

# Asia-Pacific Lags Global Oil and Gas Industry in Shift From Carbon

Region's O&G Players and Financiers Failing to  
Keep Pace in Net-zero Transition Landscape

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## Key Findings

**The Asia-Pacific region supplies 10%-15% of global oil and gas needs, and at the same time it is the largest and second largest consumer of oil and gas respectively, creating opportunities for the adoption of alternative energy sources.**

**Most O&G firms in APAC lack detailed plans to decarbonize and adopt a wait-and-see approach to new energy.**

**The low gearing of big O&G players leaves shareholders, rather than lenders, with more say in the sector going green.**

**China and India both hold potential for leading APAC in the global transition from fossil fuels in light of the size and profile of their economies and their lion's share of O&G sector borrowing, of about US\$280 billion between them.**





## Executive Summary

Climate and environmental considerations are increasingly a key component of investment decision-making. Not just by corporates but by the financial sector, too. So much so that most of the world's major banks and institutional investors have policies to exit or lessen their exposure to coal.<sup>1</sup>

Oil and gas – fossil fuels that release carbon when combusted and, in turn, contributes to climate change – are likely to be the next commodities affected by the financing sector's focus on “greening” their balance sheets.

This paper aims to understand the current sources of finance utilized by the Asia-Pacific (APAC) region's major oil and gas (O&G) producers, how this may change in the near future as investors and lenders double down on their own net-zero targets, and whether regional O&G companies have started any meaningful efforts toward establishing their own net-zero commitments and implementation pathways.

The paper delves into upstream exploration and production activities within the O&G sector due to their integral role in the supply and price-setting of these commodities. The O&G-producing economies in Asia-Pacific that have been included within this analysis are Australia, Bangladesh, Brunei, China, Hong Kong, India, Indonesia, Japan, Malaysia, Myanmar, Pakistan, Papua New Guinea, Singapore, South Korea, Taiwan, Thailand and Vietnam.

A summary of our findings is as follows.

In terms of APAC oil production, China, India and Indonesia are the largest. Regional output over the decade up to 2021 declined at 1.2% per annum. On gas production, China, Australia, Malaysia and Indonesia are APAC's biggest. The same decade saw a 3.1% per-annum increase in APAC production, with India, China, Australia and Pakistan in particular exceeding their 2019 levels in 2021.

O&G companies in APAC have begun setting net-zero targets and revenue diversification strategies. Most of them are at the early stages of decarbonization and do not have detailed implementation plans. In terms of investing in new energy technologies, many are adopting a wait-and-see approach, thus lagging behind global peers.

Company filings indicate that O&G companies on average are more reliant on equity than debt financing as a critical source of capital. Debt-to-total capital ratios are at around 32% across aggregate data on 259 O&G companies for which financial information was obtained.

Larger players exhibit high debt balances but more moderate gearing levels than their smaller peers.

The data also demonstrates that highly geared companies are an anomaly in the O&G space – further backing up the observation of a general reliance on equity finance by the sector. They make up just 14 of the 259 in the data set. Such companies are generally smaller, with an average

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<sup>1</sup> Institute for Energy Economics and Financial Analysis (IEEFA). [200 and counting: Global financial institutions are exiting coal](#). Trivedi and Srivastava. May 4, 2023.

outstanding debt balance of US\$820 million compared to the sector average of US\$2.2 billion. They are concentrated in China and Indonesia, which are home to 11 of the 14 most highly geared companies.

Debt capital is mostly concentrated in just 27 out of the 259 entities. These 27 together represent 80% of the debt market for O&G in the region and are mainly based in China (including Hong Kong) and India, with about US\$280 billion in O&G indebtedness between them.

Looking forward, APAC features prominently in the O&G sector's expansion plans. Companies headquartered or planning an expansion in the region make up almost half of the list of top 50 companies worldwide by planned capacity expansion.

Six regional companies were identified under the combined criteria of high outstanding borrowings and significant investment plans for O&G production growth:

- China National Offshore Oil Corporation (CNOOC) Limited, China
- Woodside Energy Group, Australia
- China Petroleum & Chemical Corporation (Sinopec), China
- PetroChina Company Limited, China
- Oil and Natural Gas Corporation, India
- Santos Limited, Australia

They present a shortlist of companies which would need to establish more robust decarbonization plans in order to ensure continuing support from lenders, given the increasing focus of financial institutions on the carbon footprint of their own operations, including those of their investees, borrowers and clients.

While these companies do not have high leverage levels, the data shows an overwhelming use of bonds as a source of debt capital – the aggregate borrowing of the six companies is made up of 91% bond finance and 9% bank loans.

Lenders and bond investors based in China (including Hong Kong) and India account for around two-thirds of the debt capital utilized by the top 27 borrowers. Significant changes in lending and investing practices are necessary for these institutions to align with the national net-zero targets of their home countries. If they are members of the Glasgow Financial Alliance for Net Zero (GFANZ), changes are also necessary to fulfill obligations of the group. Member organizations are committed to aligning their lending and investment portfolios with net-zero emissions by 2050, and with intermediate targets for 2030 or sooner using robust, science-based guidelines. These goals cover all operations of the firms, not just capital provision.

GFANZ lacks membership representation from China and India. However, as GFANZ membership grows in the coming years, capital raising for O&G businesses will get harder as more financiers take up the net-zero cause.

## Oil and Gas Market Overview

### Global Oil Market

*APAC holds 3% of the world's proven oil reserves but comprises 8.2% of global production. China is the fifth largest oil-producing nation worldwide. Global production over the decade up to 2021 declined at 0.7% per annum.*

#### **APAC's Share of Global Oil Production**

According to the 2022 BP Statistical Review of World Energy,<sup>2</sup> global oil output reached 89,877 thousand barrels per day (kbpd) in 2021, down 5.4% from its 2019 high of 94,916 kbpd. The primary driver for this reduction was the Covid-19 pandemic, which both lowered oil demand across the transportation sector and affected supply due to localized lockdowns.

The top oil-producing regions are:

- Middle East, 31.3%
- North America, 26.6%
- Commonwealth of Independent States (CIS), comprising ex-Soviet states, 15.4%
- APAC, 8.2%

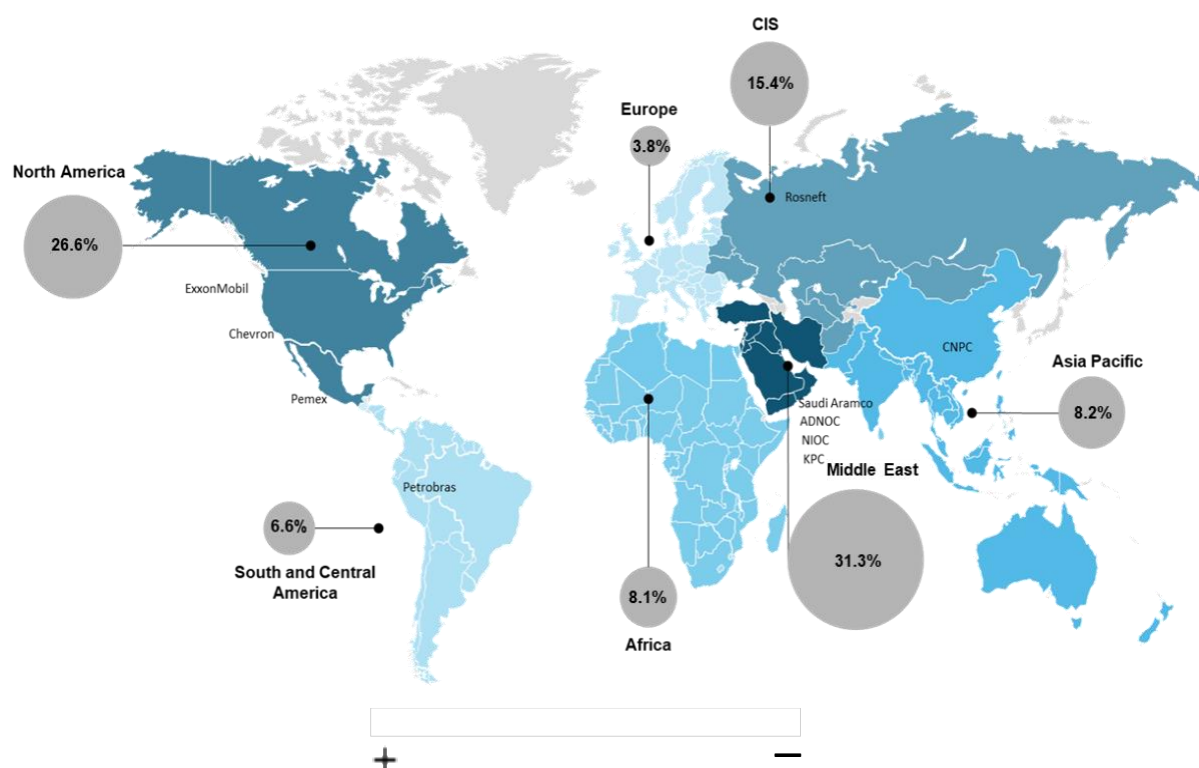
North America had the largest growth in production from 2011-2021, increasing 5.3% per annum. APAC, the focus of this paper, accounted for 8.2% of global oil production with 7,335 kbpd in 2021.

Overall, global output declined at a consistent rate of 0.7% per annum between 2011 and 2021. This is also consistent across all major producing countries in APAC.

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<sup>2</sup> BP. [2022 Statistical Review of World Energy Workbook](#). June 2022.

Figure 1: Global Oil Production



Source: *Statistical Review of World Energy 71st edition 2022, BP.*

## Global Gas Market

Gas production in APAC comprises 16.6% of global levels, with China the third largest natural gas producer and Australia, sixth. APAC's growth in gas production between 2011 and 2021 was 3.1% per annum, after North America and the Middle East.

### APAC's Share of Global Gas Production

According to the 2022 BP Statistical Review of World Energy, global production of natural gas reached 4,036.9 billion cubic metres (bcm) in 2021, a 4.8% increase on 2020, with the primary driver for increased output being the recovery from Covid-19. Output from 2011-2021 grew at 2.2% per annum.

