

ANNUAL REPORT 2022



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ANNUAL REPORT 2022



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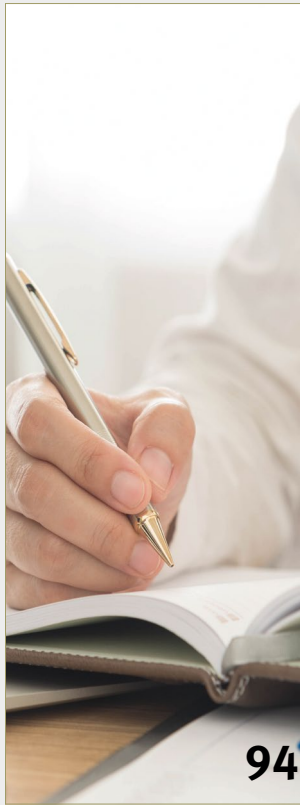
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Foreword

The year 2022 saw the world continue its battle — with gradual success — against the COVID-19 pandemic, as more people received the vaccine and countries continued to reopen. However, just as there was some light at the end of the pandemic tunnel, the geopolitical situation in Eastern Europe erupted in February, and the oil market saw volatility and uncertainty return.

This contributed to an energy crisis and the disruption and reforming of trading patterns. As Europe stopped purchasing Russian oil, it found new consumers in China, India and Turkey.

Many countries saw inflation rise and interest rates climb, and a cost of living crisis forced a reevaluation of energy policies to prioritize energy security.

Faced once again with difficult times, OPEC and countries under the Declaration of Cooperation (DoC) — with hard work and dedication — helped to restore market stability, wielding their six years of experience and deep connections to overcome the looming challenges.



Haitham Al Ghais
OPEC Secretary General

The group expressed their dedication through action, proving over the year they can adjust production both up and down as needed.

The OPEC and non-OPEC Ministerial Meeting (ONOMM) continued to meet monthly for much of 2022 in response to market uncertainties.

From the beginning of the year until mid-year, the ONOMM adjusted production upward by between 0.4–0.432 million barrels per day (mb/d), and a little more in June to 0.648 mb/d. There were a few more fluctuations and then a larger downward adjustment of 2 mb/d in October in anticipation of an economic slowdown. Although criticized by some at the time, the move proved to be positive for a balanced market.

A decision was also made at the 33rd ONOMM on 5 October to extend the DoC until the end of 2023, in the interest of oil market stability.

In addition, it was determined at this meeting to reduce the sittings of the DoC's monitoring body, the Joint Ministerial Monitoring Committee (JMMC), to every two months and the Meetings of the OPEC Conference and ONOMM to every six months, in accordance with the regular schedule prior to the pandemic.

Another major industry challenge, and one I raised at my first ONOMM as OPEC Secretary General in August, was that of chronic underinvestment in the oil sector in recent years. This has resulted in shrinking spare capacity, production constraints and reduced refinery output at a time when demand for crude and oil products continues to rise.

Despite headwinds, the world economy performed better than expected over the year, with growth figures revised up to reach

3.1 per cent for 2022, based on healthier economic performance in various key economies in 2H22. This included the US, which reached 2.1 per cent and the Euro-zone at 3.5 per cent. Russia's economy did not suffer as much as expected, rising to a contraction of 3.5 per cent.

By the end of the year, fears of a large recession had started to subside.

World oil demand for 2022 was at 2.5 mb/d, with non-OECD countries performing better in the last quarter, while the market anticipated a further recovery after China began to lift its zero-COVID-19 policy in December.

Climate change talks were ongoing throughout the year, culminating in the 27th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP27) in November in Sharm el-Sheikh, Egypt.

The energy crisis and geopolitical issues have in turn impeded advances in UN Sustainable Development Goal (SDG) 7 on energy access. Almost 90 million people in Asia and Africa who previously had access to energy were no longer in a position to pay for their basic energy needs.

With energy security high on the agenda throughout the year, there was recognition by many more institutions that all energies will be needed for a smooth energy transition, or transitions, that leaves no-one behind and that emissions from all sources must be addressed.

It was with great sadness that the Secretariat and the entire energy world mourned outgoing Secretary General Mohammad Sanusi Barkindo, who passed away suddenly just before the end of his second term on 6 July. After receiving several awards over the first half of 2022, he

was remembered throughout the industry after his passing.

As the year came to an end, a slowing dynamic for 2023 was predicted, with inflation remaining high and talk of possible further lifts in key interest rates.

Amid this uncertain landscape, OPEC and its DoC partners will continue coordinating efforts — examining the market daily, weekly and monthly — to support a balanced and stable oil market and play a major role in ensuring energy security.



Haitham Al Ghais
OPEC Secretary General



The world economy

In 2022, global GDP increased by 3.1 per cent, year-on-year (y-o-y). The year began with the hope that world economic activity would recover to surpass pre-pandemic levels. Healthy momentum was carried over from 4Q21, with positive developments across all countries. The onset of geopolitical conflict in Europe in February, however, marked the beginning of volatility and major uncertainty, which would prove to have a major impact on the economy of Europe, but also globally, throughout the year. Moreover, a resurgence of the COVID-19 Omicron variant, particularly in the OECD countries in 1Q22 took a toll on economic growth by limiting a further recovery in the contact-intensive services industry. To add to this, a renewed outbreak of COVID-19 in China prompted the coun-

try's government to issue highly restrictive lockdown measures in pursuit of its zero-COVID-19 policy. The complete shutdown of major cities in China towards the end of 1Q22 and lasting well into 3Q22 had a major negative impact on the country's economy. This came on top of an already crisis-ridden real estate market in the country.

As the year progressed, inflation made itself known across the globe, rising to levels not seen in many years and prompting action by key central banks. While the Central Bank of Brazil took decisive steps early on to raise the official interest rate to combat this trend, other central banks, such as the US Federal Reserve (the Fed) and the European Central Bank (ECB) took time to initiate rate hikes in response to soaring inflation, in

Table 1
World economic growth rates, 2021–2022, (per cent change over previous period)

Grouping/country	2021	2022
OECD	5.6	2.8
US	5.9	2.1
Euro-zone	5.3	3.5
Japan	2.2	1.2
Brazil	4.6	2.8
Russia	4.7	-3.5
India	8.3	6.8
China	8.1	3.0
Developing countries	5.5	4.8
Total world	6.0	3.1

Sources

OPEC, OECD, IMF and International Financial Statistics.

Note: All figures in this section are based on the February 2023 Monthly Oil Market Report.

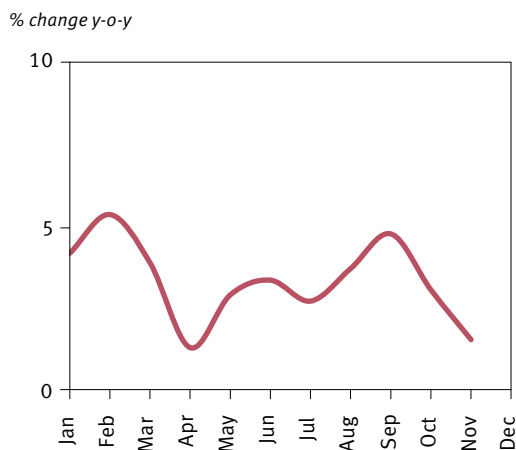
an attempt to not to choke off the nascent economic recovery from the impact of the COVID-19 pandemic. Another major concern was very high sovereign debt levels in several key countries, which may have been behind a more cautious approach, particularly by the ECB. By year end, however, key policy rates in advanced economies, as well as in several developing nations, had been raised to levels not seen in years in an effort to contain inflation. The combination of high inflation and resulting high key policy rates, especially in advanced economies, as well as in Brazil, India and other nations, led to the introduction of tax breaks and/or subsidies to counterbalance negative effects on real income.

Throughout 2022, global supply chain issues prevailed, both on account of the geopolitical developments in Eastern Europe and due to the zero-COVID policy in China.

The geopolitical tension in Eastern Europe, furthermore, caused commodity, and particularly energy prices, to soar, further pushing up inflation levels.

