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Refining & Marketing – Global

Location and complexity limit severity of carbon transition risk for most refiners

» **Most refiners not strongly positioned for transition to low-carbon future.** Our carbon transition assessments (CTAs) for the 24 refiners in our rated universe show a wide range of positioning for the companies in the sector from CT-4 to CT-8 on our 10-point CTA scale. The median score is CT-6, indicating moderate positioning for the carbon transition. Market exposure and complexity currently prevent refiners having poor positioning.

» **Component A – Current business profile: Energy intensity is high for many refiners but margins suggest resiliency.** Refineries developed to take in heavy oils from the Americas tend to have higher energy intensity. Administracion Nacional de Combustibles-ANCAP (Ba2 stable) and Formosa Petrochemical Corporation (A3 stable) have strong margins that are outliers, while many refiners have limited financial resilience.

» **Component B – Policy & Market risk: Decline in growth and increase in regulation tend to overlap.** Market and policy risk is determined by the location of a refiner. We aim to measure carbon pricing and regulation, which could eventually lead to financial hurdles for some refiners, especially as implementation of emissions trading schemes become prevalent. Because many refiners are located in emerging markets with stronger growth, they scored well for this metric. Only three refiners scored in the poor category for policy risk: ENEOS Holdings Inc. (Baa2 stable), Polski Koncern Naftowy ORLEN S.A. (PKN ORLEN, Baa2 positive) and Raffinerie Heide GmbH (Caa1 negative).

» **Component C – Medium-term response: Product mix provides carbon resilience for many refiners.** Middle distillates (excluding gasoline) are less affected by carbon transition in the medium term, and are among the most profitable products. Nearly our entire rated universe of R&M companies received the highest score possible for this subcomponent. We also measure exposure to petrochemicals because they are expected to be a driver of growth for the next few years. ANCAP scored the highest for this subcomponent, with seven issuers receiving the lowest score.

» **Component D – Long-term resilience: Risk of exposure to rapid carbon transition scenario remains high for many refineries.** The final component of our CTA framework for refiners – long-term exposure to a rapid carbon transition scenario as envisioned under the International Energy Agency's (IEA) Sustainable Development Scenario (SDS) – shows how the least complex refineries in most regions are more vulnerable. Operators in India are at least risk of having uneconomic refineries, while the lowest scoring issuers are Turkiye Petrol Rafinerileri A.S. (Tupras, B2 negative) and Par Petroleum LLC (B1 negative).

Most refiners not strongly positioned for transition to lower-carbon future

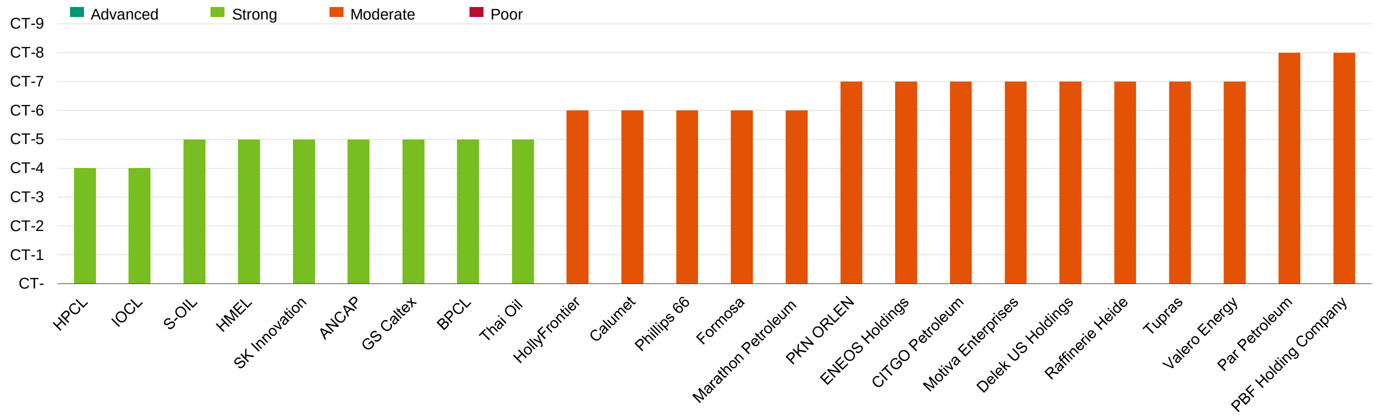
Most refining and marketing (R&M) companies are not strongly positioned for the transition to a low-carbon future, given that their core business is producing and selling refined petroleum products. However product mix or geographic location tend to mitigate some of the risk for most refiners. The median score of the 24 refiners that we scored in this report was CT-6, indicating moderate positioning for carbon transition on our CTA scale, where CT-1 shows the most advanced positioning and CT-10 the poorest. While nearly two-thirds of the companies covered in this report fell within the moderate scoring band, nine companies received scores indicating strong positioning. We do not currently consider the sector consistent with the Advanced scores of CT-1 and CT-2.

Scores ranged between CT-4 and CT-8, reflecting the fact that the industry as a whole is not strongly positioned for a low-carbon future. At the same time, the concentration of the overall scores obscures a greater level of diversity in the subcomponent scores of our carbon transition analysis. For example, there is greater variability in current product mix, policy exposure and near-term management actions than is evident in the overall CTA scores of these companies. Refer to the appendix on page 12 for the complete scores.