The top gas-producing regions are:

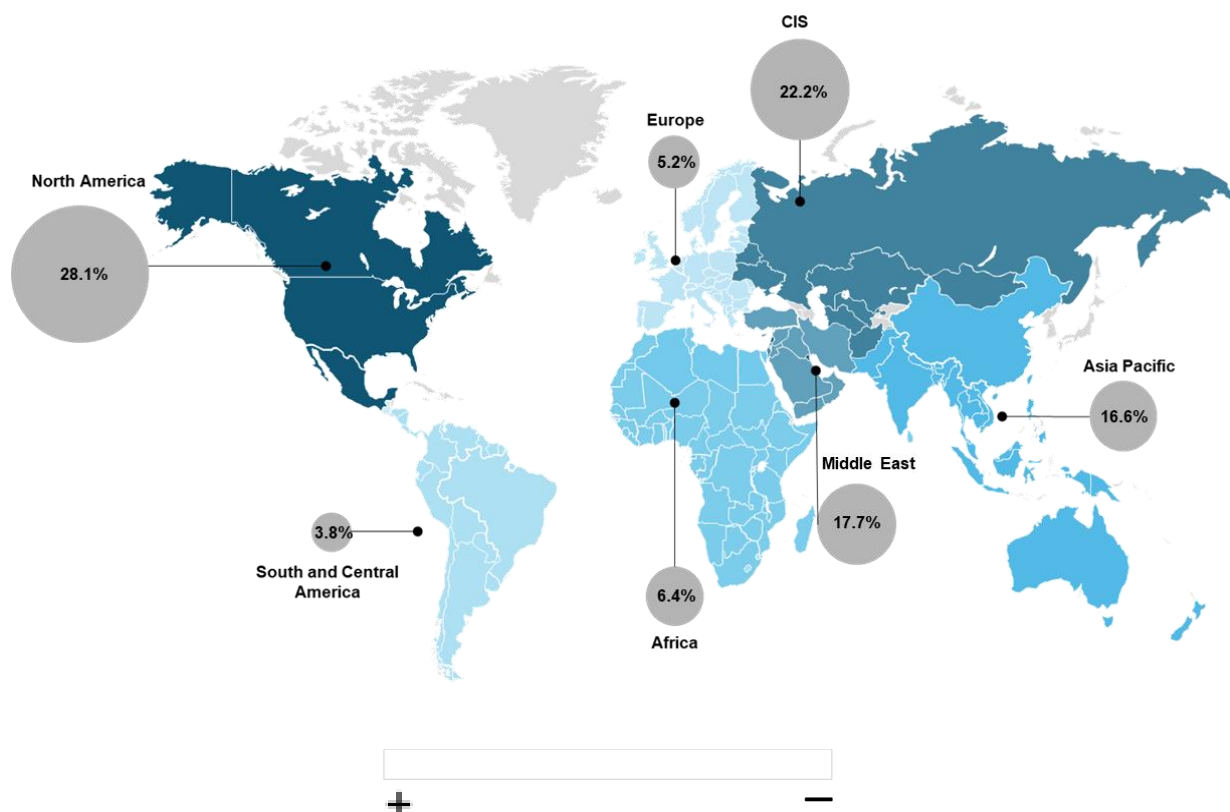
- North America, 28.1%
- CIS, 22.2%
- Middle East, 17.7%
- APAC, 16.6%



North America, Middle East and APAC production grew between 3.1% and 3.3% during the same period.

APAC produced 669 bcm in 2020. The region is forecast to retain high gas demand growth as it continues to urbanize and industrialize, with forecast growth of 2.1% per annum until 2035.

**Figure 2: Global Gas Production**



Source: *Statistical Review of World Energy 71st edition 2022, BP.*

## Oil Market in APAC

*China, India and Indonesia are the largest producers in APAC. Regional oil production over the decade up to 2021 decreased 1.2% per annum.*

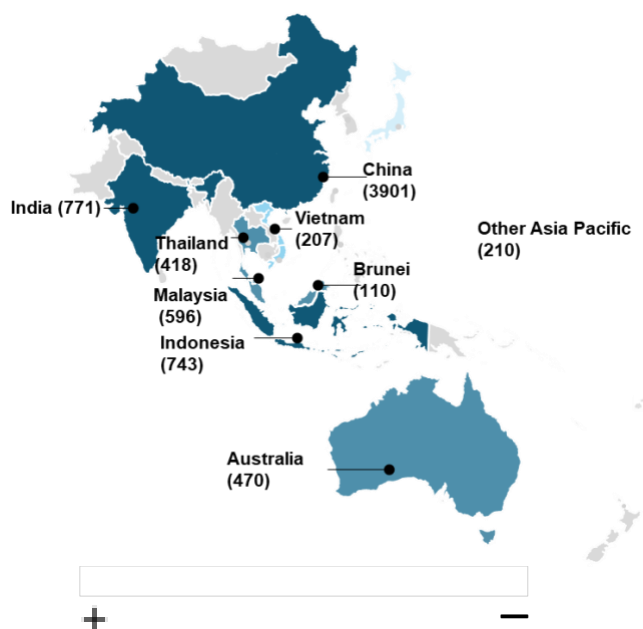
The 2022 BP Statistical Review of World Energy revealed that, within the APAC region, China was the dominant oil-producing nation, at 3,994 kbpd accounting for 54% of the region's output in 2021 (Figure 3, left chart).

India and Indonesia, at 746 kbpd and 692 kbpd respectively, are the second and third largest producers.

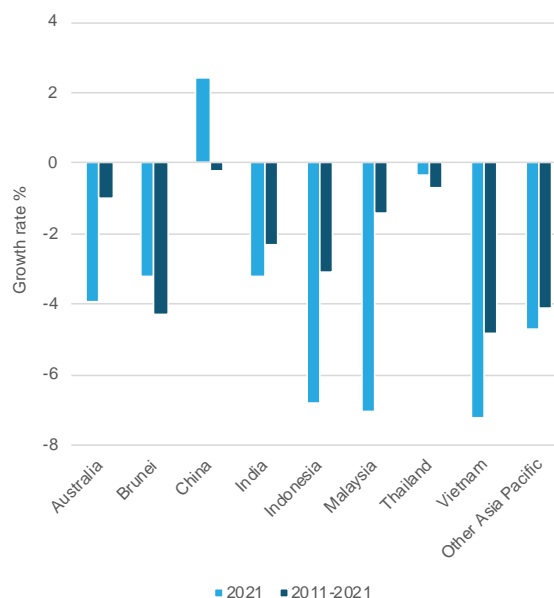
APAC’s oil production decreased 1.2% per annum between 2011 and 2021. No countries in the region saw an overall growth in oil production during the same period (Figure 3, right chart). The primary reasons for the declining output boil down to maturing oil fields and new exploration not keeping pace with the depletion.

**Figure 3: APAC Oil Production**

Oil Production in Barrels Per Day (2021)



Oil Production Growth Rate Per Annum



Source: *Statistical Review of World Energy 71<sup>st</sup> edition 2022, BP.*

The Covid-19 pandemic resulted in curtailed output due to softer demand in the transportation sector and production interruptions. This occurred in both 2020 and 2021, while 2022 was estimated to be closer to 2019 levels. China was the only APAC country to increase production in 2021.

APAC is the largest consumer of oil, at 38.1% of 2021 global demand, followed by the United States at 23.7%. Within the region, China accounted for 43% of oil consumption, followed by India with 13.6%.<sup>3</sup>

Looking ahead, APAC is expected to make up 77% of world oil demand growth through to 2025.<sup>4</sup> Regional production is not forecast to meet this requirement, increasing reliance on imports and creating opportunities for alternative fuels.

<sup>3</sup> BP. *2022 Statistical Review of World Energy Workbook*. June 2022.

<sup>4</sup> International Energy Agency. *Oil 2020 – Analysis*. March 2020.

## Natural Gas Market in APAC

China, Australia, Malaysia and Indonesia are APAC’s largest gas producers. The period between 2011 and 2021 saw a 3.1% per-annum increase in production, with China, India and Australia in particular exceeding their 2019 levels in 2021.

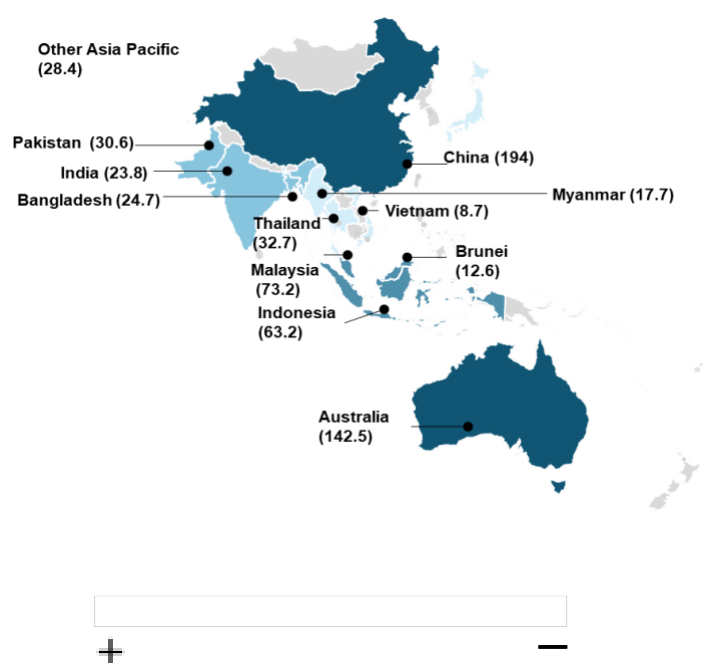
According to the BP 2022 Statistical Review of World Energy, China is the largest natural gas producing nation within APAC, generating 209.2 bcm, or 31% of the region’s output. Australia is second with 147.2 bcm, or 22%. Malaysia and Indonesia, at 74.2 bcm and 59.3 bcm respectively, are third and fourth, while the remainder of the APAC economies are relatively small producers.