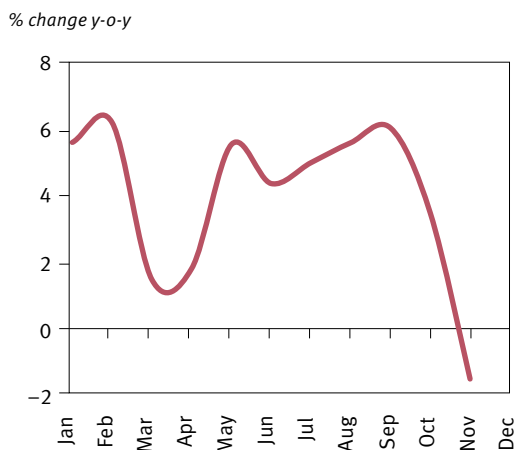
Labour markets in most regions remained tight, with unemployment numbers retracting to historical lows in some cases, adding to concerns about limited upside potential for economic growth. With no end in sight to these challenges, fears of recession in key economies emerged towards the fourth quarter of the year. However, later data saw that many economies, especially the US and Europe, managed to surprise to the upside regarding their 4Q22 economic performance. In addition, the sudden abandonment of the zero-COVID-19 policy in China in December marked a very positive ending to what could otherwise be considered a dismal year for the country in terms of economic growth.

Figure 1
Global industrial production, 2022



Source
Netherlands Bureau for Economic Policy Analysis and Haver Analytics.

Figure 2
World trade volumes, 2022



Source
Netherlands Bureau for Economic Policy Analysis and Haver Analytics.

OECD

OECD GDP growth stood at 2.8 per cent in 2022, compared with growth of 5.6 per cent in 2021. Despite challenges in the Euro-zone, the region's economic growth surpassed levels of expansion in the US and Japan, very much supported by strong growth in 1H22 and wide-ranging support measures in 2H22. The Euro-zone's growth was even higher than China's. On the other hand, the US was very much impacted by COVID-19-related social distancing measures in 1H22, along with other issues, and quarterly growth was clearly negative on a seasonally adjusted annualized rate. Japan experienced a volatile growth pattern and was very much impacted by a variety of external factors, thus experiencing relatively lower growth compared with the US and the Euro-zone. The rise in OECD inflation levels and consequent monetary tightening by the Fed and the ECB were central issues in 2022. Inflation reached a record high in the OECD and the Fed embarked on a considerable monetary tightening mission, with the ECB following suit mid-year. Even the relatively accommodative Bank of Japan (BoJ) started to lift long-term interest rates in December, amid strongly rising inflation.

OECD Americas

US

US gross domestic product (GDP) grew by 2.1 per cent in 2022. Reported GDP declines of 1.6 per cent seasonally adjusted annualized rate (SAAR) quarter-on-quarter (q-o-q) and 0.6 per cent SAAR q-o-q in 1Q22 and 2Q22, respectively, were followed by growth of 3.2 per cent SAAR q-o-q in 3Q22 and 4Q22 GDP growth of 2.9

per cent q-o-q SAAR, as provided by the Bureau of Economic Analysis. From a monetary perspective, the Fed continued its growth-dampening tightening efforts, lifting interest rates up to 4.5 per cent by year end. This came in response to annual inflation of eight per cent in 2022, compared with 4.7 per cent in 2021. Positively, towards the end of the year inflation slowed, standing at 6.4 per cent y-o-y. A slowdown in pent-up demand, commodity price softening and improvements in global supply chains may have supported the moderation of price increases towards year end. However, the labour market remained tight, with an annual unemployment rate of 3.6 per cent

OECD Europe

Euro-zone

After very strong GDP growth in 1H22 and the expectation of a considerable slowdown in 2H22 amid the fallout of the Russian-Ukrainian crisis, Euro-zone growth for 2H22 turned out better than expected. Contrary to general expectations, the Euro-zone's economy was able to avoid a decline in 4Q22. Growth in 3Q22 was also better than expected, as reported by Eurostat, the EU's statistical office. The 4Q22 figure stood at 0.4 per cent SAAR q-o-q, following 3Q22 growth of 1.2 per cent SAAR q-o-q. This comes, however, after strong 1Q22 GDP growth of 2.6 per cent SAAR q-o-q and 3.4 per cent SAAR q-o-q in 2Q22. Full year GDP growth stood at 3.5 per cent in 2022. While growth in the first three quarters of 2022 was supported by the ECB's relatively accommodative monetary policies, this dynamic changed considerably, with the ECB lifting key policy rates by 2.5 percentage points (pp) between July and December.

Inflation reached an annual level of 8.4 per cent y-o-y in 2022, after seeing 2.6 per cent y-o-y in 2021.

OECD Asia-Pacific

Japan

In an opposite dynamic to the US and the Euro-zone, Japan saw only muted GDP growth of 1.2 per cent in 2022. Japan's growth dynamic remained impacted by a variety of external factors, including developments with its important trade partner China, COVID-19-related developments and the effects of monetary policy in light of rising inflation. A decline in 1Q22 of 1.8 per cent SAAR q-o-q, due to COVID-19-related social distancing measures, was followed by a strong rebound in 2Q22, when GDP growth stood at 4.5 per cent SAAR q-o-q. While 3Q22 GDP was reported to have contracted by 0.8 per cent SAAR q-o-q, there was some positive momentum in 4Q22 at three per cent SAAR q-o-q, in particular supported by domestic demand in the services sector. Though inflation had not been an issue for the Japanese economy for a long time, it rose by four per cent y-o-y in December, compared with an already elevated 3.8 per cent in November and 3.7 per cent in October. This lifted 4Q22 inflation to 3.9 per cent y-o-y, the highest level since the beginning of the 1990s, except for a period in 2014 when a sales tax increase briefly lifted total inflation to around the same level. This led the BoJ to gradually tighten monetary policy by adjusting its yield curve control policy. At the end of December, the BoJ announced that it would allow ten-year bond yields to fluctuate by 0.5 pp above or below its target of zero, replacing the previous band of 0.25 pp, while keeping overnight interest rates at minus 0.1 per cent. This followed limited monetary policy tight-

ening by the BoJ throughout 2022. However, the bank pursued a relatively much more accommodative monetary policy than its counterparts in other advanced economies. These policies also significantly contributed to the weakening of the yen in 2022, especially compared with the US dollar, which peaked in October to stand at almost 150 yen to the US dollar at the end of the month.

Emerging countries

Brazil

Brazil's GDP is estimated to have expanded by 2.8 per cent in 2022. While for most of 2022, Brazil's economic activity surprised to the upside, momentum slowed towards the end of the year. Growth in 2022 was supported to a significant extent by pre-election fiscal measures and higher commodity prices. Moreover, monetary policies remained tight throughout the year and key policy rates rose to reach 13.75 per cent on average in 2H22, after hitting 9.25 per cent in December 2021. This was a reaction to the rise in inflation, which reached a yearly average of 9.3 per cent in 2022, but retracted towards the end of the year to 6.5 per cent in October, six per cent in November and 5.9 per cent in December.

Russia

Over 2022, Russia managed to limit the decline in its GDP. The contraction is estimated at -3.5 per cent for 2022, much lower than anticipated after the Ukraine conflict started in February. The economy has been significantly impacted by external political and economic pressure in 2022, especially through sanctions, and a slowdown in domestic consumption. However, high income from exports – primarily commodities – and

government spending helped to compensate these factors to a large extent. Additionally, a well-managed central bank policy and sound commodity markets in 2022 helped shield the economy from more severe effects.

India

India's economy continued its solid, albeit gradually slowing, growth dynamic until year end. GDP growth for 2022 is estimated to have reached 6.8 per cent. This momentum was very much supported by domestic demand along with the services sector and agriculture. While robust, this growth is still below pre-pandemic levels. As in other economies, a shift from the manufacturing to the services sector is becoming increasingly apparent. After growth of 3.6 per cent y-o-y was seen in 1Q22, the economy accelerated its output dynamic into 2Q22 with GDP growth of 14.1 per cent y-o-y. GDP growth in 3Q22 stood at 6.7 per cent, while 4Q22 GDP growth is estimated to have slowed further, though remaining well supported. The Reserve Bank of India lifted interest rates throughout the year, hiking them by 2.25 percentage points up to 6.25 per cent, and was thus successful in reducing inflation. Inflation averaged 6.7 per cent in 2022, but fell below the six per cent mark towards the end of the year, when it stood at 5.7 per cent. With these measures, India provided a sound base for further near-term economic growth.

