEPCO will face increasing expectations and requirements to decarbonise. Among other national ambitions are further increases in renewables generation: 20% of the total by 2030, 25.8% by 2034. Coal generation should reduce over that same period: from 28.1% (35.8GW) in 2020 to 18.9% (32.6GW) in 2030. KEPCO's coal generation capacity is currently 34GW; it aims to convert 24 coal-fired plants with 12.7GW capacity to LNG by 2034.
- KEPCO acknowledges the increase in costs that should be expected from the increasing stringency of policies: "Complying with these Government initiatives and operating programs in furtherance thereof has involved and will likely continue to involve significant costs and resources on our part, which may adversely affect our results of operation, financial condition and cash flows... We expect our future compliance costs may increase as the requirements under Government initiatives and operating programs continue to become more rigorous."

- Despite this and the broader context, KEPCO’s budgeted expenditures on generation capacity show W9.4bn going into thermal power generation over the next 3 years, W9.0bn into nuclear and only W2.8bn into renewables. Nonetheless, the company plans to develop 41.2GW of renewables capacity by 2030.
- KEPCO in October 2020 stated that it would not seek further coal plant construction opportunities outside Korea, and would apply enhanced environmental standards to those overseas coal projects that it is already involved in. In spite of this undertaking, in 2020 the company confirmed its investments in the construction of 3 coal-fired power stations, one in the Philippines and two in Indonesia. The associated operational agreements anticipate these power stations being operated through to 2049 and 2050. A further 1.2GW coal power station in Vietnam is due to be completed next year and anticipated to have a life to 2047. A joint venture in Shanxi, China, has 9GW of largely coal capacity with an expected life to 2057.
- Korea has a GHG emissions trading mechanism. KEPCO enjoys an allocation of free emission allowances which cover most of its activities, and buys additional allowances as needed. The third phase of the ETS runs from 2021-25 and sees a reduction in free allowances and 10% of allowances allocated through an auction (up from 3% in the prior phase).
- There is no apparent recognition of risks from the physical impacts of climate change for the company, in spite of, for example the obvious rainfall dependencies of hydroelectric power production.
- KEPCO reveals group Scopes 1&2 emissions of 202m tCO₂ in 2019 in its Sustainability Report, and Scope 3 emissions of 265m tCO₂ (mostly from power generation by suppliers).
- Contrast KEPCO’s steady approach with Carbon Tracker’s conclusion on thermal power generation in the country: “All South Korean coal power plants will become unprofitable before the end of their planned operating lifetimes under current policies.”¹

Accounting: judgements and consistency with other reporting

Accounting judgements		Significant concerns
<ul style="list-style-type: none"> • KEPCO reports under IFRS as issued by the IASB. • There appears to be no reference to climate change in the notes to the US GAAP financials. It is not apparent that any consideration of climate has been built into the numbers. • Many assets are held in the books on very long lives. Buildings have estimated useful lives up to 40 years, structures up to 50 years, machinery up to 32 years and lease assets up to 65 years. Depreciation is on a straight-line basis over these lives. The book value of buildings was some W12,617bn, structures W46,259bn and machinery W50,039bn – with depreciation levels in implying average remaining useful lives of more than 14 years, nearly 20 years and 9 years respectively². • Heavy water has a stated estimated useful life of 30 years, although the company applies a units of production method for depreciation of nuclear fuels. It has a W16,975bn provision for nuclear decommissioning costs, a further provision for disposal of spent nuclear fuel of W1,354bn, as well as W1,892bn in respect of lower grade nuclear waste. More than W800bn in assets is held against these liabilities. • The company regularly reports a year-end asset representing GHG emissions rights held. These are the free allowances and any purchased that have yet to be surrendered to the government through the ETS scheme. In 2020 this was W357bn, and it may be set against a year-end GHG emissions obligation provision of W393bn. • Having constructed the hydroelectric plant at Semangka in Indonesia, KEPCO has a 30 year concession to 2048 to operate it. Annual income from this concession is W27bn, with some W525bn expected to be earned beyond 3 years from year end. 		

¹ See *End in Sight: How South Korea can force coal offline by 2028*, April 2021: <https://carbontracker.org/reports/end-in-sight/>

² In the absence of better data, implied lives are roughly estimated using depreciation expense and year end asset values net of depreciation.