From 2011-2021, Australia and China saw the largest expansion of gas production, followed by Myanmar.

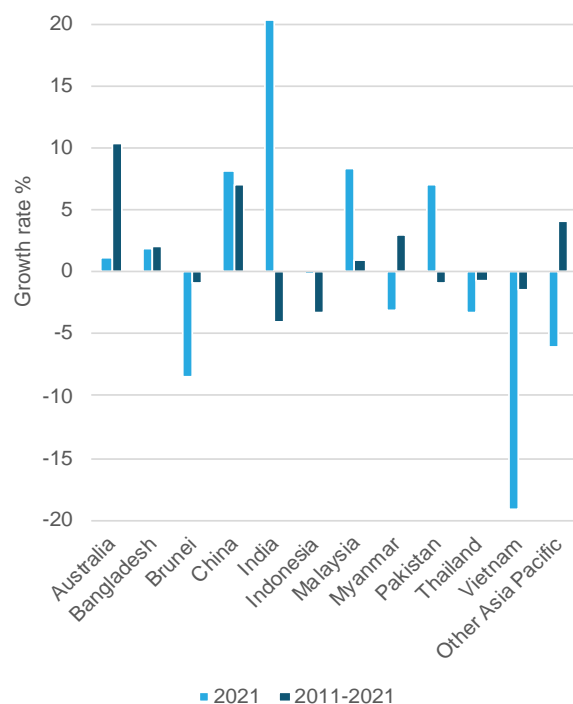
Covid-19 has resulted in significant production disruption across the region. The year 2021 saw Indian gas production growth rebound 20.4% from its pandemic low, the strongest among APAC countries. Output was also 6% higher than two years earlier. China (118%), Australia (101%) and Pakistan (100%) were countries that, by 2021, had recovered to production levels above or equal to 2019. All other APAC economies had production sitting at 5%-28% below 2019 levels. Vietnam’s production shrank the most compared with its 2019 output, down about 19.2% by 2021.

**Figure 4: APAC Gas Production**

Natural Gas Production in Billion Cubic Meters (2021)



Natural Gas Production Growth Rate Per Annum



Source: Statistical Review of World Energy 71<sup>st</sup> edition 2022, BP.

In terms of natural gas consumption, APAC is the second largest in the world, comprising 22.7% of 2021 global demand, behind the U.S. at 25.6%. China accounted for 41.4% of natural gas consumption in the region, followed by Japan at 11.4%.<sup>5</sup>

## Geographic Spread of APAC’s O&G Companies

*About 15% of global upstream O&G companies are based in APAC, mostly in China, Australia and Japan. Despite Japan and South Korea not producing domestically, their O&G companies invest heavily in regional upstream assets.*

### O&G Players in the Region

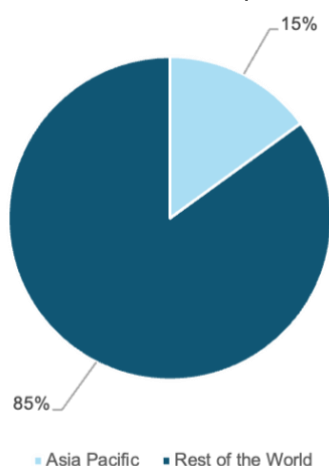
Based on Urgewald’s Global Oil and Gas Exit List 2022, APAC has 102 companies that operate upstream oil or gas within the region, making up 15% of all O&G-related companies globally. Of the 102 companies, 79 produce oil or gas, while the remaining carry out exploration.

This roughly corresponds to APAC’s overall global share of oil production, at 8.2%, and gas production, at 16.6%.

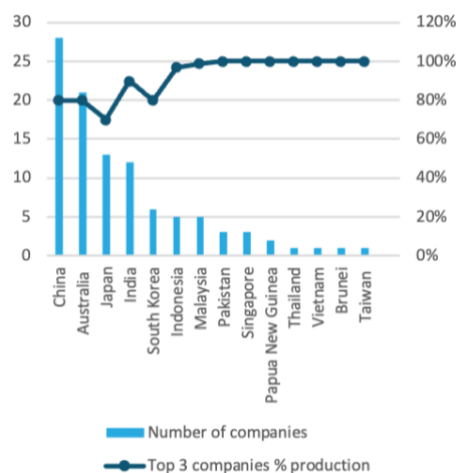
Most of the O&G companies in the region are in China, totaling 30, of which 83% produced O&G in 2021. Australia has 22 O&G companies; half of these are exploration and production companies that had no output in 2021. These conduct exploration projects in Australia and more widely across the world.

**Figure 5: O&tG Firms in APAC**

Proportion of O&G Firms Operating in APAC



APAC-domiciled O&G Firms



Source: Urgewald, Global Oil & Gas Exit List 2022.

<sup>5</sup> BP. 2022 Statistical Review of World Energy Workbook. June 2022.

The chart on the right of Figure 5 shows the distribution of companies across the region, as well as the proportion that the top three companies in each economy produce in million barrels of oil equivalent (mmb) as a percentage of total national O&G output. This demonstrates a high concentration of production within those market leaders.

China’s production is heavily concentrated in PetroChina, CNOOC and Sinopec, which together account for around 80% of output in the country.

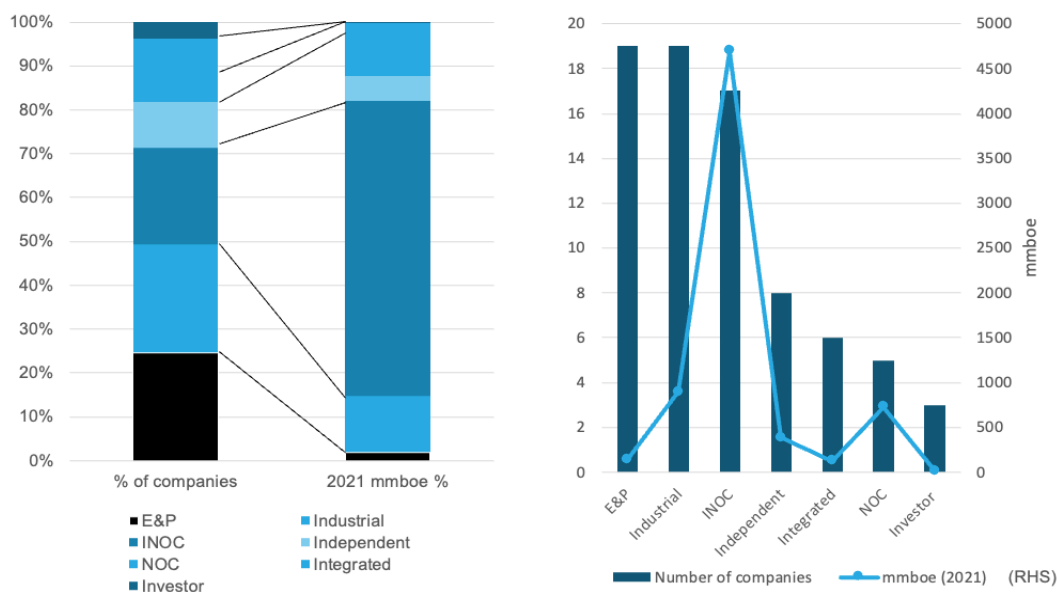
## Role of Government in APAC’s O&G Industry

*Companies under government ownership or control generate around 77% of O&G production across APAC. Their business models display a more concentrated reliance on O&G for revenue generation than their industrial peers.*

### Regional Production

Figure 6 shows that O&G production in APAC is dominated by international national oil companies (INOCs), such as PetroChina, CNOOC and Petronas, which account for 67% of output in the region.

**Figure 6: O&G Firms in APAC by Upstream Segment**



Source: Urgewald, *Global Oil & Gas Exit List 2022*.

Industrials account for the second highest production, with 13%. These companies include entities that are typically more diversified, running electricity generation, chemicals or other energy-intensive businesses. Some examples are Inpex Corporation, Shaanxi Yanchang Petroleum International and Mitsui & Co.



National oil companies (NOCs) are the third highest, making up 10% of production. They include Sinopec, Pakistan Oil and Gas Development Company Limited (OGDCL) and Pakistan Petroleum Limited.

INOCs and NOCs are state-owned enterprises. INOCs carry out production outside their home countries, whereas NOCs are domestically focused.

Most companies across the upstream segment have limited revenue diversification outside the sale of O&G or services associated with the industry.

At about 96%, INOCs and NOCs have the highest concentration of revenue sources in O&G. Notable exceptions include the industrial segment, which draws an average of 77.8% of revenue from O&G. Marubeni Corporation, being a diversified conglomerate, earns only 10% of revenue from O&G.

## Path to Net Zero and Revenue Diversification

*O&G companies in APAC have begun setting net-zero targets and revenue diversification strategies. Most of them are at the early stages and have developed limited detail on implementation.*

### Net-zero Targets

This paper reviewed the 2021 top 20 O&G-producing companies based in APAC, which represent 85% of regional O&G production, for their net-zero and revenue diversification strategies (Table 1).

Of these 20 companies, 55% had publicly stated net-zero plans with target dates ranging from 2040 (Santos) to 2065 (PTT Exploration and Production Public Company), most of them targeting 2050. Discussions at the 2021 United Nations Climate Change Conference have prompted a number of producers to establish and announce net-zero targets.

Within the 20 companies, 75% have developed strategies for diversifying their revenue base. Plans range from developing modest renewable energy projects, as with Woodside Energy and Korea Gas Corporation (KOGAS), to targeting a proportion of income from markets of new energy. Some companies (Santos, Petronas, Inpex, CNOOC, PetroChina and Sinopec) are exploring technologies that are yet to be proven credible as decarbonization solutions, such as carbon capture and storage (CCS).<sup>6,7,8</sup> The BHP Group notably exited the O&G sector with the disposal of its petroleum division to Woodside in 2022.<sup>9</sup>

Despite having net-zero targets, most of the companies have not yet developed interim targets or detailed implementation plans.

