Formosa Petrochemicals Corporation (FPCC)
Taiwan, Oil & Gas

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<tr><td></td><td></td><td></td><td></td><td></td><td></td><td rowspan="2">CA 100+ company, so seen by investors as key to driving global net zero emissions</td></tr>
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• FPCC faces material climate risks – primarily transition risks from policy measures to reduce the company's own carbon emissions and anticipated reduced demand for end products, which are refined from hydrocarbons – and physical risks, especially the impact of reduced rainfall on water scarcity for operations.
• Although there is repeated identification of climate risks in the narrative reporting of the 2020 Annual Report (as well as the previous year's CSR Report and on the company's website), there is no apparent consideration given to climate risks in the consolidated financial statements nor the auditor's report.</td></tr>
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Background

<u>The Business</u>

- Formosa Petrochemical Corporation (FPCC) is primarily in the business of refining crude oil, selling refined petroleum products and producing and selling olefins (including ethylene and propylene) from its naphtha cracking operations. Domestic sales accounted for 68% of revenues in 2020 (and 55% in 2019), with most of the remainder sold to neighbouring markets in East Asia. By product type, the three largest for 2020 were petrochemicals (including ethylene and propylene) 31% of sales, diesel oil 21% and gasoline 14%. Ethylene and propylene are the two most important starting products in the petrochemical industry. Both have a number of uses, but the single largest use is for processing into polyethylene and polypropylene, two plastics with a wide variety of end uses.
- In addition to its oil refinery and naphtha cracking operations, FPCC also provides electricity, steam and other utilities products generated from its co-generation power plants to the plants within No. 6 Naphtha Cracker Complex. This accounts for approximately 7% of sales.
- FPCC is incorporated in Taiwan has been listed on the Taiwan Stock Exchange since 2003. The company was founded in 1992 for the purpose of constructing and operating Taiwan's first privately-owned petrochemicals complex, No. 6 Naphtha Cracker Complex. It was formed under joint control of Formosa Plastics and several other industrial groups, most of which retain significant stakes. Formosa Plastics retains 29%, Formosa Chemicals & Fibre 24%, Nan Ya Plastics 23% and Formosa Taffeta 4%. Chang Gung Medical Foundation owns 6% while the remaining 14% appears to be free float. Formosa Plastics and Formosa Chemicals & Fibre are also the largest two customers of the company, accounting for 20% and 16% of sales respectively in 2020.
- At the time of writing, the 2020 CSR Report had not yet been published in English. The 2019 Report published the emissions data for 2018 (as the 2019 data had not yet been verified), which saw 28.2 million tons of CO_2e, almost entirely Scope 1, with only 0.1 million tons CO_2e of Scope 2. There is no mention of Scope 3 emissions even though FPCC is a key part of the supply chain between producers of hydrocarbons and end consumers of refined products.
- FPCC faces material climate risks: primarily transition risks both due to the direct carbon emissions from its own operations and also the impact on demand for refined products. The

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[1] Updated September 2021 to consider Annual Report published after initial analytical work was undertaken.

main physical risk is from the impact of shifting weather patterns on water availability for operations.

Approach to climate change

- Following the framework of the "Corporate Social Responsibility Best Practice Principles" of the Taiwan Stock Exchange, Formosa Petrochems identifies climate change and greenhouse gas emissions management as two key topics for risk management, although it also refers back to the 2019 CSR Report for more specifics.
- This 2019 CSR Report included a framework for identifying basic risks (physical or transition) and sub-categories (e.g., acute or chronic, policies, technology, market, reputation) and type of impact and time-frame, as well as the responsible department for addressing each risk. The highest impact risks were identified as:
  - Decrease in rainfall, which could result in insufficient water for operations and reduce production capacity. The company has responded by establishing a desalination plant.
  - Compliance with the climate change policy with FPCC facing potential fines or suspension of operations if it does not reduce current carbon emissions. Taiwan has implemented the Greenhouse Gas Reduction and Management Act with the goal of reducing GHG emissions 20% by 2030 and 50% by 2050 (against a 2005 baseline), but it is not clear how, if at all, this translates into specific targets for the company.
- There was practically no discussion of the reduced demand for their end products, namely gasoline, diesel fuel and petrochemicals for plastics, in the face of tighter carbon emissions requirements through their supply chain. This must be a material risk facing the company but was not addressed.
- The main response of FPCC to transition risk is implementation of various energy efficiency measures, implementation of GHG offset project (recycling of water heat) and use of solid recycled fuel to reduce GHG emissions. Environmental Expenditures and Benefits totalled NT$17.4 billion (approximately US$600 million) in 2019 or 2.7% of revenues, but it is not clear how these are calculated with NT$15.4 billion of this categorized as "business overhead".