Exhibit 1

All scores range within strong and moderate categories

Carbon transition assessment (CTA) scores for refining and marketing companies



Source: Moody's Investors Service

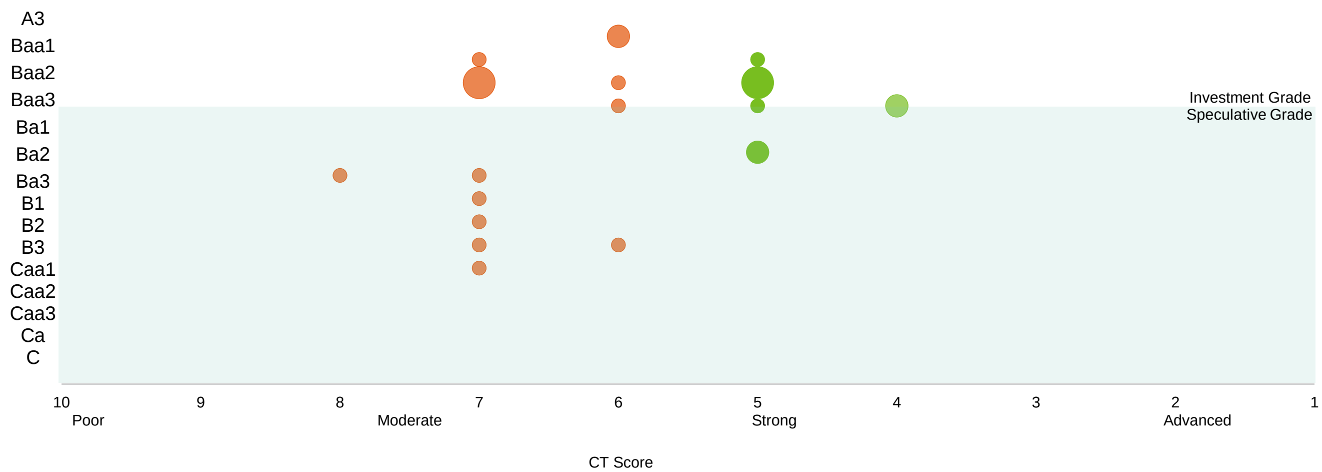
While refiners are in a position to make material changes to strengthen their resilience to a carbon transition, the next three to five years could prove difficult as regulations increase and consumer demand shifts. Three of the highest-scoring companies – Hindustan Petroleum Corporation Ltd. (HPCL, Baa3 negative), Indian Oil Corporation Ltd (IOCL, Baa3 negative) and S-Oil Corporation (Baa2 stable) – are all located in Asia, a region that generally benefits from limited regulation and increasing demand from strong economic growth. In addition, all three companies have the capacity to produce products that are likely to be resilient during the carbon transition.

All but two companies with strong CTA scores have investment-grade ratings, while the lowest-scoring companies are mostly speculative grade, as shown in Exhibit 2. However, there is not a linear relationship between CTA scores and credit ratings, because carbon transition risk is just one of many considerations that inform our credit analysis and the weight that should be placed on transition risk will vary by issuer. Companies will improve their creditworthiness if they address carbon transition when it presents a material risk.

Exhibit 2

Strong CTA scores correlate with higher credit ratings

Long-term credit ratings and CTA scores for refining and marketing companies



Source: Moody's Investors Service

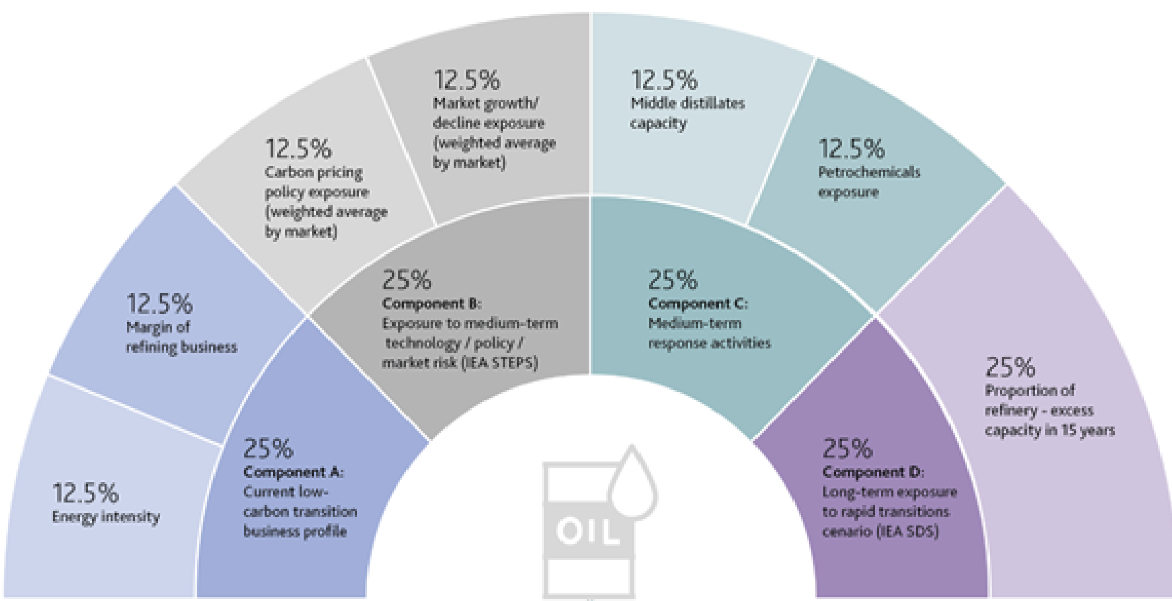
This analysis is our second in a series of reports in which we score individual companies on the basis of their exposure to carbon transition risk (see "Automotive manufacturing – Global: Substantial variation exists in automakers'carbon transition risk profiles"). We are calculating the scores through the use of our carbon transition assessment (CTA) framework for refining and marketing companies. We plan to publish CTA frameworks and scores for other non-financial corporate sectors as well.