China

China's economy faced a significant slowdown in 2022, with growth of three per cent compared with 8.4 per cent in 2021. That led the Chinese government to reverse course on its strict COVID-19 policy in December, a considerably policy change. Also, it continued its support for the ailing property sector.

These measures, implemented at the end of the year, are forecast to support growth primarily in 2023, while GDP growth in 2022 was relatively low. In the first three quarters of 2022 it stood at only three per cent y-o-y on average and in 4Q22 it was at 2.9 per cent y-o-y. Most of the year was materially affected by the country's zero-COVID-19 policy. An important change in course ending restrictions for the property sector was introduced in November, after a deleveraging policy was implemented in mid-2020. At the time, China had lowered its interest rate in order to stimulate economic growth during the COVID-19-induced downturn, which positively affected the property sector. As a consequence, the sector was required to follow three restrictions to prevent insolvency: to hold cash equal to short-term borrowing; limit liabilities to 70 per cent of assets; and have net debt equal to, or below, equity. But in light of the severe fall in sales in 2022, combined with COVID-19 restrictions, the sector remained under considerable pressure. The inflation rate stood at a low 1.9 per cent y-o-y in 2022, mirroring the consumption downturn in China, which curbed inflation as the country's zero-COVID-19 policy impacted consumer demand.

Developing Countries

Developing economies benefitted from foreign investment and exports in 2022, certainly also aided by a yearly price rise in commodities, which provided a major support factor. Economic growth in developing countries is estimated to have expanded by 4.8 per cent y-o-y in 2022 following growth of 5.5 per cent y-o-y in 2021. Africa's GDP growth is estimated to have reached 3.4 per cent y-o-y in 2022 following growth of 4.4 per cent y-o-y in 2021.

Latin America's GDP is estimated to have grown by 3.6 per cent y-o-y following growth of 7.2 per cent y-o-y in 2021. Other Asia's economic growth is estimated to have reached 5.1 per cent y-o-y in 2022 following growth of 3.5 per cent y-o-y in 2021. GDP growth in the Middle East and North Africa region is estimated at 5.3 per cent y-o-y in 2022, following 4.1 per cent in 2021.

Exchange rate of the US dollar

The US dollar (USD) index recovered from the previous year's decline, increasing by 8.6 per cent y-o-y. During 1H22, an increasingly hawkish Fed, divergences in monetary policies and stronger performance by the US economy relative to its peers, supported the USD rally. Additionally, geopolitical developments in Eastern Europe elevated the safe haven appeal of the USD, amid rising commodity prices and inflationary pressures.

During 2H22, the USD was under pressure due to increasing hawkishness from other major central banks, particularly in developed market economies. Major central banks stepped up their monetary tightening efforts in order not only to reduce inflationary pressures, but also currency depreciation. Nonetheless, the USD continued to advance, supported by a stronger US economy relative to its peers.

In developed market currencies, the USD rose against the euro by 6.8 per cent y-o-y, by 19.2 per cent against the yen, and by 8.7 per cent against the pound sterling in the same period.

In terms of emerging market currencies, the USD rose by nine per cent y-o-y against the rupee and 9.7 per cent against the yuan in the same period. Meanwhile, it fell by 7.3 per cent y-o-y against the real. It is worth mentioning that Brazil raised interest rates early in 1H22 at a time when its economy received support from rising commodity prices.

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Oil market developments

Crude oil price movements

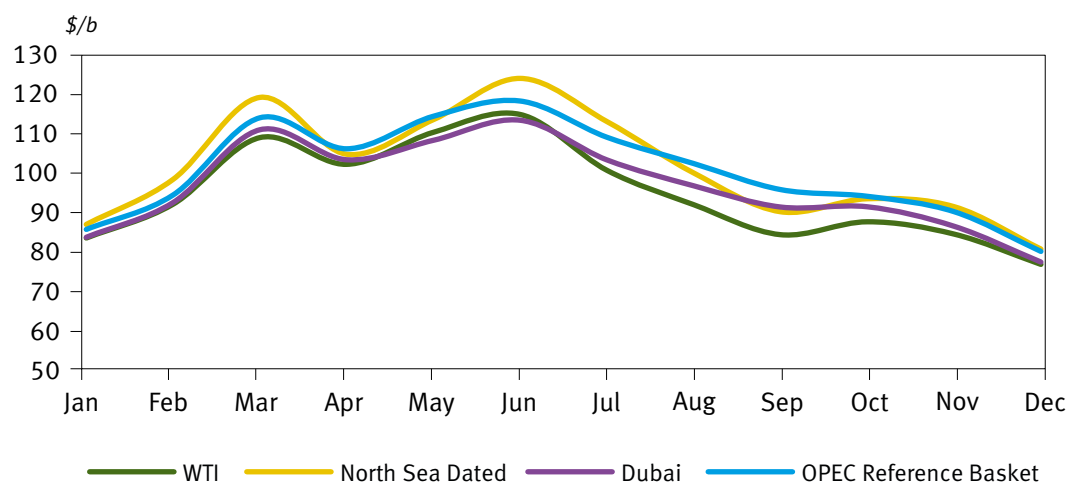
Oil prices registered solid gains in 2022, with major crude oil benchmarks averaging about \$30, or 43 per cent higher, compared with the previous year. The oil price rally mainly happened in 1H22, driven by the outbreak of geopolitical tension in Eastern Europe, which raised worries of a large oil supply disruption and added a high-risk premium to prices. This came amid continuing oil demand recovery after the COVID-19 demand shock and a decline in OECD commercial oil stocks for several consecutive months. However, oil prices trended lower in 2H22, falling six consecutive months amid elevated volatility and tumbling market liquidity, threatening the market price discovery function. Market liquidity in the two major futures

contracts ICE Brent and NYMEX WTI dropped to its lowest point since 2014.

The oil price decline was due to a deteriorating global oil fundamental outlook and growing concerns about the economy amid subdued macroeconomic data, declining global manufacturing activity, soaring global inflation and a surging US dollar value against a basket of other major currencies to its highest point in more than two decades. This came in addition to lower demand from China, a resurgence in COVID-19 cases in several countries in 3Q22, including China, and lower-than-expected US gasoline consumption during the summer driving season, which weighed on the demand outlook.

On the supply side, worries about a tight supply outlook eased after the return of

Figure 1
Monthly oil price movements, 2022



Source
Argus, OPEC and Platts.

Note: All figures in this section are based on the February 2023 Monthly Oil Market Report.

crude production in several regions, including Libya and Ecuador, and sustained crude supply from the US strategic petroleum reserves (SPR), along with historically high levels of US crude production, while market participants anticipated higher crude production in other regions. Moreover, oil supply disruptions in Eastern Europe did not pan out to be as serious as previously anticipated.

Crude oil supply adjustments by OPEC Member Countries and non-OPEC countries participating in the DoC continued to play an important role in 2022 in balancing the global oil supply/demand equation, in order to ensure an adequate supply of oil and mitigate volatility.

The value of the OPEC Reference Basket (ORB) rose for the second consecutive year in 2022. All ORB component values rose, alongside their perspective crude oil benchmarks, higher official selling prices and crude differentials. Over the year, the ORB increased by \$30.19, or 43.2 per cent, on average, compared with 2020, to settle at \$100.08 per barrel (\$/b).

Spot prices rose strongly last year, performing better than futures prices, specifically in 1H22, reflecting strong physical oil market fundamentals, along with strong demand for prompt available barrels, as buyers bid high premiums to secure their requirements amid supply outages in some producing countries and mounting worries of a large oil supply disruption in Eastern Europe. The risk premium was high in Europe, pushing the Brent benchmark value significantly higher compared with other benchmarks.

On a yearly average, North Sea Dated and Dubai rose in 2022 by \$30.30 and \$26.94, or 42.8 per cent and 38.8 per cent, respectively, y-o-y to stand at \$101.10/b

and \$96.32/b, while WTI rose by \$26.38/b, or 38.7 per cent, to average \$94.55/b.