<sup>6</sup> IEEFA. [Carbon capture landscape 2022 – still too early to confidently fulfil promises](#). July 7, 2022.

<sup>7</sup> IEEFA. [The carbon capture crux: Lessons learned](#). Robertson and Mousavian. September 1, 2022.

<sup>8</sup> IEEFA. [CCS for power yet to stack up against alternatives](#). Ng and Salt. March 30, 2023.

<sup>9</sup> The Sydney Morning Herald. [BHP to exit oil and gas in Woodside mega-deal as climate pressure heats up](#). August 17, 2021.



**Table 1: Net-zero Strategies of APAC's Top 20 O&G Firms by Production**

Top 20 by mmboe	Country	2021 mmboe	Net-zero Target	Revenue Diversification	Remarks
PetroChina Company Limited	China	1932.2		✓	"Near-zero" by 2050; renewable energy, CCS/CCUS <sup>10</sup>
China National Offshore Oil Corporation (CNOOC)	China	666.3		✓	5-10 gigawatt solar and wind power by 2025, CCUS <sup>11</sup>
China Petroleum & Chemical Corporation (Sinopec)	China	650.7	✓	✓	Net zero by 2050; CCUS, green hydrogen and renewables <sup>12</sup>
Petroleum Nasional Berhad (Petronas)	Malaysia	614.8	✓	✓	Net zero by 2050; CCS, renewables, hydrogen research and development <sup>13</sup>
Oil and Natural Gas Corporation Limited (ONGC)	India	402.6		✓	US\$6.2 billion in hydrogen and renewables investment <sup>14</sup>
PT Pertamina	Indonesia	262.3	✓	✓	Net zero by 2060; geothermal, new and renewable energy <sup>15</sup>
Inpex Corporation	Japan	197.7	✓	✓	Net zero by 2050; hydrogen ammonia, CCUS <sup>16</sup>
China National Petroleum Corporation (CNPC)	China	194.5		✓	Carbon neutrality before 2060; geothermal, wind and solar power <sup>17</sup>
PTT Exploration and Production Public Company Limited (PTTEP)	Thailand	189.5	✓	✓	Net zero by 2050; CCS, natural carbon sink, renewable energy, hydrogen <sup>18</sup>
Mitsui & Co	Japan	128.2	✓	✓	Net zero by 2050; renewables, ammonia, distributed energy systems <sup>19</sup>
Shaanxi Yanchang Petroleum	China	114.1			No investments or publicly stated targets

<sup>10</sup> PetroChina. [2021 Environmental, Social and Governance Report](#). p. 30-43.

<sup>11</sup> CNOOC. [2022 Strategy Preview](#). January 11, 2022, p. 31.

<sup>12</sup> Sinopec Corp. [2022 Sustainability Report](#). p. 43-48.

<sup>13</sup> Petronas. [Petronas' pathway to net zero carbon emissions 2050: Delivering energy in a responsible and sustainable manner](#). February 2023.

<sup>14</sup> Outlook Publishing (India). [ONGC, partners to splash \\$6.2 billion on green energy projects](#). July 28, 2022.

<sup>15</sup> PT Pertamina. [Sustainability Report 2021](#). p. 109-110.

<sup>16</sup> Inpex. [Annual Report 2021](#). p. 4-7.

<sup>17</sup> CNPC. [2021 Annual Report](#). p. 10-12.

<sup>18</sup> PTTEP. [Company website – Net zero](#). Accessed on May 24, 2023.

<sup>19</sup> Mitsui & Co. [Sustainability Report 2022](#). p. 102.

Top 20 by mmboe	Country	2021 mmboe	Net-zero Target	Revenue Diversification	Remarks
BHP Group	Australia	109.9	✓	✓	Net zero by 2050; sold petroleum business to Woodside on June 1, 2022 <sup>20</sup>
Woodside Energy Group	Australia	95.8	✓	✓	Net zero by 2050 (aspiration); hydrogen and ammonia plant developments <sup>21</sup>
Santos Limited	Australia	93.9	✓		Net-zero Scope 1 and 2 emissions by 2040; CCS, no current revenue diversification measures <sup>22</sup>
Pakistan Oil and Gas Development Company Limited (OGDCL)	Pakistan	81.2			No investments or publicly stated targets
Mitsubishi Corporation	Japan	79.2	✓	✓	Net zero by 2050; US\$17.5 billion by 2030 in renewables and hydrogen <sup>23</sup>
PetroVietnam	Vietnam	69.9		✓	Renewable targets of 100 megawatts by 2025, 900MW by 2035 <sup>24</sup>
Korea Gas Corporation (KOGAS)	South Korea	59.6	✓	✓	Net zero by 2045; 20% of energy from renewables by 2030 <sup>25</sup>
Pakistan Petroleum Limited	Pakistan	54.9			No investments or publicly stated targets
Petrobangla	Bangladesh	51.0			No investments or publicly stated targets

Source: Urgewald, *Global Oil & Gas Exit List 2022*; company announcements.

<sup>20</sup> BHP. [Annual Report 2022](#). p. 41.

<sup>21</sup> Woodside. [Climate Report 2022](#). p. 6.

<sup>22</sup> Santos. [Sustainability Report 2022: Building a better future](#). p. 26.

<sup>23</sup> Mitsubishi. [Sustainability Report 2022 – Environment](#). p. 56-61.

<sup>24</sup> Reuters. [PetroVietnam to invest in renewables amid shrinking crude oil production](#). July 8, 2020.

<sup>25</sup> KOGAS. [Sustainability Report 2022](#). p. 42.

## Net Zero Will Require Diversification, not a Carving Out of O&G Assets

*Despite net-zero commitments, O&G companies in APAC rely heavily on fossil fuel revenue and have limited exposure to non-carbon assets. Revenue exposure to fossil fuels is more than 90% across the region.*

The top 20 regional O&G producers generate an average of about 96%<sup>26</sup> of their revenue directly from O&G production and related activities (Figure 7). This observation applies irrespective of company type, be it an INOC, NOC, industrial or otherwise, all having a similarly high revenue exposure of more than 90% to O&G activity.

To achieve their net-zero ambitions and derisk their portfolios from the O&G sector, companies need to diversify revenue sources. Carving out and selling O&G assets, at the scale that BHP has done with Woodside, is unlikely to be feasible for most in the short run, given their activities almost exclusively revolve around O&G, while BHP received about 15% of revenues from O&G before the sale of its petroleum division. However, this strategy of carving out O&G-exposed assets could be implemented in the medium to long term by diversifying revenue sources. Additionally, smaller O&G carve-outs could fund their revenue diversification strategies.

Most of the companies will have to implement strategies to develop new capabilities, technologies and assets to capture a share in the market of new energy, which typically consists of renewable generation, green ammonia or hydrogen production, and electric transmission and storage infrastructure.<sup>27,28,29</sup>

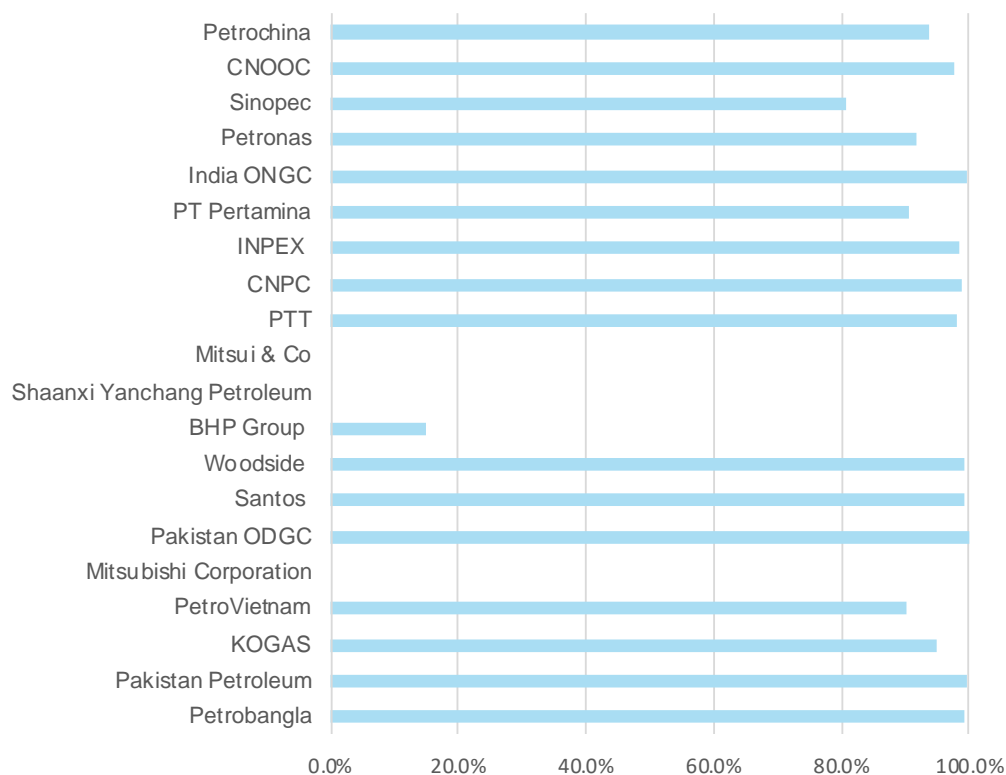
<sup>26</sup> Urgewald. Global Oil & Gas Exit List 2022.

<sup>27</sup> McKinsey & Company. [Introduction: Navigating decarbonization and energy transition in the built world](#). July 28, 2021.

<sup>28</sup> Australasian Centre for Corporate Responsibility. [Oil and gas sector: 2022 climate transition](#). May 5, 2022.

<sup>29</sup> International Renewable Energy Agency. [International oil companies and the energy transition](#). Asmelash and Gorini. February 2021.



**Figure 7: Dependency on O&G for Revenue**

Source: Urgewald, *Global Oil & Gas Exit List 2022*.

Note: Companies with no data above have not reported details of revenue diversification.