This report focuses solely on companies that fall under our refining and marketing industry methodology. However, the framework applies to any refining business, including those that are part of companies that are rated under our integrated oil and gas methodology. We will publish those companies' CTA scores in a separate report with their upstream scores. As illustrated in Exhibit 3, our CTA framework is comprised of four equally weighted components.

Exhibit 3

Factors we consider when assessing carbon transition risk for refiners

Components and weightings of our CTA framework for refining and marketing companies



Source: Moody's Investors Service

Component A considers the current business profile of the issuer; Components B and C look at the medium-term risks and opportunities by assessing exposure to technology, market and policy risks and the corporate response to these risks; and Component D considers a company's long-term resilience to a low-carbon transition by looking out over a 15-year horizon.

Our CTA framework for R&M companies is based on our general CTA framework for non-financial companies (see "Non-financial companies – Global: Framework to assess carbon transition risk for corporate sectors"), with subcomponents tailored to the refining and marketing sector.

As in the case with our 10-point CTA scoring scale, our component and subcomponent scores are structured so that the lower the number, the stronger the positioning. For the sake of clarity, we have also translated these numerical scores into positioning categories of advanced (dark green), strong (light green), moderate (orange) and poor (red). The overall CTA scores are also grouped into the same four categories as shown, with CT-1 and CT-2 categorised as advanced, CT-3, CT-4 and CT-5 as strong, CT-6, CT-7 and CT-8 as moderate, and CT-9 and CT-10 as poor (see Exhibit 4). Because the R&M business involves the conversion of fossil fuels into hydrocarbon products, no company in the sector will be positioned to benefit from the low-carbon transition. As a result, instead of the normal 1.0 to 4.0 scoring range for each subcomponent, we have capped each subcomponent score at 1.6, which prevents any R&M company from receiving a CTA score within the advanced scoring band.

Exhibit 4
Summary of our carbon transition assessment (CTA) score categories and descriptions

ADVANCED	CT	1	1.00 – 1.30	Issuers exhibit "advanced" positioning for the carbon transition. They typically have a business model that benefits from the transition to a low carbon economy.
		2	1.31 – 1.60	
STRONG	CT	3	1.61 – 1.90	Issuers exhibit "strong" positioning for the carbon transition. They either have a business model that is not expected to be materially affected by the carbon transition, or have strategies and plans in place that substantially mitigate their carbon transition exposure.
		4	1.91 – 2.20	
		5	2.21 – 2.50	
MODERATE	CT	6	2.51 – 2.80	Issuers exhibit "moderate" positioning for the carbon transition. They have a material exposure to carbon transition risks and their relative positioning within this category is determined by variations in their degree of exposure to carbon risks, medium term management actions and long-term resilience.
		7	2.81 – 3.10	
		8	3.11 – 3.40	
POOR	CT	9	3.41 – 3.70	Issuers exhibit "poor" positioning for the carbon transition. They typically have business models that are fundamentally inconsistent, over the long-term, with the transition to a low carbon economy.
		10	3.71 – 4.00	

Source: Moody's Investors Service

Given inconsistent company disclosures about carbon transition risks, our framework augments company disclosures with refining industry-specific, third-party data sources for our analysis – the annual PennWell survey, governmental sources, Moody's Financial Metrics, and the IEA. Data sources, scenarios and reference points will continue to be reviewed to ensure that the best data available is being used. CTAs will not use material non-public information from issuers.

Component A: Current low-carbon transition business profile

Energy intensity remains high for many refiners but margins provide resiliency for some

The first component of our refining CTA framework examines a company's current business profile as it pertains to its low-carbon transition. It includes subcomponents that assess a company's energy intensity and profitability. While several R&M companies score well on energy intensity because they are not set up to convert heavy oils, most refiners have energy intense operations that are reflected in the scores. In this cyclical industry, margins obviously shift with the cost of inputs and prices achieved for different product groups. Margin per barrel is a core element of the R&M rating methodology, with many operators having low profitability, limiting their ability to absorb shocks.

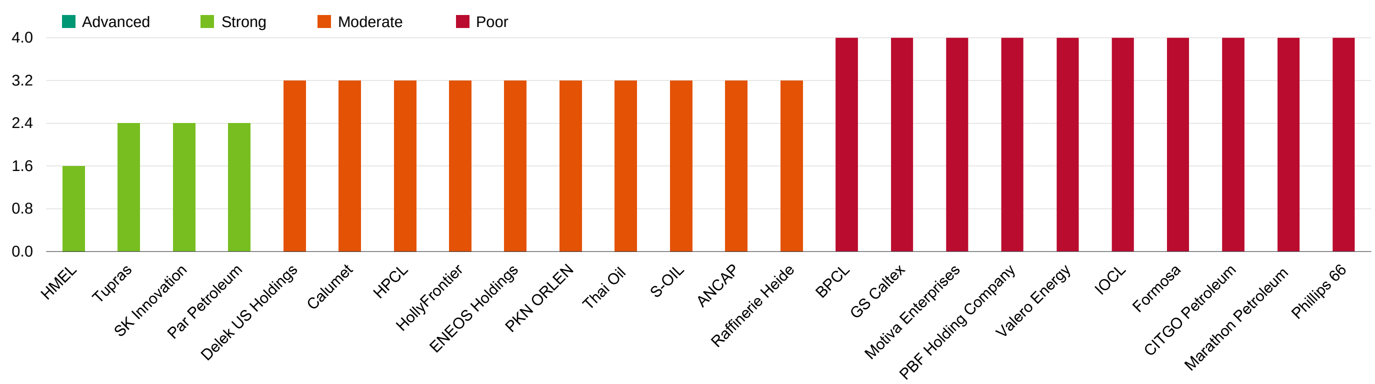
Energy consumption: Companies with higher energy consumption per barrel are likely to generate both higher emissions and costs, which present a credit risk during the energy transition. Because data on a refinery-level energy consumption is hard to source, we use the bottom of the barrel (BoB) index as a proxy measurement of the energy intensity of refinery operations, which has been shown to correlate directly with the heaviness of crudes processed. Most of our rated universe of R&M companies has energy-intense operations. While the ability to refine diverse products associated with a high BoB score could enhance revenue, it is likely to increase energy costs.