Crude oil spot prices were supported by robust physical crude oil market fundamentals, healthy refining margins, a sustained decline in global oil stocks and tightening oil product markets, specifically for middle distillates. A rally in futures markets also boosted spot prices amid several planned and unplanned oil supply disruptions in early 2021, along with expectations of a healthier-than-anticipated global oil demand recovery on the back of easing COVID-19-related mobility restrictions in several European countries and a lessening impact of the Omicron variant on oil demand.

The oil market witnessed several supply outages and disruptions in December 2021 and January 2022, including in Kazakhstan, Libya, Canada and Ecuador, in addition to rising geopolitical risk in other major oil-producing regions, such as Eastern Europe and the Middle East. This contributed to pushing the North Sea Dated benchmark in March to its highest daily settlement since July 2008.

However, crude spot prices turned lower in 2H22, mainly driven by selloffs in futures markets amid elevated volatility, which was fuelled by deteriorating global economic and oil demand outlooks. After hitting their highest monthly average for several years in June, crude spot prices started on a downward trend on easing concerns about oil supply tightness, specifically in the Atlantic Basin, and the return of supply in several regions after the resolution of outages, which contributed to reducing the risk premium, particularly for the Brent complex benchmark.

In 3Q22, spot prices came under more pressure from softer demand in the spot market ahead of the refinery maintenance

Table 1

Average quarterly and yearly spot prices for selected crudes, 2021–2022

\$/b

	2021	1Q22	2Q22	3Q22	4Q22	2022	per cent Change 2022/21
OPEC Reference Basket	69.89	98.11	112.62	101.82	87.71	100.08	43.2
OPEC Basket crudes							
Arab Light	70.65	98.19	113.85	104.34	90.10	101.64	43.9
Basrah Medium	68.76	96.71	110.89	97.95	83.76	97.33	41.6
Bonny Light	70.63	102.73	115.84	106.29	89.57	103.63	46.7
Djeno	63.35	94.27	106.53	93.04	80.79	93.65	47.8
Es Sider	69.16	101.29	114.49	101.69	87.62	101.28	46.4
Girassol	71.31	104.15	115.74	105.60	89.08	103.66	45.4
Iran Heavy	69.80	97.55	112.73	102.27	87.04	99.92	43.2
Kuwait Export	70.50	98.34	114.05	103.82	88.46	101.19	43.5
Merey	51.45	74.72	88.05	79.41	65.58	76.96	49.6
Murban	70.09	97.78	110.86	98.70	88.24	98.89	41.1
Qatar Marine	69.99	96.10	110.15	100.87	86.53	98.33	40.5
Rabi Light	70.34	101.26	113.52	100.03	87.78	100.64	43.1
Saharan Blend	70.89	104.19	117.91	104.08	90.81	104.24	47.0
Zafiro	71.09	103.04	116.34	103.41	88.72	102.88	44.7
Other OPEC crudes							
Arab Heavy	69.98	97.27	112.75	102.14	86.77	99.75	42.5
Dubai	69.38	95.84	108.03	96.63	84.77	96.32	38.8
Dukhan	69.92	96.70	110.70	101.97	88.13	99.31	42.0
Forcados	70.81	104.52	118.61	106.42	90.11	104.76	47.9
Iran Light	67.90	100.16	109.70	93.73	82.22	96.28	41.8
Zueitina	68.99	101.37	114.69	101.86	87.89	101.46	47.1
Other non-OPEC crudes							
North Sea Dated	70.80	101.72	113.98	100.49	88.24	101.10	42.8
Isthmus	66.20	92.73	107.74	90.16	76.81	91.85	38.7
Oman	69.46	96.08	107.71	96.90	84.81	96.38	38.8
Suez Mix	67.77	100.03	109.57	93.60	82.09	96.15	41.9
Tapis	72.82	107.70	123.14	116.69	98.59	111.57	53.2
Urals	69.45	91.24	82.07	76.98	63.65	78.47	13.0
West Texas Intermediate	68.17	94.94	108.88	91.81	82.66	94.55	38.7
West Texas Sour	68.32	94.53	108.72	92.50	81.36	94.27	38.0
Differentials							
Bonny Light – Arab Heavy	0.65	5.46	3.09	4.15	2.80	3.88	
North Sea Dated – WTI	2.63	6.78	5.10	8.68	5.58	6.55	
North Sea Dated – Dubai	1.42	5.88	5.95	3.86	3.47	4.78	

Notes

Quarterly and yearly averages based on daily quotations.

Source

Platts, Argus, direct communications and OPEC.

season. Sustained crude supply from the US, including from US SPR, and elevated export levels also contributed to alleviating worries about supply tightness. Spot prices declined more than futures prices in a sign that the crude market was better supplied than previously anticipated. Nonetheless, sustained crude buying kept crude differentials high and the market structure in backwardation, and strong refining margins in major trading hubs limited the decline of spot prices.

Spot prices extended losses in 4Q22, fuelled by heavy sell-offs in futures markets amid elevated volatility and growing concerns of an economic slowdown in major economies. This dampened market sentiment regarding demand outlooks, adding to uncertainty about the demand recovery in China, which saw the reinstatement of lockdown measures and mobility restrictions in several major cities. Signs of a well-supplied crude market caused by a slowdown in buying interest from European and Asia-Pacific refiners, lower refining margins in Europe and on the US Gulf Coast (USGC), and a sharp decline in gasoil/diesel cracks in almost all markets, added downward pressure to spot prices.

The premium of light sweet crudes over heavy sour widened significantly in 2022 compared with the previous year in all major regions, specifically Europe and Asia. This was primarily driven by a high-risk premium that supported the light sweet crude benchmark North Sea Dated compared with other references, as well as better performance of light and medium sweet crudes compared with heavy sour crudes. Historically high light distillate margins, including for gasoil/diesel and gasoline, compared with heavy and sour distillate product margins, such as for fuel oil, and high desulfurization

costs due to high gas prices, contributed to widening sweet/sour crude differentials, as refiners favoured sweeter crudes to reduce operating costs.

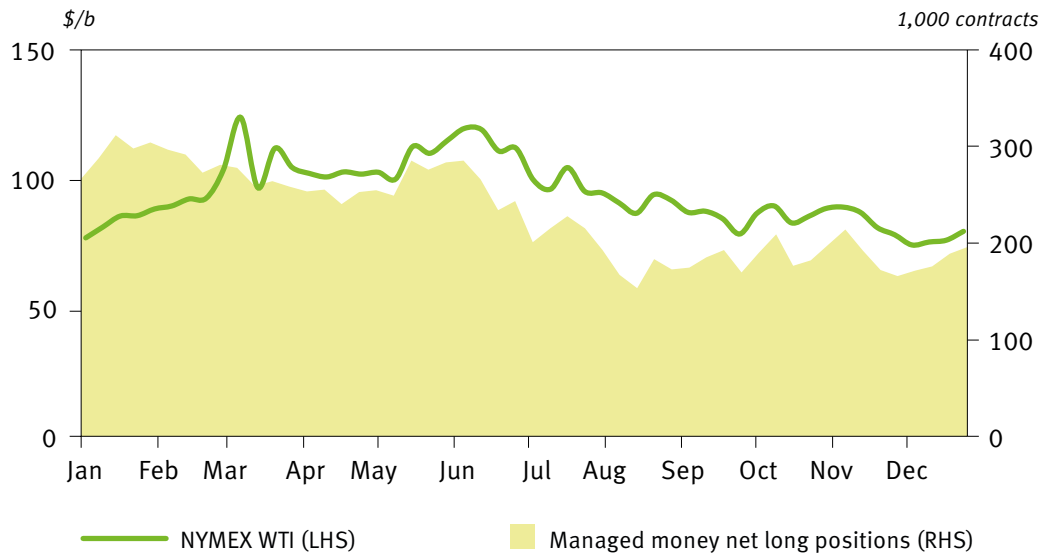
However, the sweet/sour crude spread narrowed slightly in 3Q21, mainly in August and September, amid easing supply tightness in sweet crude and lower light distillate product margins, including for gasoline and naphtha cracks. Meanwhile, middle distillate margins remained strong, supporting medium crude quality with high middle distillate yields. The release of large volumes of light sweet crude from the US SPR and the opening of west-to-east arbitrage weighed on the value of light sweet crude in the USGC and East of Suez markets.