*O&G producers in APAC are lagging global peers in investment in new technologies. Many regional companies are still adopting a wait-and-see approach to new energy investments.*

Bloomberg New Energy Finance (BNEF) published a report in January last year on global O&G energy transition investment trends, defining three categories of investment in low-carbon technologies:<sup>30</sup>

- Projects, including asset financing of new builds and the acquisition of assets
- Platforms, including mergers and acquisitions, private equity and joint ventures but excluding equity stakes in projects
- Venture capital businesses, including investment in early-stage companies

<sup>30</sup> BNEF. Energy transition investment trends 2022. January 2022.

The BNEF report sampled 21 O&G international companies involved in upstream and midstream activities. Five of them, namely Petronas, PTT, Sinopec, Indian Oil Corporation and CNOOC, are among the top 20 APAC upstream producers.

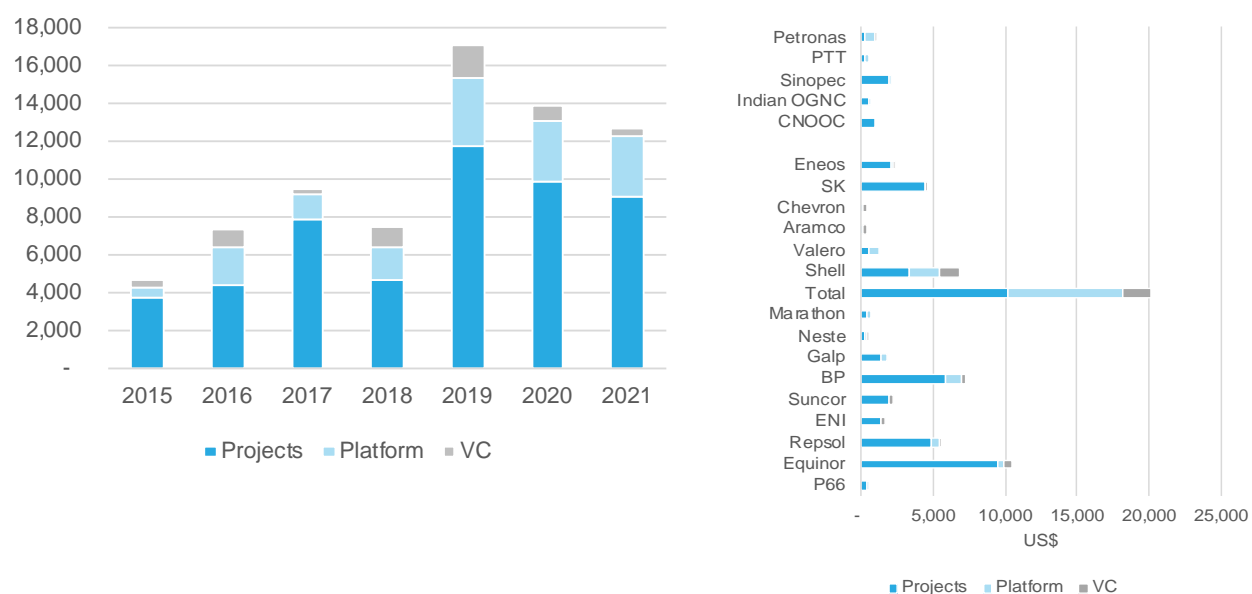
These five recorded a median total investment in low or zero-carbon technologies of US\$901 million from 2015 to 2021, while the remainder of the companies surveyed averaged US\$2,020 million.<sup>31</sup> Upstream APAC companies remain laggards in such investments compared to global peers.

Companies in the region generally favor direct investments into projects, instead of undertaking mergers and acquisitions or venture capital investments in early-stage companies.<sup>32</sup>

Overall investment in low or zero-carbon technologies has been increasing since 2015, with a significant increase in 2019. The period of 2020-2021 saw less investment, potentially due to Covid-19.

**Figure 8: What O&G Firms Invest In**

**Low/Zero-carbon Technology Investment by O&G Companies 2015-2021, USD mil**



Source: BNEF, Oil and Gas Energy Transition Investment Trends, 2021.

Note: VC = venture capital; Eneos = Eneos Holdings, Inc; SK = SK gas; Chevron = Chevron Corporation; Aramco = Saudi Aramco Group; Valero = Valero Energy Corporation; Shell = Shell plc; Total = TotalEnergies SE; Marathon = Marathon Energy; Neste = Neste Oyj; Galp = Galp Energia; Suncor = Suncor Energy Inc; ENI = Eni SpA; Repsol = Repsol SA; Equinor = Equinor ASA; P66 = Phillips 66 Company

<sup>31</sup> BNEF. Energy transition investment trends 2022. January 2022.

<sup>32</sup> BNEF. Energy transition investment trends 2022. January 2022.

## Financing of O&G Assets

### Industry Financing Mix

*The risk profile of O&G company operations reflects a heavy reliance on equity for funding.*

#### Data Context and Constraints

A search of APAC companies tagged with the industry classification “Oil, Gas and Consumable Fuels” generated a list of 259 entities. While this outcome suggests a wider list compared with companies analyzed in the prior section, it includes a number of entities that form part of broader O&G groups, INOCs and NOCs. The findings in this section will also likely demonstrate trends and inferences that can help develop an understanding of how the O&G industry finances itself.

#### Key Takeaways

Based on IEEFA’s analysis of S&P Capital IQ data, O&G companies are on average more reliant on equity than debt financing as a critical source of capital. The 259 companies had a debt-to-total capital ratio of around 32% across their aggregate data.

By extension, the companies carry modest levels of earnings leverage. The average ratio of debt to earnings before interest, taxes, depreciations and amortization is 1.80 times, suggesting that on the whole, the companies have the capacity to repay outstanding borrowings in less than two years of operations should they choose to apply all available earnings to debt reduction.

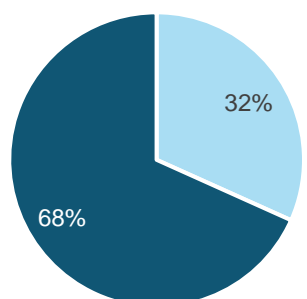
The aggregate debt balance across these companies is US\$530 billion, implying an average debt balance of US\$2.2 billion, though significant variations are noted in practice (see the next section, on Debt Financing).

The relatively low gearing levels observed are likely due to many, though not all, of the companies having an element of exploration activity within their operations. O&G exploration is a riskier and often non-bankable endeavor than extraction, given its speculative nature and focus on proving the existence of reserves.

Changing O&G company attitudes to environmental, social and governance (ESG) matters may therefore be most effective through engagement with their shareholders.

**Figure 9: Debt-to-Total Capital Ratio of O&G Firms in APAC**

Debt to Total Capital for O&amp;G Industry



■ Total Debt ■ Total Equity

Source: IEEFA analysis based on S&P Capital IQ.

## Debt Financing

*Larger players exhibit high debt balances but more moderate gearing levels than their smaller peers.*

### A Range of Metrics

The aggregate data in the previous section, on the Financing of O&G Assets, paints only part of the picture. A closer look at the individual debt balances of the 259 companies reveals a story of haves and have-nots when it comes to debt financing.

Figure 10 shows the outstanding debt balance of each of these companies (bar chart) relative to the group average (line chart).

Key observations of note include the following:

- The average debt balance is US\$2.2 billion<sup>33</sup>
- The highest debt balance is recorded by PetroChina, at US\$74 billion
- 24 companies have a debt balance of \$0

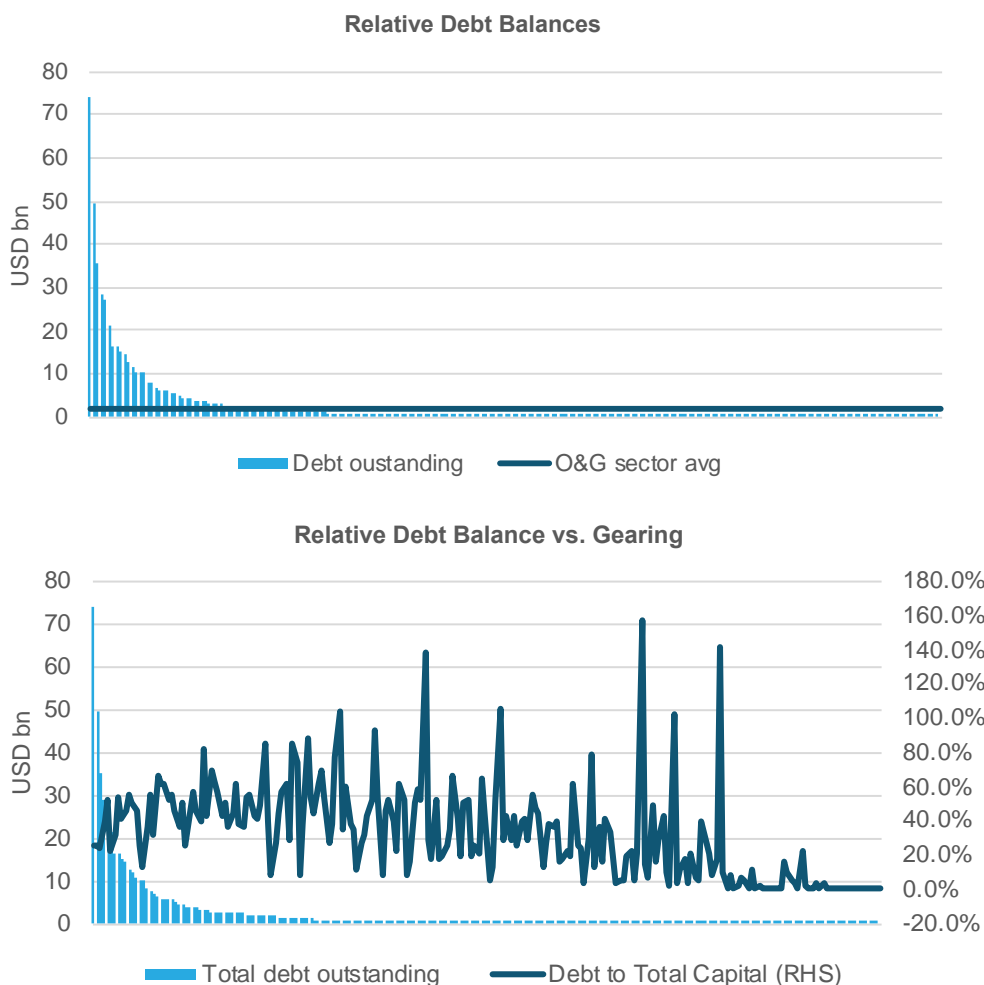
The second chart in Figure 10 overlays gearing, as measured by the ratio of debt to total capital, onto outstanding debt balances.