Only four issuers scored higher than the moderate category: HPCL-Mittal, SK Innovation Co. Ltd. (Baa2 negative), Par Petroleum and Tupras, of which only Par Petroleum has refineries that are located in the Americas or Europe (see Exhibit 5). US refineries are generally more complex than refineries elsewhere given their proximity to lower-cost, heavy crudes from countries like Canada, Mexico and Venezuela. As a result, only four of the 11 issuers located in the US received a score better than a 4.0 for the energy consumption metric.

Exhibit 5

Refineries in the Americas score poorly because of the regional supply of heavy oil

Our scoring of CTA subcomponent assessing energy consumption of refineries in 2019



Source: Moody's Investors Service

Margin of refining business: This subcomponent establishes whether a company's refining business already has a strong level of profitability that would enable it to be resilient to changes in the market, providing a benchmark for the financial profitability of the company to changing demand and market conditions. This metric is exposed to inherent cyclicality and volatility, capital intensity and environmental and legal risks.

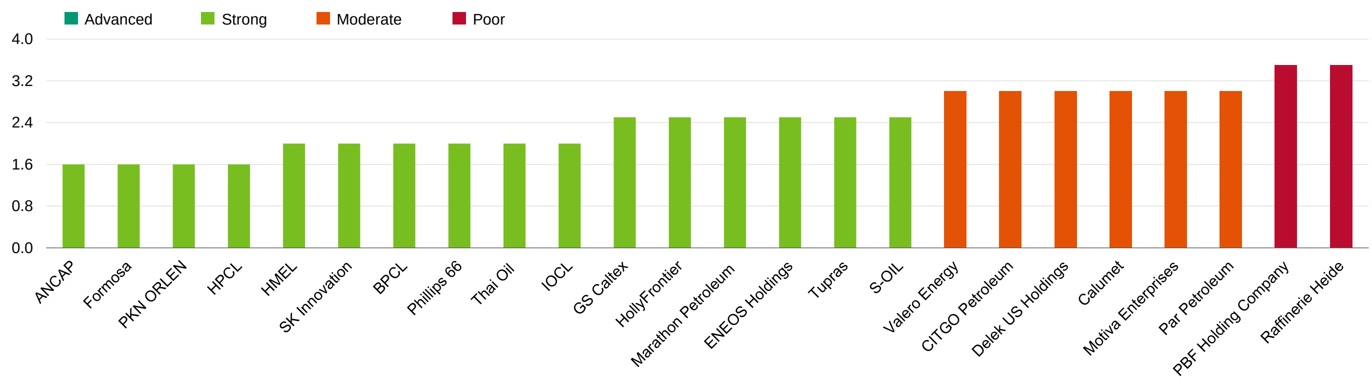
Many companies in the broader energy industry will see depressed fiscal 2020 financial metrics as a result of weak demand and prices associated with the coronavirus pandemic, which will hurt CTA scores next year. Because the subcomponent is based on a three-year average to prevent volatility, the following year's scores will be buffered by the prior two years of performance. Looking forward we expect the COVID pandemic could accelerate the transition to lower carbon consumption, which may place further pressure on margins, (see "ESG – Global: COVID effects likely to accelerate the energy transition").

There is greater variation in the scores for this subcomponent than for energy intensity. However, the strongest companies were again located outside of North America and Europe, with the exception of PKN ORLEN (see Exhibit 6). ANCAP and Formosa Petrochemical have strong margins, which are outliers in the refining group, even in the strong category which excluding the two has an average EBIT to Total Throughput of $6.40/bbl. With three-year average refining margins of EBIT to total throughput ratio of $13.50/bbl and $11.70/bbl respectively, their scores are reflective of what we would expect a strong integrated company to have as they benefit from economies of scale. Both companies benefit from strong, monopoly positions and have efficient operations. Formosa Petrochemical is able to operate like a global company and benefits from a fully integrated business model, while ANCAP has had strong expense management and support from the government toward fuel price adjustments, which guarantees a minimum margin.

Exhibit 6

Moderate and poor scores equate to low resilience from margins less than $4/bbl

Our scoring of CTA subcomponent assessing three-year average refining margins



Source: Moody's Investors Service

Component B: Medium-term exposure to technology/market/policy risk

Decline in growth and increase in regulation tend to overlap

Our analysis of Component B focuses on market and policy risk, which is determined by the location of a refiner. We aim to reflect carbon pricing and fuel standards regulation, which could eventually lead to financial hurdles for some refiners, especially as implementation of carbon pricing schemes become prevalent. Our considerations are based on policies and technology we have visibility of, which is equivalent to the IEA's Stated Policies Scenario (STEPS). Regions experiencing high growth in demand for refined products also provide some mitigation for carbon transition risk.