In 4Q22, sweet/sour crude differentials remained wide in all major regions compared with historical levels, amid a relatively weak sour crude market. The value of medium and heavy sour crude fell more than for light sweet crude. This resulted in a combination of high availability of sour crude, low demand, and a wide spread between light/medium distillate and heavy distillate product margins, for example the diesel-High Sulfur Fuel Oil (HSFO) spread. Very low HSFO prices probably prompted refiners to substitute some sour crude feedstock with HSFO.

Crude oil futures

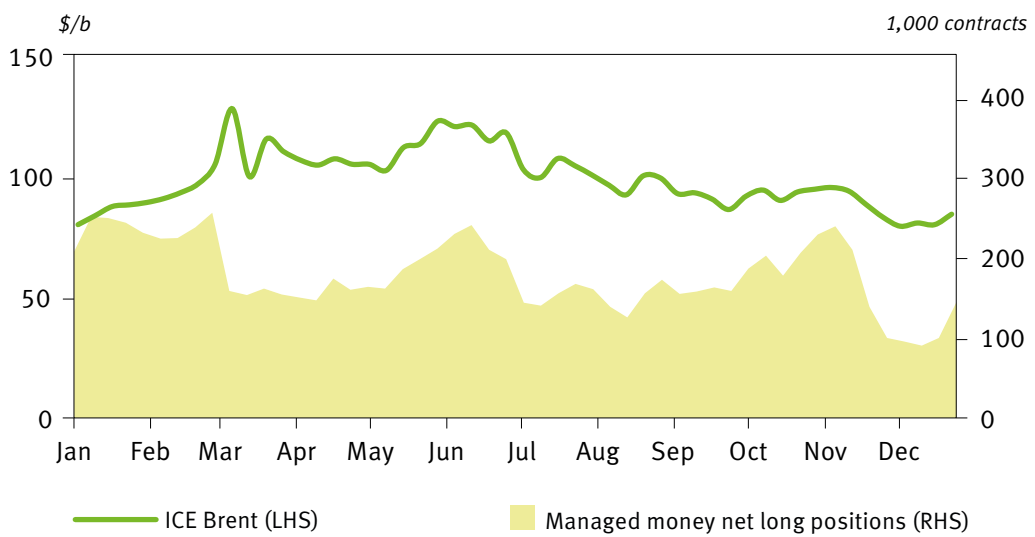
Crude oil futures markets witnessed a highly volatile year in 2022 and were marked by a sharp drop in liquidity of about 20 per cent, along with a decline in trading volume. High uncertainty in the market, amplified by geopolitical tensions in Eastern Europe, rising margin calls, increasing hedging costs and soaring price volatility, prompted investors to

Figure 2
NYMEX WTI price versus managed money net long positions, 2022



Source
 Commodity Futures Trading Commission, CME Group and OPEC.

Figure 3
ICE Brent price versus managed money net long positions, 2022



Source
 Intercontinental Exchange and OPEC.

reduce their speculative exposures and risky positions, while others kept the same level of financial exposure by reducing the volume of contracts held. This was due to higher margin calls and higher prices for futures and options and other financial instruments.

Crude futures prices rallied in 1H22, with ICE Brent hitting its highest daily settlement since 2008 in March, buoyed by strong global oil market fundamental and non-fundamental factors. Earlier in the year, the market was supported by the prospect of strong world supply and demand fundamentals and a decline in OECD commercial oil stocks for several consecutive months to below the latest five-year average, along with 2015–2019 average metrics. The risk of a supply disruption following the outbreak of geopolitical tension in Eastern Europe pushed futures prices higher. The rise in oil prices was accompanied by elevated market volatility – specifically in March and April – fuelled by high uncertainty regarding oil supply and demand outlooks amid intensifying geopolitical conflict in major producing regions and a resurgence of the COVID-19 pandemic in some areas, along with surging global inflation and a rising risk of economic slowdown.

In 2H22, oil futures prices reversed trend and turned lower on heavy selloffs in equity and futures markets that were amplified by growing uncertainty about the global economy and energy demand growth, along with concerns that aggressive interest rate hikes from central banks, including the Fed and the ECB, would slow economic activity. Weakening global manufacturing activity, soaring global inflation and a surging US dollar value against a basket of other major currencies to its highest point in more than two decades, weighed heavily on oil prices.

The oil price decline was accelerated by a resurgence in COVID-19 cases in 3Q22, including in China, and signs of lower-than-expected US gasoline consumption during the summer driving season. China's refinery crude runs declined significantly in 2Q22 and 3Q22 amid a lack of export quotas for products and surging COVID-19 cases, while the country's crude oil imports from the international market remained low compared with the previous year. The oil demand outlook deteriorated further in 4Q22 due to renewed local lockdowns and tightening mobility restrictions in some large cities in China.

Aggressive monetary tightening by major central banks, including the Fed and the ECB, added to concerns about an economic slowdown and prompted money managers to heavily liquidate their long positions, which weighed on oil and other commodity prices and contributed to raising market volatility.

Worries about a tight supply outlook eased after the return of crude production from several regions, including Libya, Ecuador and Kazakhstan, higher oil production in Norway, and sustained crude supply from SPR, while traders in futures markets anticipated higher crude production in some regions.

However, a drop in US dollar value, signs of supportive physical oil market fundamentals and expectations of rising gas-to-oil switching limited the oil price decline. Investors also weighed potentially lower oil supply amid persistent geopolitical tension in Eastern Europe, as European Union member countries decided to ban seaborne imports of crude oil from Russia by the end of 2022.

The spread between ICE Brent and NYMEX WTI widened in 2022 compared

with 2021, averaging nearly \$5/b. Escalating geopolitical tension in Eastern Europe and prospects of tightening supply on the continent, along with a higher geopolitical risk premium for the Brent complex, pushed ICE Brent much higher than other benchmarks, including NYMEX WTI. Meanwhile, large volume releases from US SPR limited the NYMEX WTI price rise compared with ICE Brent. NYMEX WTI remained under pressure from growing concerns about the US economic outlook and soft US gasoline demand. The spread between ICE Brent and NYMEX WTI widened in 2022 by \$1.80 on average, compared with the previous year, to stand at \$4.67/b.

The spread between the ICE Brent and NYMEX WTI first-month premium widened further in 2H22, averaging about \$6/b, as the value of WTI futures weakened more than international benchmark Brent futures. In 3Q22, the Brent-WTI futures spread widened by \$2.81 q-o-q to average \$6.27/b, while in July, the spread rose to \$11/b on a daily basis. ICE Brent remained more supported by the supply/demand balance outlook in Northwest Europe compared with the US market, including at trading hub Cushing, as well as by a geopolitical risk premium that lent support to the benchmark.

A wide transatlantic spread and sustained crude supply from the US SPR boosted US crude oil exports on the international market to a record high. US exports averaged more than 4 mb/d in 4Q22, according to US Energy Information Administration weekly data.

Hedge funds and other money managers sharply sold off long positions in 2022, contributing to a drop in market liquidity and accelerating the oil price decline. Elevated oil price volatility, equity market selloffs, an uncertain oil supply outlook

and the resurgence of COVID-19 in China, which clouded the economic and oil demand outlook, reduced investors' risk appetite and kept some of them out of the market. The ICE exchange decision to raise margins for first-month Brent crude futures from 25 March also prompted some participants to reduce their financial exposure. In 2022, despite higher oil prices y-o-y, the market witnessed a sharp selloff, with hedge funds and other money managers cutting combined futures and options net long positions related to ICE Brent and NYMEX WTI by about 53 per cent, representing the sale of an equivalent of around 294 million barrels (mb).