Accounting: judgements and consistency with other reporting

Accounting judgements		Significant concerns

- FPCC reports using IFRS Standards as endorsed by Taiwan's Financial Supervisory Commission (FSC). IFRS endorsed by the FSC are called the Traditional Chinese IFRS (TIFRS).[2]
- There is no reference in the notes to the financial statements that accounting judgements have been impacted by climate-related considerations.
- Climate risk may be expected to impact estimations of useful life of FPCC assets, which in turn would impact depreciation expense. Depreciation expense is already significant for FPCC, amounting to nearly NT$12.6 billion in 2020 against operating income of NT$2.8 billion (or compared to NT$36.8 billion in 2019 to exclude the effect of the pandemic). However, the depreciation disclosures lack sufficient transparency to make an informed assessment. Straight-line depreciation on buildings has a range of 25 stretching out to 55 years, while machinery and equipment (comprising nearly half of PP&E) has a wide range

[2] Taiwanese companies have a choice of using (a) IFRS Standards as endorsed by the Financial Supervisory Commission (FSC) or (b) with approval of the FSC, IFRS Standards as issued by the IASB. IFRS Standards as endorsed by the FSC differ from IFRS Standards as issued by the IASB Board because some options have been eliminated and the mandatory effective dates of some standards have been deferred beyond the effective dates adopted by the IASB. (https://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/view-jurisdiction/chinese-taipei/)

Stripes image credit: Prof. Ed Hawkins www.showyourstripes.info from 5 to 40 years. Moreover, since 2008, FPCC has instead used the fixed percentage-on-declining-base method on key assets but without any disclosures in the financial statements on the exact proportion of assets using this method or the fixed percentages applied.

Consistency with other reporting		Significant concerns

- Although the discussion of climate risks in the narrative reporting in the 2020 Annual Report is weak (referring back to the previous year's CSR Report for specifics), climate change and GHG emissions are clearly identified as key ESG risks for the company. Consequently, there is an inconsistency between the consolidated financial statements, which do not appear to consider climate in any way, and the other reporting.

Climate assumptions in accounts: visibility and Paris alignment

Visibility of climate assumptions in accounts		Significant concerns

- There are no apparent climate-related assumptions in the financial statements. There is thus no sensitivity analysis.

Paris alignment		Significant concerns

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

Audit: visibility in KAMs and consistency check

Audit firm: Ernst & Young	Responsible partners: Lin, Li Huang & Fuh, Wen Fun
Audit standards: Republic of China Generally Accepted Auditing Standards (ROC GAAS)	

Visibility in Key Audit Matters		Significant concerns

- There is no reference to climate change in the auditor's report.
- There are two KAMs identified: Revenue recognition and Valuation of inventories. Both KAMs were identified because of their materiality to the company, rather than any more specific concerns. Neither KAM relates to climate risk.
- The Auditor's Report states that the audits were conducted in accordance with the Regulations Governing Auditing and Attestation of Financial Statements by Certified Public Accountants and auditing standards generally accepted in the Republic of China.[3]

Consistency check		Significant concerns

- The apparent absence of any climate considerations in the audited financial statements is inconsistent with the identification of climate change and GHG emissions as key ESG risks in the narrative reporting. These climate risks – and this apparent inconsistency – are not mentioned in the auditor's report.

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.	Key	
		Good practice
		Few concerns
		Some concerns
		Significant concerns

[3] The Company Act requires all companies to have their annual financial statements audited following Republic of China Generally Accepted Auditing Standards (ROC GAAS), which converged with the 2016-17 International Standards on Auditing (ISA). (https://www.ifac.org/about-ifac/membership/country/chinese-taiwan)

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