Carbon pricing policy exposure (weighted average by market): Generally, pure refining companies score well in this subcomponent because they can have operations concentrated in areas with limited policy constraints. Consequently, the distribution of scores breaks down into three groups, the largest of which are those with operations in a single, low-regulation domicile, followed by those with diversified global operations and those with operations in a single, high-regulation domicile. Refiners in developed markets generally receive weak scores for carbon pricing policy exposure, except those in the US, which has a fragmented regulatory environment. Some markets are also starting to incorporate environmental objectives into fuel standards and taxation.

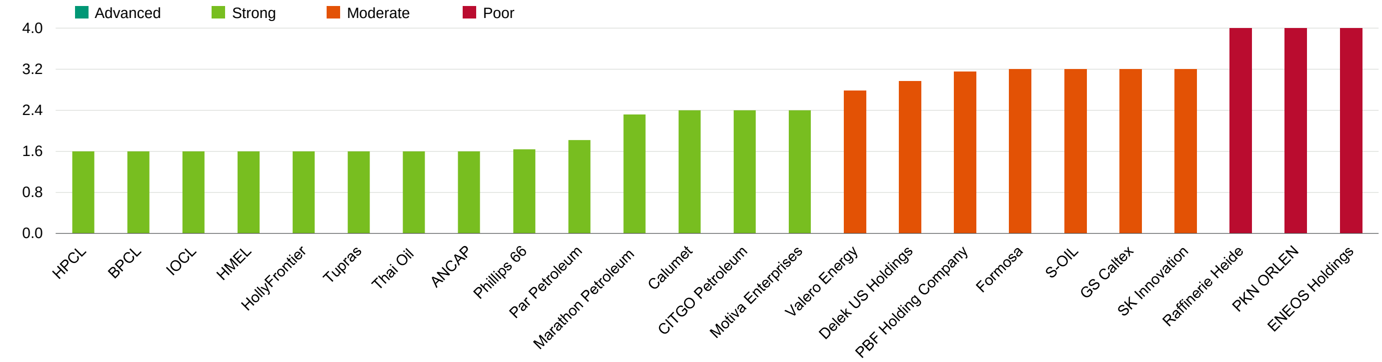
The existence of an EU-based emissions trading scheme (ETS) means that companies with refineries concentrated in Europe have weaker scores for this subcomponent. Within the US, we see some variation, depending on the state regulatory environment. For example, HollyFrontier Corp. (Baa3 negative) and Valero Energy Corporation (Baa2 negative) are both US companies, but because Valero has refineries in California, Canada and the EU, it does not score as well. As emissions trading schemes become more prevalent, we expect more operators to have increased exposure to policy risk.

All of the Indian refiners benefit from a favourable regulatory environment and scored the highest value possible. Only three refiners scored 4.0: ENEOS, PKN ORLEN and Raffinerie Heide. Most issuers faced some level of regulation and were at best moderately positioned (see Exhibit 7). As more countries contemplate the addition of ETS, or restructure fuel taxes, many issuers that are currently moderately positioned will face increased carbon transition risk.

Exhibit 7

European refiners receive weak scores because of the EU's emissions trading scheme

Our scoring of CTA subcomponent assessing policy exposure weighted by refinery capacity and domicile



Source: Moody's Investors Service

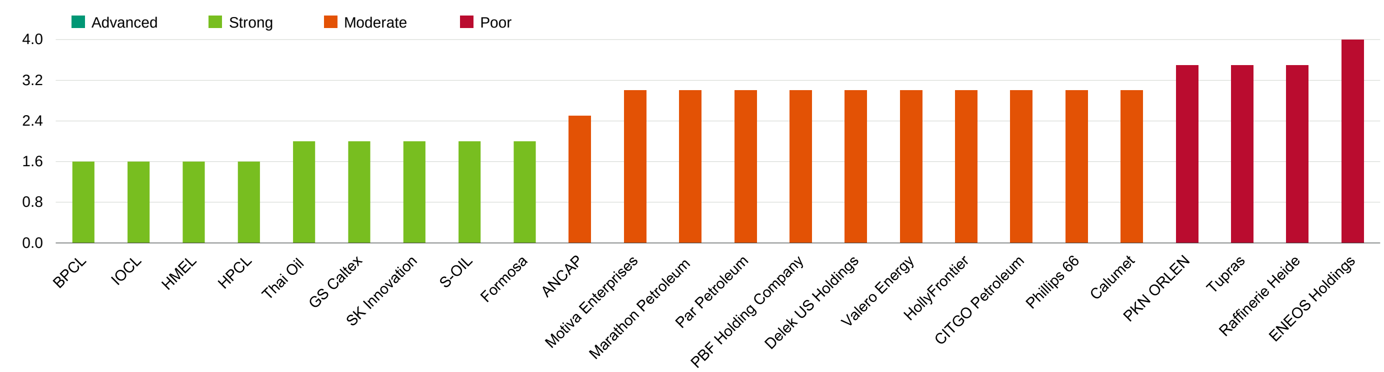
Market exposure – regional demand: This subcomponent scores the change in demand of each region at a refinery level. The framework reflects different growth profiles around the world, although we recognise that some refineries have a much more localised market than those that are positioned for export. Refineries in regions with little demand growth, or a contraction in demand, can see their products displaced. The inverse is also true. Regional growth can lead to additional demand for the products produced by refineries in that region. As a result, having refineries that are able to serve their local markets will allow companies to remain competitive on a relative basis as global market conditions dampen.