Speculators sharply cut bullish speculative positions in the June-September period amid declining oil prices, associated with elevated market volatility and growing worries about a severe economic slowdown that could negatively affect global oil demand. A resurgence of COVID-19 in China, prompting the reinstatement of lockdown measures, raised concerns about the demand outlook and impelled money managers to cut bullish positions. Speculators tended to anticipate declining prices amid a market narrative of worsening economic and oil demand outlooks. Between the weeks of 7 June and 18 August, speculators were sellers of a net equivalent of 236 mb, or about 46 per cent, of total net long positions. Speculators resumed selling in November, as elevated oil price volatility and highly uncertain oil demand and supply outlooks due to lockdowns in China and the impact of the price cap on Russian crude exports continued to weigh on investor sentiment. In November, total futures and options net long positions in both ICE Brent and NYMEX WTI dropped to their lowest point since April 2020, and speculators

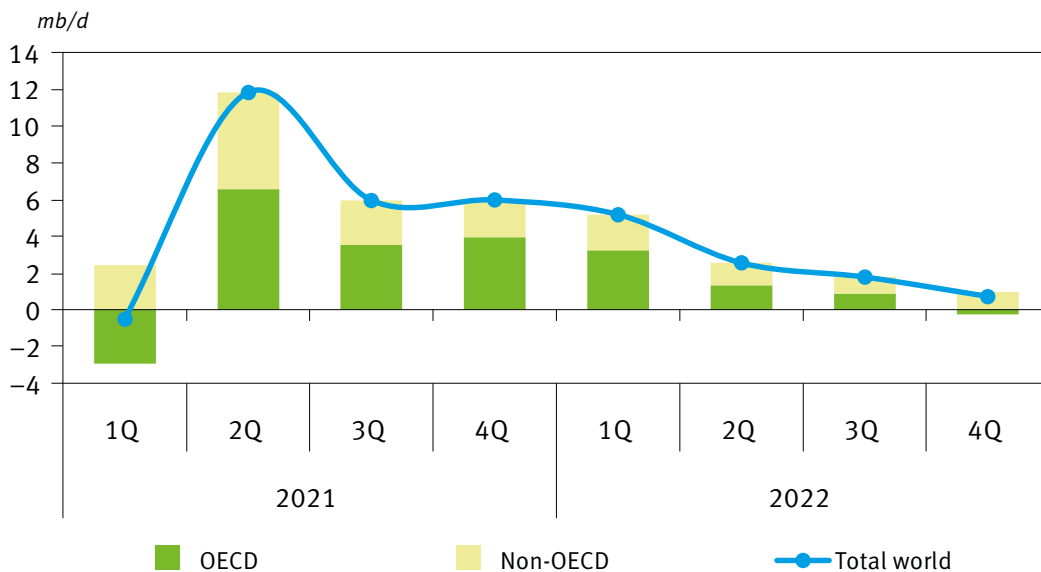
were sellers of a net equivalent of about 161 mb. Open interest also dropped in November and continued its downward trend for several months, falling in the last week of November to its lowest point since November 2014.

The market structure of all three major crude benchmarks – ICE Brent, NYMEX WTI, and DME Oman – remained in sustained backwardation for most of 2022, as oil market fundamentals stayed strong on the prospect of a slow increase in non-OPEC oil supply growth, while OECD commercial oil stocks continued to decline. Futures forward curves steepened significantly in March in all markets, as investors were pricing a potential short-term large oil supply shortage amid escalating geopolitical tension, which supported front-month contracts compared with forward contracts.

Futures forward curves flattened significantly in 3Q22, particularly in August and September, specifically in the nearest time spreads, as worries about short-term oil supply shortages eased, while traders shifted their focus to uncertainty about the short-term oil demand outlook amid a resurgence of COVID-19 lockdowns in China. Moreover, weakening demand in the physical market ahead of the refinery maintenance season sustained oil supply from SPRs and an ongoing increase in OECD commercial stocks in July and August, adding downward pressure to front-month contracts and contributing to flattening futures forward curves.

However, in December the front-end of the ICE Brent and NYMEX WTI forward curve flipped into contango, signaling easing worries about oil supply disruptions in the short

Figure 4
World oil demand by main region, y-o-y growth, 2021–2022



Source
OPEC.

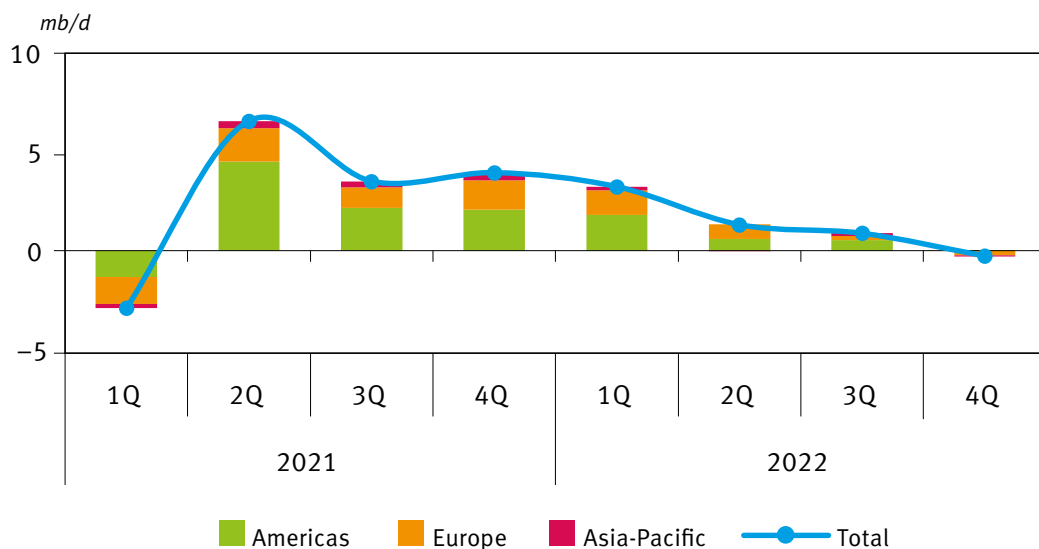
term, despite the EU embargo on seaborne imports of Russian crude oil starting on 5 December, and a softer demand outlook. Signs of a well-supplied physical crude market and rising unsold volumes, along with a weakening petroleum product market, pressured prompt month contracts down, which contributed to a widening contango structure. Meanwhile, worries about the global economy and demand outlook amid monetary policy tightening and uncertain COVID-19 developments in China dampened market sentiment. The market perception of the short-term supply/demand balance outlook softened.

World oil demand in 2022

In 2022, world oil demand increased by 2.5 mb/d y-o-y, to average 99.6 mb/d, below

pre-pandemic levels. In terms of main regions, the OECD saw an increase of about 1.3 mb/d y-o-y, though it remained below pre-pandemic levels. The non-OECD also posted y-o-y growth of near 1.3 mb/d, surpassing pre-pandemic levels. World oil demand remained healthy after growth of 5.2 mb/d y-o-y was seen in 1Q22, though subsequent quarters were impacted negatively by slowing momentum in OECD economic activity due to high inflation and geopolitical development-induced, trade-related bottlenecks. Furthermore, a resurgence of the COVID-19 pandemic in China weighed on oil demand. In 2Q22, an increase in COVID-19 cases in China and slow economic activity in OECD Asia-Pacific weighed on mobility and other economic activity, negatively impacting oil demand. In 3Q21

Figure 5
OECD oil consumption by quarter and region, y-o-y growth, 2021–2022



Source
 OPEC.

and 4Q21, weaker oil demand was seen due to the zero-COVID policy in China and weak economic activity in OECD Europe and OECD Asia-Pacific. In the OECD, oil demand was driven by the US, supported by strong mobility, an accelerated air travel recovery, as well as manufacturing activity. Other OECD countries also saw a strong air travel recovery, healthy mobility and stable manufacturing activity. These factors supported demand for transportation and industrial fuels in the OECD region, particularly in major consuming countries. In the non-OECD, India, the Middle East and Other Asia were drivers of oil demand, as China was under lockdown. On the back of steady transportation and manufacturing requirements, as well as an accelerated air travel recovery, oil demand was well supported in 2022.