<sup>33</sup> Under global accounting regulations, the debt obligations of subsidiaries in which the holding company owns more than 51% of issued capital are consolidated in full into the accounts of the holding company. As such, project financing arrangements for majority-owned subsidiaries are included in the debt balances reflected herein.

It shows that in general, companies with higher debt balances, on the left of the charts, have moderate gearing levels of generally between 30% and 70%. The moderate gearing implies that companies with large debt balances also have significant amounts of equity in the financing mix.

Instances of high or extreme gearing, defined as more than 80%, are generally confined to companies with lower absolute debt balances. Given the size of their debt, they are likely to be smaller companies with less output or planned further investment in O&G assets. This issue will be considered later in the current paper.

**Figure 10: Relative Debt Balances of O&G Firms in APAC**



Source: IEEFA analysis based on S&P Capital IQ.

*Highly geared companies have lower absolute debt, suggesting they are generally smaller firms with less output.*



### O&G Players with High Gearing

Table 2 identifies regional companies with the highest gearing ratios, as measured by the debt-to-total capital ratio. It shows only those companies with a gearing ratio greater than 70%.

This data demonstrates that highly geared companies are an anomaly in the O&G space as they total just 14 out of the 259 in the data set. The anomaly further backs up the observation of a general reliance on equity finance by the sector.

Highly geared companies are generally smaller, with an average outstanding debt balance of US\$820 million compared to the sector average of US\$2.2 billion. They are concentrated in China and Indonesia, which are home to 11 of the 14 companies.

While these companies will probably be more adversely affected in the event lenders choose to exit the sector instead of refinancing, their debt amounts indicate they are generally smaller and so, at a macro level, unlikely to make observable impacts to regional O&G production.

**Table 2: Highly Geared O&G Firms in APAC**

Companies With Gearing Ratio of >70%			
	Location	Debt to Total Capital	Debt Outstanding USD bn
PT Wilton Makmur Indonesia Tbk	Indonesia	157.2%	0.04
PT Capitalinc Investment Tbk	Indonesia	142.1%	0.01
Feishang Anthracite Resources Limited	China	138.1%	0.37
TerraCom Limited	Australia	105.8%	0.20
Zhongxing Tianheng Energy Technology (Beijing) Co., Ltd.	China	103.4%	0.81
PT Dwi Guna Laksana Tbk	Indonesia	101.6%	0.03
China Qinfa Group Limited	China	92.9%	0.58
Hidili Industry International Development Limited	China	88.6%	1.13
Chennai Petroleum Corporation Limited	India	85.8%	1.41
PT Bumi Resources Tbk	Indonesia	85.5%	1.65
Shanxi Guoxin Energy Corporation Limited	China	81.5%	2.98
Sichuan Shengda Forestry Industry Co., Ltd	China	78.7%	0.06
PT Delta Dunia Makmur Tbk	Indonesia	77.9%	0.87
Fuji Oil Company, Ltd.	Japan	74.2%	1.36

Source: IEEFA analysis based on S&P Capital IQ.

O&G-sector debt financing in APAC is concentrated within a smaller borrower group.

### Regional Debt Capital Sits with a Small Group

Table 3 lists, in descending order, the outstanding debt balances of entities in the data set that take up 80% of the overall debt issued or lent to O&G companies in APAC.

Just 27 entities out of the list of 259 represent 80% of the O&G debt market in the region – meaning capital is concentrated within a select few entities.

**Table 3: Top 27 O&G Firms in APAC by Debt Outstanding**

Company	Location	Debt Outstanding USD bn	% of Total
PetroChina Company Limited	China	74.03	14.0%
China Petroleum & Chemical Corporation (Sinopec)	China	49.67	9.4%
Reliance Industries Limited	India	35.42	6.7%
PTT Public Company Limited	Thailand	28.60	5.4%
Eneos Holdings, Inc.	Japan	27.22	5.1%
China National Offshore Oil Corporation (CNOOC) Limited	Hong Kong	21.27	4.0%
Oil and Natural Gas Corporation (ONGC) Limited	India	16.51	3.1%
Yankuang Energy Group Company Limited	China	16.39	3.1%
China Coal Energy Company Limited	China	15.32	2.9%
Indian Oil Corporation Limited	India	14.58	2.8%
HD Hyundai Co., Ltd.	South Korea	12.74	2.4%
Idemitsu Kosan Co., Ltd.	Japan	11.77	2.2%
GS Holdings Corp.	South Korea	10.39	2.0%
Inpex Corporation	Japan	10.25	1.9%
China Shenhua Energy Company Limited	China	10.07	1.9%
Santos Limited	Australia	8.04	1.5%
Bharat Petroleum Corporation Limited	India	7.82	1.5%
Woodside Petroleum Ltd	Australia	6.80	1.3%
Banpu Public Company Limited	Thailand	6.08	1.1%
Thai Oil Public Company Limited	Thailand	5.98	1.1%
China Suntien Green Energy Corporation Limited	China	5.93	1.1%
Hindustan Petroleum Corporation Limited	India	5.65	1.1%
Cosmo Energy Holdings Co., Ltd.	Japan	5.53	1.0%
S-Oil Corporation	South Korea	4.90	0.9%
Inner Mongolia Yitai Coal Co., Ltd.	China	4.41	0.8%
China Merchants Energy Shipping Co., Ltd.	China	4.41	0.8%
PTT Exploration and Production Public Company Limited	Thailand	4.09	0.8%
<b>Total</b>		<b>423.91</b>	<b>80.0%</b>

Source: IEEFA analysis based on S&P Capital IQ.

## Geographic Mix of O&G Borrowers in APAC

*China and India are the largest O&G-sector borrowers, in line with the size of their economies. Lenders in these markets may not have begun exiting the O&G sector yet as part of their decarbonization efforts.*

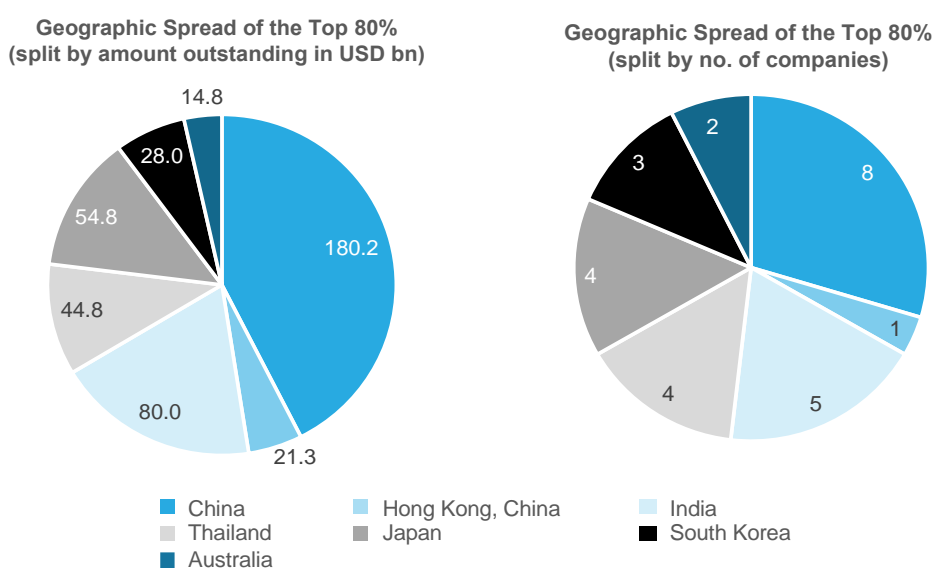
### China and India Represent Lion’s Share

A further dive into the outstanding debt data reveals the regions with the heaviest borrowings in the O&G sector. Figure 11 shows the regional distribution of the same top 27 borrowers from Table 3.

According to the charts, China and India have the most borrowers, with about US\$260 billion in O&G indebtedness between them, and US\$280 billion when including Hong Kong (left chart). The chart on the right shows 13 of the 27 borrowers (14 if including Hong Kong) are based in these two jurisdictions.

Viewed through another lens, the data demonstrates that lenders and investors in China (including Hong Kong) and India have invested around two-thirds of the debt capital utilized by the top 27 borrowers in the region. This suggests a need for lenders and investors in these locations to make significant changes if they are to be part of the national net-zero targets of their home countries and if they are to fulfill their own obligations in the event they are subsector members of the Glasgow Financial Alliance for Net Zero, to be discussed later in the current report.

**Figure 11: Geographic Spread of Top 80% O&G Firms in APAC**



Source: IEEFA analysis based on S&P Capital IQ.

## Industry's Upstream Expansion Plans

*APAC features prominently in the O&G sector's expansion plans. Companies with their headquarters or planned expansion activity in the region make up almost half of the top 50 by planned capacity growth.*

### Focusing on Future Plans

Efforts to curb funding of operating assets will likely meet with resistance from lenders, however committed those financiers may be to their own decarbonization and ESG goals.

This is in part because lenders are incentivized to refinance maturing loans and bonds in order to ensure borrowers have sufficient time to repay overall debts and/or reposition their businesses. Pulling these funding lines too quickly risks affecting bank balance sheets and financial markets more widely.

While the financing of existing operations warrants a review, future capacity expansion is also problematic under the current global consensus on climate change and the net-zero commitments of governments around the world.