Consistency with other reporting		Significant concerns
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- KEPCO's 20-F is published as a stand-alone document, already one month after the AGM. The 2020 Sustainability Report ('Clean Energy, Smart KEPCO') was issued in September 2020 and includes TCFD, SASB, GRI and IIRC aligned reporting and covers the 2019 calendar year, with some early 2020 activities cherry-picked for mentioning.
- The Sustainability Report unhelpfully frequently uses data relating only to the parent company, excluding the much greater emissions profile of the power generating subsidiaries. For example, the assurance statement covers only the parent company GHG emissions. Total Scopes 1&2 emissions for the group were 202m tCO₂ in 2019, with a further 265m tCO₂ in Scope 3 emissions (220mt from power generation from the other generators whose electricity production KEPCO distributes, and 45mt from the production of fuels). Its target is to reduce CO₂ emissions by 47mt by 2030 through decommissioning older coal plants and converting some to LNG, as well as developing a further 41GW of renewables assets.
- Apart from a brief discussion of the Korean CO₂ emissions trading scheme (ETS), and mentions within risk reporting referring to the challenges arising from changing government CO₂ and renewables policies, there is little mention of GHG emissions or climate change in the 20-F narrative reporting – just as there is not in the financials.
- The 20-F narrative reporting notes the ownership of 10 mineral projects (5 coal, 5 uranium) which were transferred from the parent to its generating subsidiaries in 2016. The value of these assets in 2016 was W622bn; a more recent valuation does not appear to be disclosed and nor does any further insight into the operations and the exposures they bring.
- The book values of power generation assets are not disclosed, nor are their useful lives. However, the narrative disclosures indicate that many of the individual coal and nuclear power units are up to 20 years old and beyond, suggesting that they are reaching the end of their useful lives and that they may represent limited value at risk.
- Given the scale of the challenges facing KEPCO arising from the Korean government's plans for transformation of electricity generation and infrastructure, with key milestones in 2030 and 2034, it is concerning how little this is reflected in the 20-F financial reporting.

Climate assumptions in accounts: visibility and Paris alignment

Visibility of climate assumptions in accounts		Significant concerns
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- There are no apparent climate-related assumptions. There is thus no sensitivity analysis.

Paris alignment		Significant concerns
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- With no visibility, there can be no alignment with the goals of the Paris Agreement.

Audit: visibility in CAMs and consistency check

Audit firm: Ernst & Young Han Young	Responsible partner: Jungik Park ³
Audit standards: PCAOB standards	

Visibility in Critical Audit Matters		Significant concerns
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- There no explicit reference to climate change in the auditor's report.
- There is one CAM identified – impairment of PP&E in electricity transmission and distribution business.
- This impairment judgement – the assessment was triggered by operating at a loss in prior years – is dependent on estimates of future revenues and profitability, and so would potentially be impacted significantly by climate change considerations, including additional

³ Audit partner for 2019 audit (the first year of Ernst & Young Han Young's engagement as auditor); audit partner for 2020 is not yet disclosed on the PCAOB database.

CO2 emission constraints or costs. Though the auditor identifies a number of key sensitivities, including future sales volumes, sale prices, cost of power purchases and discount rates, it is not apparent that climate change considerations were incorporated in the approach.

- The reference to the use of advice from specialists refers to valuation experts, not those expert in climate change or CO2 markets.

Consistency check		Significant concerns
<ul style="list-style-type: none"> • PCAOB audit standards require the auditor to read other information that is presented together with financial statements and the auditor’s report thereon. The auditor’s report is silent on the outcome of the review, which implies that no material inconsistency was identified in the other information within the 2020 20-F. • The 20-F appears to be internally consistent, given the minimal discussion on climate change in the narrative reporting and the fact it appears to be ignored in the financial statements. 		

<p>The Climate Accounting Project is an independent investor-led project to reinforce the statements of the IASB and IAASB that material climate change issues are incorporated within their standards. This analysis seeks to understand the extent to which companies and auditors are delivering against this aspect of these standards and similar local standards.</p>	Key	
		Good practice
		Few concerns
		Some concerns
		Significant concerns

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