Refiners tend to have amalgamated operations in a single country, which means that most issuers' market risk scores are tied to changes in demand in their region. While this can be a good thing for some issuers, for others, it represents a concentration of risk. ENEOS is Japan's largest refiner, so it has limited potential for domestic growth. Because of excess capacity, European refineries tend to have lower utilization rates than their counterparts in other regions. As shown in Exhibit 8, PKN ORLEN and Raffinerie Heide both score almost as poorly as ENEOS, because of limited opportunities for growth. Both Poland and Germany are scored within the European Union, but some countries, particularly in Eastern Europe, are projected to fare slightly better than the EU as a group, although their growth is still not projected to be as strong as emerging market economies.

Exhibit 8

Refiners with exposure to Africa, China, India and Southeast Asia are strongly positioned

Our scoring of CTA subcomponent assessing regional demand growth in the medium term



Source: Moody's Investors Service

Component C: Assessing medium-term response activities

Alternative end products support carbon resilience for many refiners

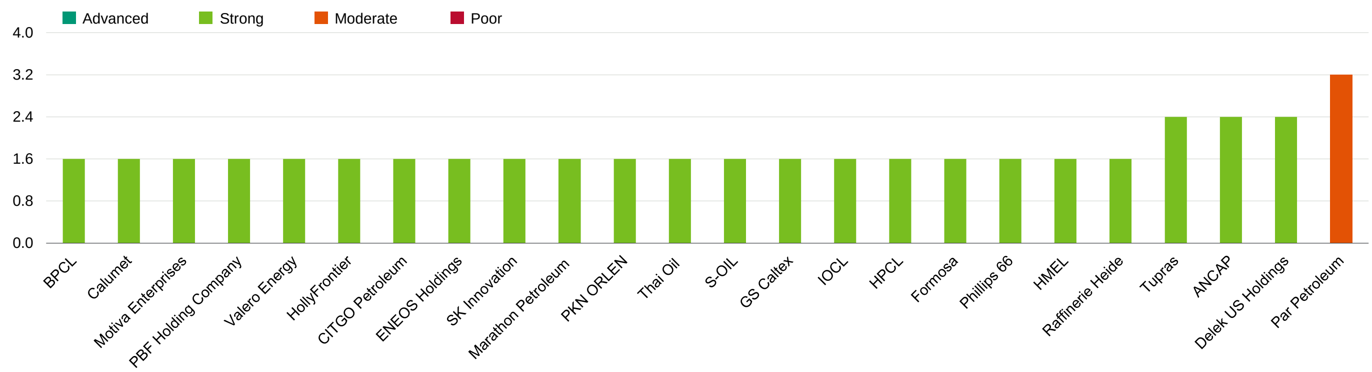
This component aims to capture the ways in which a refining company could alter its business profile in order to benefit from the energy transition, or at least reduce the risk. Middle distillates (excluding gasoline), which are less affected by carbon transition in the medium term, are cleaner than the end products produced by coking or fluid catalytic cracking and are among the most profitable products. Similarly, we measure exposure to petrochemicals, which are likely to be a driver of growth in the next few years, unlike other oil-based products.

Middle distillates capacity: As shown in Exhibit 9, nearly our entire rated universe of R&M companies received the highest score possible in this category, which reflects the strong positioning Moody's rated pure refiners relative to the global refining industry. ENEOS and CITGO Petroleum Corporation (B3 stable) both have over 70% of this type of capacity. The average hydrocracking capacity for this group is 55%, indicating that the wider group is able to meet the minimum threshold for the strongest positioning (the upper quartile of capacity globally).

Exhibit 9

Most of our rated universe scores strongly for this subcomponent

Our scoring of CTA subcomponent assessing refiners capacity to refine middle distillates



Source: Moody's Investors Service

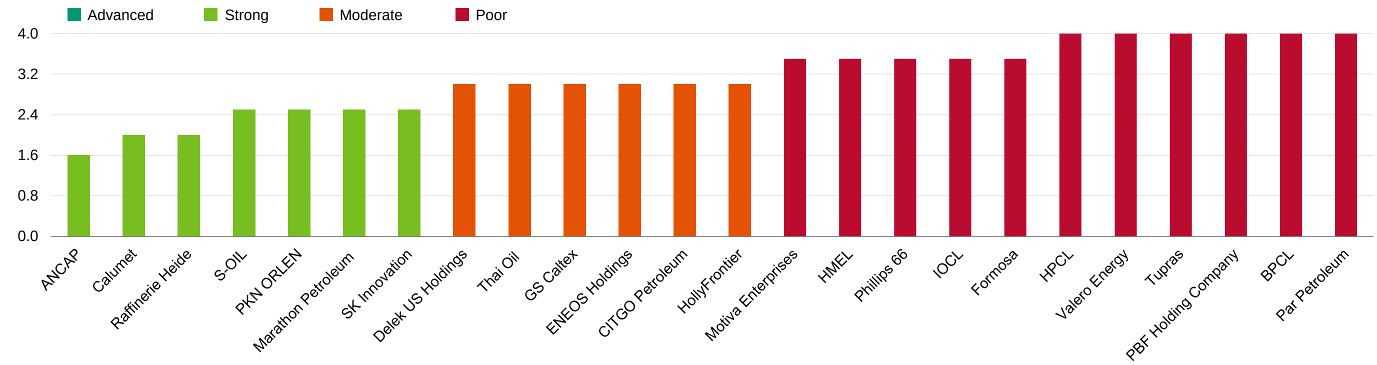
Petrochemicals exposure: Petrochemicals are another valuable family of products to refine. We expect them to be a potential driver of demand growth because they are sheltered from exposure to carbon transition. Economic growth is likely to increase demand because plastics have many uses, although opposition to the marine pollution caused by single-use plastics may temper some of this. This product group is not exposed to carbon policy because the end product is not combustible.