### O&G Capacity Expansion

Table 4 summarizes the headquarters locations of the top 50 global O&G companies and their planned expansion activities in terms of stated expansion goals. Collectively, their planned growth is around 75% of total planned expansion of the sector.

**Table 4: Global Planned O&G Expansion by Production**

Top 50 Firms with Global Expansion Plans		
Region	Number of Companies	Planned Expansion (mmboe)
Middle East	6	53,990
North America	20	39,504
Europe	8	23,967
Russia	4	20,848
Asia	8	20,779
South America	1	8,043
Oceania	2	3,715
Africa	1	1,015

*Source: IEEFA analysis based on Urgewald's Global Oil & Gas Exit List 2022.*

Table 5 shows the breakdown of expansion plans by country, for companies headquartered specifically in APAC. Asia and Oceania, making up APAC, together represent around 14% of the sector's planned future capacity growth by volume, driven by 10 companies.

Chinese companies have the largest expansion plans, comprising 45% of the region's anticipated O&G capacity growth. This buildout is expected from just four Chinese companies, suggesting significant activity levels by a small group of actors.

### APAC More Prominent Than It May Seem

At first glance, APAC seems to be a small contributor to future sector growth. However, it should be noted that in the top 50 list, 12 companies headquartered in Europe, the Middle East or the U.S. have plans to locate their new capacity growth physically within APAC (see Table 7 for the list of 12 companies).

**Table 5: APAC's Planned O&G Expansion by Production**

Top 50 Firms with APAC Expansion Plans		
Country	Number of Companies	Planned Expansion (mmboe)
China	4	10,911
Turkmenistan	1	5,421
Australia	2	3,715
Malaysia	1	1,685
India	1	1,532
Japan	1	1,231

*Source: IEEFA analysis based on Urgewald's Global Oil & Gas Exit List 2022.*



## Bringing It All Together

*Six companies will likely require more aggressive decarbonization in the event that lenders and investors accelerate the focus on their own decarbonization efforts and limit debt capital availability*

### More Robust Transition Plans Are Required

Tables 6 and 7 list APAC entities that have the most outstanding debt and the largest planned expansion of capacity, respectively.

Table 7 includes the 12 companies that, while headquartered outside APAC, intend to carry out at least some of their future capacity expansion physically in the region. These are shown in *italics*.

Companies that are listed in **red** appear in both tables – they have high debt balances and significant expansion plans. They are the firms which would need to establish more robust decarbonization plans in order to ensure ongoing support from lenders, given the increasing focus of financial institutions on the carbon footprint of their own operations and those of their investees, borrowers and clients.

**Table 6: O&G Firms with Most Debt Outstanding, in Descending Order**

Company	Location
PetroChina Company Limited	China
China Petroleum & Chemical Corporation (Sinopec)	China
Reliance Industries Limited	India
PTT Public Company Limited	Thailand
Eneos Holdings, Inc.	Japan
China National Offshore Oil Corporation (CNOOC) Limited	Hong Kong
Oil and Natural Gas Corporation (ONGC) Limited	India
Yankuang Energy Group Company Limited	China
China Coal Energy Company Limited	China
Indian Oil Corporation Limited	India
HD Hyundai Co., Ltd.	South Korea
Idemitsu Kosan Co., Ltd.	Japan
GS Holdings Corp.	South Korea
Inpex Corporation	Japan
China Shenhua Energy Company Limited	China
Santos Limited	Australia
Bharat Petroleum Corporation Limited	India
Woodside Petroleum Ltd	Australia
Banpu Public Company Limited	Thailand
Thai Oil Public Company Limited	Thailand
China Suntien Green Energy Corporation Limited	China
Hindustan Petroleum Corporation Limited	India
Cosmo Energy Holdings Co., Ltd.	Japan
S-Oil Corporation	South Korea
Inner Mongolia Yitai Coal Co., Ltd.	China
China Merchants Energy Shipping Co., Ltd.	China
PTT Exploration and Production Public Company Ltd	Thailand

Source: IEEFA's analysis based on S&P Capital IQ.

**Table 7: O&G Firms with Highest Planned Capacity Expansion, in Descending Order**

Company	Location
Exxon Mobil Corporation	U.S.
TotalEnergies SE	France
Chevron Corporation	U.S.
Turkmengaz State Concern	Turkmenistan
Shell plc	United Kingdom
China National Offshore Oil Corporation (CNOOC) L	China
ConocoPhillips	U.S.
Equinor ASA	Norway
BP plc	UK
Woodside Energy Group Ltd	Australia
China Petroleum & Chemical Corporation (Sinopec)	China
PetroChina Company Limited	China
Eni SpA	Italy
China National Petroleum Corporation (CNPC)	China
Petroliaam Nasional Bhd (Petronas)	Malaysia
Oil and Natural Gas Corporation Ltd	India
Cenovus Energy Inc	Canada
Mitsui & Co Ltd	Japan
Repsol SA	Spain
PJSC LUKOIL	Russia
Santos Limited	Australia
Kuwait Petroleum Corporation (KPC)	Kuwait

Source: IEEFA's analysis based on Uргewald's Global Oil & Gas

## Where the Debt Comes From

*Bond financing comprises 91% of the aggregate outstanding debt of the six companies under analysis. This implies any ESG-driven shift away from fossil fuel investment by bond investors will have a more significant impact than a bank exit.*

### **Bonds as Main Source of Debt Finance**

Figure 12 shows the source of debt capital for the six APAC companies highlighted in red in Table 7. The upper chart shows the percentage mix of bonds versus loans, while the lower chart has the same data in U.S. dollar terms.

As noted earlier, O&G companies, including these six, generally rely more on equity than debt financing, and therefore do not have high leverage. Where debt financing is sought, the data demonstrates an overwhelming use of bonds as the source of debt capital – the aggregate borrowings of the six companies are made up of 91% from bond finance and 9% from bank loans.

The preference for bonds is particularly prevalent in the three Chinese companies on the list of six, namely PetroChina, Sinopec and CNOOC. High credit ratings resulting from implied sovereign support are in part a likely driver of this trend.

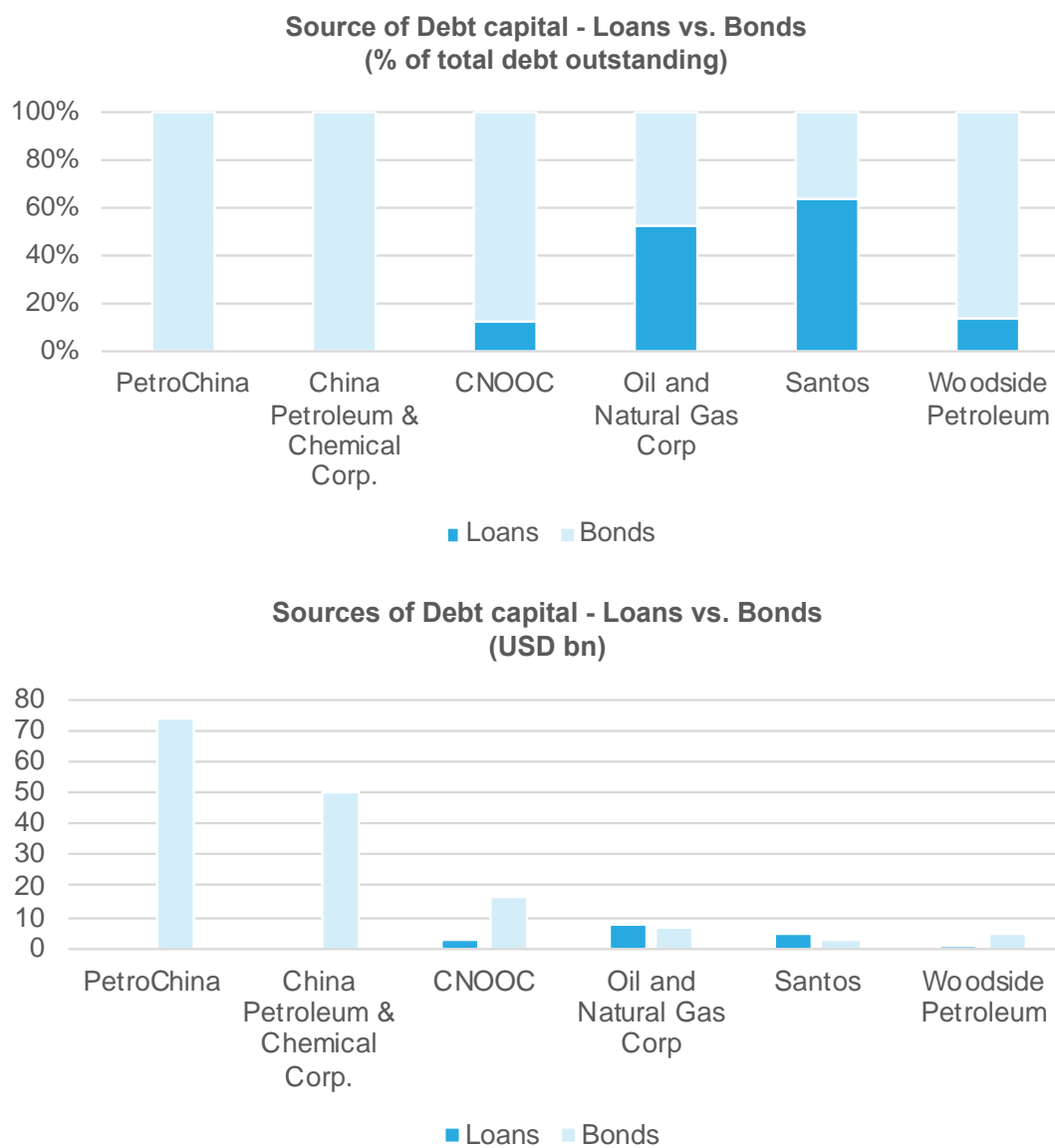
### **Growing Investor Focus on ESG**

Bond deals with an ESG or sustainability focus are on the rise. In six years, the global labeled bond market grew 30 times from US\$250 billion in 2017 to close to US\$6 trillion by the end of last year.<sup>34</sup> The trend is expected to rise further as asset owners and financial regulators increasingly stress the importance of ESG integration and sustainability outcomes to mitigate long-term risks. As investment mandates become more emission-conscious, over time these six companies will progressively face a growing challenge in refinancing or gaining new bond financing for expansion.