A host of factors, including healthy economic and manufacturing activity, particularly in OECD Americas, supported demand in 2022. In the non-OECD region outside China, diesel demand grew by 0.9 mb/d y-o-y. Furthermore, a recovery in global airline activity continued to support demand for jet fuel, which grew by 0.6 mb/d y-o-y in 2022. Furthermore, residential activity helped rejuvenate liquefied petroleum gas (LPG) demand, which rose by 0.6 mb/d y-o-y, largely supported by residential sector requirements for heating and cooking. Rising mobility, particularly in the OECD and non-OECD outside China, supported gasoline growth by 0.4 mb/d y-o-y. On the back of oil-to-gas switching, particularly in Europe and Asia, residual fuel grew by 0.3 mb/d y-o-y. However, naphtha weakened due to fragile petrochemical margins and posted a decline of 74 thousand barrels per day (tb/d) y-o-y.

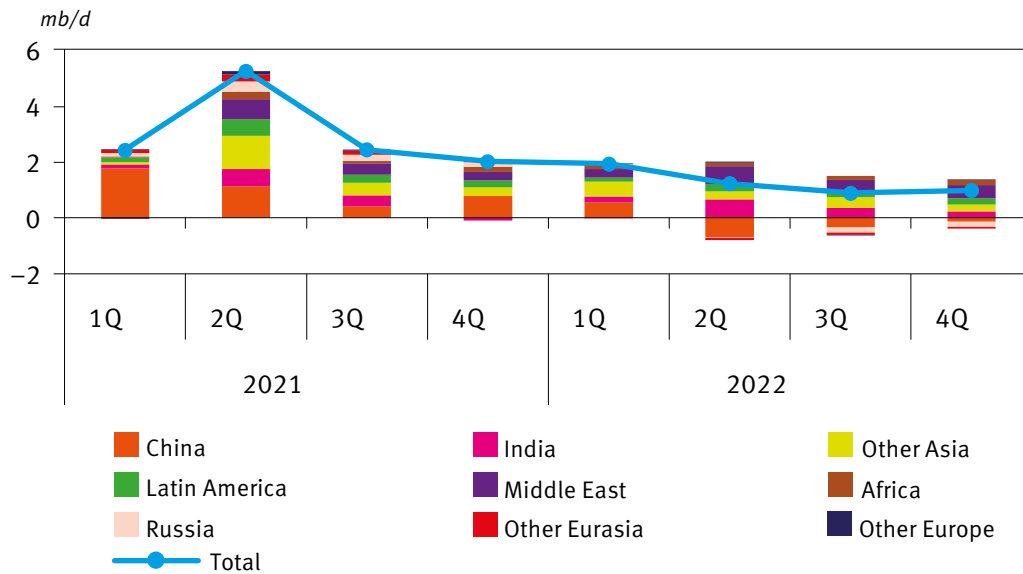
OECD America

The latest OECD Americas annual oil demand data shows y-o-y growth of 0.7 mb/d in 2022. Oil demand was backed by relatively healthy GDP growth combined with petrochemical industry requirements and steady industrial sector growth. Furthermore, an accelerated air travel recovery and strong mobility aided steady oil demand growth in the region. In 2022, LPG was the main driver of oil demand, backed mainly by the residential consumption of propane for space heating, generally seen in non-urban areas where other heating fuels are limited or expensive. Propane was also used throughout the year for water heating, cooking and clothes drying in the US. Its demand grew by 0.3 mb/d y-o-y followed by jet kerosene, which responded positively to the air travel recovery, posting y-o-y growth of 0.3 mb/d. Gasoline grew by 0.2 mb/d y-o-y and diesel gained 0.1 mb/d y-o-y. Residual fuel reported y-o-y growth of 20 tb/d.

OECD Europe

European oil demand grew y-o-y by 0.5 mb/d in 2022. However, demand was affected by geopolitical developments, which created some supply chain bottlenecks that weighed on economic activity in the region. In 2022, demand was mainly driven by jet/kerosene, which rose by 0.4 mb/d y-o-y due to rising air travel, nearly reaching pre-pandemic levels. Diesel use originating from manufacturing activities and trucking grew by 0.2 mb/d y-o-y. Demand for residual fuels responded positively to high natural gas prices, growing by 50 tb/d y-o-y, which led to oil-to-gas switching. Gasoline demand also grew by 0.1 mb/d y-o-y in 2022. Furthermore, LPG grew slightly by 13 tb/d y-o-y, while naphtha was weak due to low demand for gasoline blending in the region.

Figure 6

Non-OECD oil consumption by region and quarter, y-o-y growth, 2021–2022

Source
OPEC.

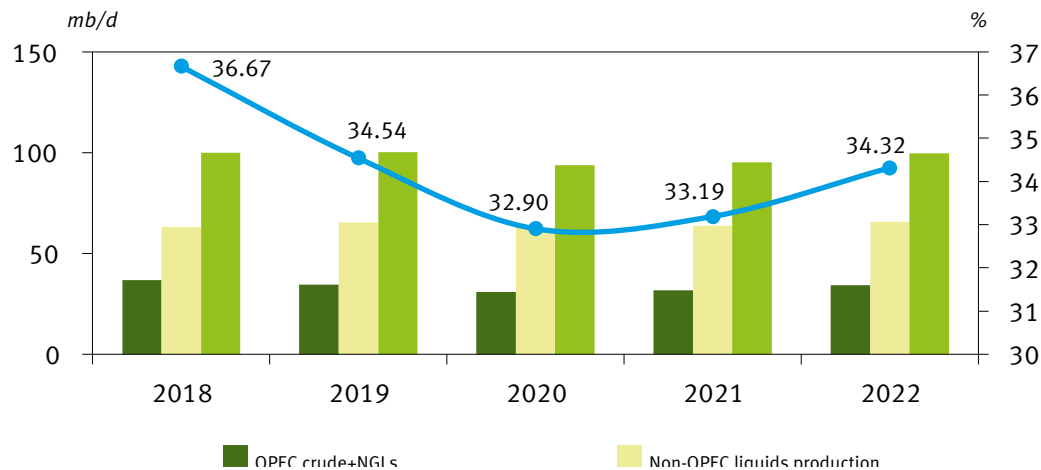
OECD Asia-Pacific

OECD Asia-Pacific recorded growth of 60 tb/d y-o-y in 2022, with Australia being the main driver of oil demand for the region, as Japan and South Korea, the area's two largest economies, faced some economic headwinds over much of 2022. Demand was supported by an air travel recovery and oil-to-gas switching, as well as petrochemical sector requirements. Looking at the share of oil products in the region's oil demand configuration, jet fuel grew by 70 tb/d y-o-y, while LPG benefited from strong petrochemical and household sector requirements to grow by 48 tb/d y-o-y. Residual fuels benefited immensely from oil-to-gas switching to increase by 26 tb/d y-o-y. Diesel demand increased by 20 tb/d y-o-y. However, naphtha was depressed by 50 tb/d.

Non-OECD**China**

China's oil demand contracted y-o-y by 0.2 mb/d in 2022. It was depressed by the resurgence of COVID-19, leading to an extension of the zero-COVID-19 policy, which weighed heavily on mobility and manufacturing activity, resulting in a negative impact on demand for some oil products. Oil demand in China was driven by diesel over the year – originating from the industrial and agricultural sectors – which recorded y-o-y growth of 0.18 mb/d. Vibrant petrochemical sector requirements supported naphtha demand, which rose by 0.12 mb/d y-o-y. LPG posted y-o-y growth of 80 tb/d due to residential sector requirements for cooking and heating, while residual fuels grew by 26 tb/d y-o-y.

Figure 7

OPEC¹, non-OPEC² and total world supply, as well as OPEC market share, 2018–2022**Notes**¹ OPEC – including OPEC NGLs+non-conventional oils.² Non-OPEC – including processing gains.**Source**

OPEC.

Other Asia – India

Oil demand in India increased by around 0.4 mb/d y-o-y in 2022. This was supported by a healthy GDP, combined with manufacturing activity and steady mobility, backing demand growth for diesel and gasoline, which rose in both cases by 0.1 mb/d y-o-y. A steady air travel recovery supported jet kerosene demand, which grew y-o-y by 30 tb/d. The other products category posted a y-o-y increase of 70 tb/d. At the same time, LPG, the main household fuel in India, grew by 18 tb/d y-o-y in 2022, despite ongoing substitution by kerosene in the residential sector.