Petrochemical scores are generally evenly distributed among R&M companies (see Exhibit 10). These scores reflect where operators are investing in petrochemicals capacity, with North American and European refiners scoring generally better than their Indian counterparts, unlike in other subcomponents. These scores could change over time as refiners need to meet demand and subsequently increase their complexity. But doing so will require capital investment and impact margins. New capacity additions in Asia are likely to increase petrochemical production; conversely, in the US, natural gas liquids (NGLs) from shale are able to be used as petrochemical feedstock, which bypasses refineries.

Exhibit 10

There is a broad spread of positioning for petrochemicals exposure

Our scoring of CTA subcomponent assessing proportion of petrochemicals as refined products



Source: Moody's Investors Service

Component D: Assessing long-term exposure to rapid transition scenario

Risk to SDS exposure remains high for many refineries

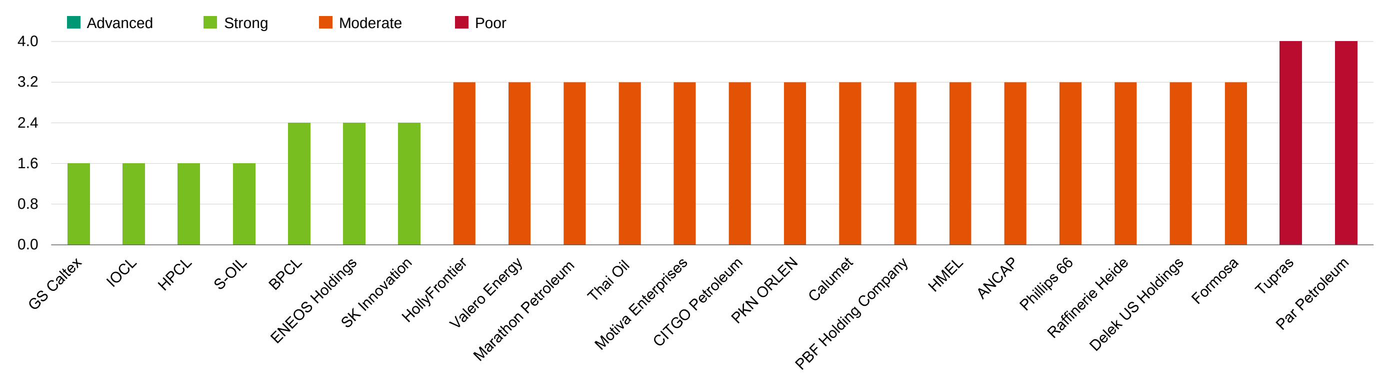
The final component of our CTA framework for refiners – long-term exposure to a rapid carbon transition scenario as envisioned under the IEA's Sustainable Development Scenario (SDS) – shows a degree of variance among the companies in our sample group. The sole subcomponent of Component D assesses the expected level of excess capacity under the SDS scenario by region. Because different regions will experience different growth trajectories, some markets already have enough capacity to meet future SDS demand. We rank refineries by complexity in each region to identify those that are at risk.

Companies scoring a 2.4 or lower for strong positioning here have a portfolio of refineries that would be well-positioned under the IEA SDS. Those scoring a 3.0 for moderate positioning are more aligned with the IEA STEPS level of capacity. Most refiners score greater than 3.0 because their refineries are not as competitive when compared to integrated issuers (see exhibit 11). This indicates that in an SDS scenario, which is now more likely because of the accelerating carbon transition, many companies would be exposed to the risk of having to shut down uneconomical refineries, or continue running them at a loss with low utilisation.

Exhibit 11

Seven companies would be well-positioned for an accelerated transition to a low-carbon economy

Our scoring of CTA subcomponent assessing risk of refinery closure under the SDS scenario



Source: Moody's Investors Service

While poorly scoring Par Petroleum has less complex refineries compared to its competitors, we note that much of its capacity is located in Hawaii, which has already rationalised refining capacity and has specific needs as a remote island. National oil companies –

such as PKN ORLEN, which has support from the Polish government – may decide to continue operating refineries in order to maintain control of domestic fuel supplies, which would only exacerbate overcapacity and margin pressure in this scenario.

Indian and African refineries stand out in this component because they will remain operational no matter the scenario or complexity. Even under SDS, there will be continuing demand in these two regions. As such, no Indian refineries are at risk under a rapid transition scenario.

Appendix

Exhibit 12

Carbon transition assessment (CTA) scores for our sample group of 24 refining and marketing companies