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<sup>34</sup> BNEF. 1H 2023 Sustainable Finance Market Outlook: First Decline. February 3, 2023.

**Figure 12: Source of Debt Capital**



Source: Refinitiv.

## Glasgow Financial Alliance for Net Zero (GFANZ)

*In addition to having significant O&G operations and expansion plans, China and India lack representation on GFANZ.*

### Context

GFANZ was launched in 2021. It has since grown to represent over 550 member organizations across more than 50 countries in the banking, insurance, asset ownership, asset management, financial services and investment consulting sectors.

GFANZ members recognize the need to better align their capital investment with a transition to net-zero emissions by 2050, and with intermediate targets for 2030 or sooner, using robust, science-based guidelines.

The NZBA, a subset of GFANZ, has a membership base representing US\$72 trillion, or more than 40% of global banking assets. At least half its member banks have set intermediate targets to reduce lending to the O&G sector. The NZBA, however, lacks representation from China and India (Table 8), which are markets shown in earlier analysis as having both significant O&G operations and significant expansion plans in the region.

The Net Zero Asset Owner Alliance (NZAOA) and Net Zero Asset Management (NZAM) initiative, also subsets of GFANZ, represent US\$11 trillion (53%) and US\$59 trillion (37%) of assets under management, respectively. At least half of NZAM members have formed intermediate targets and fossil fuel policies. Similarly, more than half of NZAOA members have established interim targets; it would be advisable for them to focus on the most carbon-intensive sectors first, which include energy and power.

### Bondholders of O&G Players

Many lenders and investors of the O&G companies studied in this report have signed up to the NZBA, NZAM and NZAOA.

Table 8 lists APAC member banks of NZBA, some of which lend to ONGC, Santos and Woodside, three of the six O&G companies singled out in Table 7. Table 9 lists investors in bonds on issue of all six companies.

It should be noted that public data on lenders and bondholders of the O&G companies examined in the current report is limited, given the private bilateral nature of lender-borrower arrangements or non-mandatory disclosure specifications concerning holdings.

**Table 8: APAC Members of NZBA**

<b>Signatory</b>	<b>Country</b>	<b>Lender to</b>
Australia & New Zealand Banking Group Ltd	Australia	ONGC, Santos, Woodside
Bank of New Zealand	New Zealand	
CIMB Bank Berhad	Malaysia	
Commonwealth Bank of Australia	Australia	Santos
DBS Bank Ltd.	Singapore	Santos, Woodside
Hana Financial Group	South Korea	
HSBC Holdings plc	Australia and UK	
IDLC Finance Limited	Bangladesh	
Industrial Bank of Korea (IBK)	South Korea	
JB Financial Group	South Korea	
KB Financial Group Inc.	South Korea	
Macquarie Group	Australia	
Mitsubishi UFJ Financial Group, Inc	Japan	Santos, Woodside
Mizuho Financial Group, Inc.	Japan	Santos, Woodside
National Australia Bank Limited	Australia	Santos
Nomura Holdings, Inc.	Japan	
NongHyup Financial Group	South Korea	
OCBC Bank	Singapore	
Shinhan Financial Group	South Korea	
Sumitomo Mitsui Financial Group, Inc.	Japan	
Sumitomo Mitsui Trust Holdings, Inc.	Japan	
The City Bank Limited	Bangladesh	
United Overseas Bank (UOB)	Singapore	
Westpac Banking Corporation	Australia	ONGC, Santos, Woodside
Woori Financial Group	South Korea	

Source: GFANZ; NZBA.

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*A growing pool of GFANZ member organizations is likely to reduce the availability of debt and equity capital to fossil fuel-related industries, including O&G.*

### **Potential Impact to O&G Borrowers**

The GFANZ subsector alliances are determining the standards or limits that member firms must adhere to in fossil fuel financing.<sup>35</sup> In March, the NZAOA published a position paper<sup>36</sup> which laid out expectations on various stakeholders. For example, its members are expected to make no new direct investments in upstream O&G infrastructure. Similarly, the NZBA is poised to publish its guidance to members shortly.

While the level of ambition is being debated and leaders and laggards can be expected, the signal is clear. Capital provision to the O&G sector by GFANZ members, whether in the form of loans or investments in bonds or equities, is likely to reduce in the near term as members seek to fulfill their own net-zero commitments and align their portfolios with their respective investor and customer mandates.

At face value, the growing pool of GFANZ members may not cause alarm to O&G firms. An abrupt and wholesale exit of capital from the O&G industry is unlikely, particularly as some lenders and investors will have little choice but to refinance maturing debt lines to allow a more gradual rebalancing of their portfolios.

However, the O&G sector is likely to find capital raising trickier in the coming years, particularly to support new capacity.

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<sup>35</sup> Bloomberg. [Wall Street clashes with green bankers fed up with oil agenda](#). February 21, 2023.

<sup>36</sup> United Nations Environment Program and Principles for Responsible Investment. [Position on the oil and gas sector](#). March 29, 2023.



**Table 9: Global Members of NZAM Initiative and NZAOA**

<b>Bondholders</b>	<b>Signatory to</b>	<b>Holdings in</b>
abrdn plc	NZAM	ONGC, Santos, Woodside
AllianceBernstein LP	NZAM	Woodside
Allianz SE	NZAOA	ONGC, Woodside
Aviva PLC	NZAM, NZAOA	CNOOC
AXA SA	NZAM, NZAOA	PetroChina
BlackRock Inc	NZAM	CNOOC, ONGC, Santos
Capital Group Cos Inc/The	NZAM	Woodside
Credit Suisse Group AG	NZAM, NZBA	CNOOC, ONGC, Woodside
Deutsche Bank AG	NZBA	ONGC
Fidelity International Ltd (FIL)	NZAM	CNOOC
Fideuram – Intesa Sanpaolo Private Banking SpA	NZAM	CNOOC
Goldman Sachs Group Inc/The	NZBA	CNOOC
HSBC Holdings PLC	NZAM, NZBA	CNOOC, ONGC
Intesa Sanpaolo SpA	NZBA	ONGC, Sinopec
Invesco Ltd	NZAM	CNOOC, ONGC
JPMorgan Chase & Co	NZAM	CNOOC
Mitsubishi UFJ Financial Group Inc	NZBA	CNOOC, ONGC, Santos
National Australia Bank	NZBA	Santos
Nomura Holdings Inc	NZBA	ONGC
PineBridge Investments	NZAM	Santos
Prudential PLC	NZAOA	CNOOC, ONGC, Santos, Woodside
Schroders PLC	NZAM	ONGC, Santos
Skandinaviska Enskilda Banken AB	NZBA	CNOOC
State Street Corp	NZAM	CNOOC
Sumitomo Mitsui Trust Holdings	NZBA	Sinopec
Swiss Re AG	NZAOA	Woodside
T Rowe Price Group Inc	NZAM	Woodside
UBS AG	NZBA	CNOOC, ONGC, Santos, Woodside
UBS Asset Management Holding Ltd	NZAM	Santos
Union Investment Luxembourg SA	NZAM	ONGC, Woodside

Source: GFANZ.

## Conclusion

**APAC supplies 10%-15% of global O&G.** The region produces 8.2% of oil and 16.6% of gas in the world. While its oil output has been declining at 0.7% per annum, gas production grew 3.1% a year over the last decade, after North America and the Middle East.

**The O&G sector is reliant on equity finance.** Company filings indicate that APAC's O&G companies on average rely more on equity than debt financing as a critical source of capital, recording an aggregate debt-to-total capital ratio of around 32%. Larger players exhibit high debt balances but more moderate gearing than their smaller peers.

**Constraints on debt availability are unlikely to greatly affect production.** Highly geared companies are more likely to be adversely affected if lenders choose to exit the sector instead of refinancing. However, the debt balances of highly geared companies indicate they are generally smaller and so, at a macro level, would unlikely make observable impacts to regional O&G production. Any ESG-driven shift away from fossil fuel investment by bond investors will have a more significant impact than a bank exit, given the sector has raised a significant proportion of its debt through bond issues.

**Net-zero strategies for O&G firms in APAC trail their global peers.** Regional O&G companies have begun setting net-zero targets and revenue diversification strategies. Most of them are at the early stages of decarbonization and do not have detailed implementation plans. O&G producers in APAC are also lagging global peers in investment in new technologies, with many adopting a wait-and-see approach to new energy investments.

**Shareholder attitudes will influence the ESG focus.** The low gearing among O&G companies in APAC suggests that changing their attitudes to ESG matters may be more effectively driven by shareholder requirements rather than lenders' policies. Many of the region's largest producers are state owned, with O&G contributing significantly to national gross domestic product outcomes. This is likely one of the drivers of slower transition investment in APAC compared with other markets.

**Capital raising for O&G will get harder.** GFANZ membership encompasses over 550 firms across more than 50 countries committed to aligning their US\$130 trillion or more in lending *and investment portfolios* with net-zero emissions by 2050, and with intermediate targets for 2030 or sooner. This covers all operations, not just capital provision. GFANZ members include O&G bondholders and lenders. As membership grows and net-zero targets are strengthened in the near future, capital raising for new O&G production capacity is likely to become harder.

**China and India have the opportunity to take a regional leadership role.** GFANZ's Asia-Pacific membership lacks representation from China or India, both of which have significant existing O&G operations and significant expansion plans in the region. The size, scale and profile of these two economies suggest a need for their active participation in the global move away from fossil fuels.

## About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. [www.ieefa.org](http://www.ieefa.org)

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Gaurav Ahuja and Cameron Fairlie contributed to the current report in their personal capacities. The views and opinions expressed in this report do not necessarily reflect those of Arup or its officers, directors or clients.

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