				Component A: Current low-carbon transition business profile			Component B: Medium-term exposure to technology/market/policy risk			Component C: Assessing medium-term response activities			Component D: Assessing long-term exposure to rapid transition scenario	
Issuer	LT Rating	CTA Score	Overall Score	Energy intensity Score	Margin of refining business Score	Component A	Policy risk Score	Market risk Score	Component B	Middle distillates capacity Score	Petrochemicals capacity Score	Component C	SDS Exposure Score	Component D
Hindustan Petroleum Corporation Ltd.	Baa3	CT-4	2.10	3.20	1.60	2.40	1.60	1.60	1.60	1.60	4.00	2.80	1.60	1.60
Indian Oil Corporation Ltd	Baa3	CT-4	2.19	4.00	2.00	3.00	1.60	1.60	1.60	1.60	3.50	2.55	1.60	1.60
S-OIL Corporation	Baa2	CT-5	2.28	3.20	2.50	2.85	3.20	2.00	2.60	1.60	2.50	2.05	1.60	1.60
HPCL-Mittal Energy Limited	Ba2	CT-5	2.29	1.60	2.00	1.80	1.60	1.60	1.60	1.60	3.50	2.55	3.20	3.20
SK Innovation Co. Ltd.	Baa2	CT-5	2.31	2.40	2.00	2.20	3.20	2.00	2.60	1.60	2.50	2.05	2.40	2.40
Administracion Nacional de Combustibles-ANCAP	Ba2	CT-5	2.41	3.20	1.60	2.40	1.60	2.50	2.05	2.40	1.60	2.00	3.20	3.20
GS Caltex Corporation	Baa1	CT-5	2.44	4.00	2.50	3.25	3.20	2.00	2.60	1.60	3.00	2.30	1.60	1.60
Bharat Petroleum Corporation Limited	Baa3	CT-5	2.45	4.00	2.00	3.00	1.60	1.60	1.60	1.60	4.00	2.80	2.40	2.40
Thai Oil Public Company Limited	Baa2	CT-5	2.48	3.20	2.00	2.60	1.60	2.00	1.80	1.60	3.00	2.30	3.20	3.20
HollyFrontier Corp.	Baa3	CT-6	2.66	3.20	2.50	2.85	1.60	3.00	2.30	1.60	3.00	2.30	3.20	3.20
Calumet Specialty Products Partners, L.P.	B3	CT-6	2.70	3.20	3.00	3.10	2.40	3.00	2.70	1.60	2.00	1.80	3.20	3.20
Phillips 66	A3	CT-6	2.77	4.00	2.00	3.00	1.64	3.00	2.32	1.60	3.50	2.55	3.20	3.20
Formosa Petrochemical Corporation	A3	CT-6	2.79	4.00	1.60	2.80	3.20	2.00	2.60	1.60	3.50	2.55	3.20	3.20
Marathon Petroleum Corporation	Baa2	CT-6	2.79	4.00	2.50	3.25	2.32	3.00	2.66	1.60	2.50	2.05	3.20	3.20
Polski Koncern Naftowy ORLEN S.A.	Baa2	CT-7	2.85	3.20	1.60	2.40	4.00	3.50	3.75	1.60	2.50	2.05	3.20	3.20
ENEOS Holdings Inc.	Baa2	CT-7	2.89	3.20	2.50	2.85	4.00	4.00	4.00	1.60	3.00	2.30	2.40	2.40
CITGO Petroleum Corporation	B3	CT-7	2.93	4.00	3.00	3.50	2.40	3.00	2.70	1.60	3.00	2.30	3.20	3.20
Motiva Enterprises LLC	Baa1	CT-7	2.99	4.00	3.00	3.50	2.40	3.00	2.70	1.60	3.50	2.55	3.20	3.20
Delek US Holdings Inc.	Ba3	CT-7	3.00	3.20	3.00	3.10	2.97	3.00	2.99	2.40	3.00	2.70	3.20	3.20
Raffinerie Heide GmbH	Caa1	CT-7	3.03	3.20	3.50	3.35	4.00	3.50	3.75	1.60	2.00	1.80	3.20	3.20
Turkiye Petrol Rafinerileri A.S.	B2	CT-7	3.05	2.40	2.50	2.45	1.60	3.50	2.55	2.40	4.00	3.20	4.00	4.00
Valero Energy Corporation	Baa2	CT-7	3.10	4.00	3.00	3.50	2.78	3.00	2.89	1.60	4.00	2.80	3.20	3.20
Par Petroleum LLC	B1	CT-8	3.18	2.40	3.00	2.70	1.82	3.00	2.41	3.20	4.00	3.60	4.00	4.00
PBF Holding Company LLC	Ba3	CT-8	3.21	4.00	3.50	3.75	3.15	3.00	3.08	1.60	4.00	2.80	3.20	3.20

Score legend

Strong Moderate Poor

Component/subcomponent scores are based on a four-point scale. The overall score, which is the sum of the four, equally weighted component scores, is then mapped to the 10-point CTA scale. The four categories of positioning (advanced, strong, moderate, poor), which are defined in Exhibit 2, are colour-coded and are applied in the scoring of each subcomponent, component and overall CTA score.

Source: Moody's Investors Service

Moody's related publications

Non-Credit Rating Assessment Framework

- Refining and Marketing – Global: Carbon transition assessment framework for refining and marketing companies, 10 July 2020
- Non-financial companies – Global Framework to assess carbon transition risk for corporate sectors, 24 September 2019

Sector In-Depth

- Refining & marketing - Asia: Coronavirus will exacerbate oversupply and keep refining margins weak, 1 September 2020
- Oil & Gas – Global: FAQ on how carbon transition risk informs our credit views on the sector, 24 August 2020
- Refining and Marketing – Global Weak demand for refined products will weigh on earnings through at least 2020, 26 March 2020
- Refining & Marketing – Global: Distillate fundamentals will support robust earnings growth through at least 2020, 30 September 2019
- Integrated Oil & Gas – Global Majors pursue energy-transition strategies with shifts in product offerings, investment, 30 September 2019
- Cross-Sector - Global Frequently asked investor questions about environmental, social and governance issues, 5 March 2019
- Environmental Risks – Global: Heat map: 11 sectors with $2.2 trillion debt have elevated environmental risk exposure, 25 September 2018

Cross-Sector Rating Methodology

- General Principles for Assessing Environmental, Social and Governance Risks, 9 January 2019

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moodys.com for the most updated credit rating action information and rating history.

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