Latin America

Oil demand in Latin America rose by 0.2 mb/d y-o-y in 2022, largely driven by mobility and an air travel recovery. Gasoline post-

ed growth of 90 tb/d y-o-y and jet kerosene increased y-o-y by 60 tb/d. Diesel posted y-o-y growth of 53 tb/d, supported by industrial and agricultural sector-related activities. The other products category was also on a positive trajectory, witnessing y-o-y growth of 31 tb/d. In general, oil demand in the region remained on upward path, supported by good performance in transportation and industrial fuels.

Middle East

In 2022, oil demand in the Middle East posted a y-o-y rise of 0.5 mb/d. Growth was above pre-pandemic levels. The GDP for the region was strong in 2022, supporting mobility and manufacturing activity, combined with healthy demand for electricity generation, which propelled oil product demand over the year. The other products category

grew by 0.2 mb/d y-o-y, largely backed by requirements for electricity generation. The industrial sector and construction-related activities backed demand for diesel, which grew by 0.1 mb/d. Gasoline grew by 90 tb/d y-o-y on the back of healthy mobility. Residential fuels also gained from electricity and industrial sector requirements to grow by 60 tb/d y-o-y. An ongoing air travel recovery in the region supported jet/kerosene, which increased by 35 tb/d y-o-y. Generally, demand in the region remained positive, well-supported by strong GDP growth and accelerated activity.

World oil supply in 2022

According to preliminary estimates, the world's liquids supply rose by 4.5 mb/d to average 99.8 mb/d in 2022. OPEC crude production increased by 2.5 mb/d y-o-y to average 28.9 mb/d. Due to higher oil prices, the industry saw rising investment and substantial returns, supported by reduced fear regarding new COVID-19 variants. Liquids output from non-OPEC producers rose by 1.9 mb/d. The non-OPEC countries with the largest liquids supply declines in 2022 were Norway and Thailand, while oil production increases were seen primarily in the US, Russia, Canada, Guyana, China and Brazil.

OPEC natural gas liquids (NGLs) and unconventional liquids output averaged 5.4 mb/d, representing growth of 0.1 mb/d y-o-y.

Non-OPEC countries produced an average of 65.6 mb/d of liquids, including processing gains, indicating a rise of 1.9 mb/d in 2022. Broken down, non-OPEC countries produced 43.9 mb/d of crude oil (0.9 mb/d y-o-y), 12.6 mb/d of NGLs (+0.6 mb/d y-o-y) and 6.7 mb/d of unconven-

tional liquids (+0.2 mb/d y-o-y). Processing improved by 0.1 mb/d to average 2.4 mb/d in 2022.

Non-OPEC supply

Non-OPEC liquids supply (excluding processing gains) averaged 63.2 mb/d in 2022, an increase of 1.8 mb/d over the previous year. Supply increased in OECD Americas (1.4 mb/d), mainly in the USA (1.2 mb/d) and Canada (0.2 mb/d), along with Russia (0.2 mb/d), Guyana (0.2 mb/d), China (0.1 mb/d), Brazil (0.1 mb/d) and the Middle East (0.1 mb/d). In contrast, a supply drop was driven by OECD Europe (-0.2 mb/d), Other Asia (-0.1 mb/d), Other Eurasia (-0.1 mb/d), Africa (-30 tb/d), OECD Asia-Pacific (-30 tb/d) and India (-10 tb/d).

OECD Americas

OECD Americas' liquids production in 2022 is estimated to have grown by 1.4 mb/d to average 26.7 mb/d.

US supply rose by 1.2 mb/d y-o-y to 19.0 mb/d, followed by Canada, with a 0.2 mb/d y-o-y increase to 5.6 mb/d. US crude oil production in 2022 is estimated to have risen by 0.6 mb/d to average 11.9 mb/d. Production from the Gulf of Mexico is estimated to have increased by 30 tb/d to average 1.7 mb/d, and onshore conventional crude is estimated to have grown by 70 tb/d to average 2.3 mb/d, compensating for annual natural decline rates. The latest estimate for tight crude production in 2022 shows an expansion of 0.6 mb/d y-o-y to average 7.9 mb/d. US NGLs production in 2022 showed growth of 0.5 mb/d y-o-y to average 5.9 mb/d, of which 4.8 mb/d came from unconventional NGLs. Finally, unconventional liquids, mainly ethanol, rose by 40 tb/d to average 1.2 mb/d.

OECD Europe

OECD Europe's liquids supply experienced the largest decline among OECD regions in 2022 by 0.2 mb/d to 3.6 mb/d. Lower oil production on the Norwegian continental shelf was the main reason for a decline in 2022. Norway's 2022 liquids supply saw a decline of 140 tb/d to average 1.9 mb/d. At the same time, the UK's oil supply in 2022 is now estimated to have decreased by 50 tb/d to average 0.9 mb/d.

OECD Asia-Pacific

In OECD Asia-Pacific, liquids production is estimated to have declined by 30 tb/d y-o-y to average 0.5 mb/d in 2022, compared with a minor decline of 10 tb/d y-o-y in 2021 and stable y-o-y production in 2020.

Non-OECD

Non-OECD liquids production for 2022 is estimated to have increased by 0.6 mb/d y-o-y to average 32.5 mb/d. China's liquids supply is estimated to have grown by 0.1 mb/d y-o-y to average 4.5 mb/d, due to higher spending by national companies. The impact of lower investment and considerable natural decline rates dampened India's crude oil production in 2022, with output estimated to have contracted slightly by a minor 10 tb/d y-o-y to average 0.8 mb/d.

Oil production in Other Asia is estimated to have declined by 0.1 mb/d to average 2.3 mb/d, with the sharpest yearly declines seen in Thailand, Indonesia and Brunei by 60 tb/d, 30 tb/d and 10 tb/d, respectively. At the same time, oil production in Other Eurasia is estimated to have decreased by 0.1 mb/d y-o-y to average 2.8 mb/d. Additionally, Africa's production is estimated to

have declined slightly by 30 tb/d y-o-y to average 1.3 mb/d.

On the other hand, Latin America is estimated to have risen by 0.4 mb/d y-o-y to 6.3 mb/d, with growth in Guyana of 0.2 mb/d, Brazil of 0.1 mb/d, Argentina of 70 tb/d and Colombia of 20 tb/d. The upswing was mainly due to new offshore project start-ups in Guyana and Brazil and shale oil developments in Argentina. Oil production in the Middle East is also estimated to have risen by 0.1 mb/d y-o-y to average 3.3 mb/d, dominated by Oman, with growth of 90 tb/d y-o-y. Russia's liquids supply is estimated to have grown by 0.2 mb/d y-o-y to average 11.0 mb/d.

OPEC crude oil production

According to secondary sources, OPEC crude oil production averaged 28.87 mb/d in 2022, an increase of 2.52 mb/d over the previous year. Y-o-y, production for the year decreased in Nigeria by 168 tb/d, Libya by 162 tb/d and Equatorial Guinea by 14 tb/d. On the other hand, 2022 production increased in Saudi Arabia by 1.42 mb/d, Iraq by 0.39 mb/d, the United Arab Emirates by 0.34 mb/d, Kuwait by 0.29 mb/d, IR Iran by 0.16 mb/d, Venezuela by 0.13 mb/d, Algeria by 0.11 mb/d, Angola by 19 tb/d and Gabon by 15 tb/d. Meanwhile, crude production in Congo was broadly stable.

OPEC's share of the global liquids supply in 2022 increased by 1.13 pp to 34.32 per cent from 33.19 per cent in 2021.

OPEC NGLs and non-conventional oil

OPEC NGLs and non-conventional oil are estimated to have averaged 5.4 mb/d in 2022, including 5.3 mb/d of NGLs and 0.1 mb/d

Table 2

OPEC crude oil production based on secondary sources, 2018–2022 (tb/d)

	2018	2019	2020	2021	1Q22	2Q22	3Q22	4Q22	2022	Change 2022/21
Algeria	1,046	1,029	904	913	984	1,015	1,040	1,030	1,017	105
Angola	1,505	1,399	1,253	1,122	1,151	1,173	1,154	1,085	1,141	19
Congo	318	327	289	265	263	268	266	256	263	-1
Equatorial Guinea	124	117	115	97	91	90	89	62	83	-14
Gabon	191	213	191	182	199	190	201	199	197	15
IR Iran	3,536	2,363	1,991	2,392	2,529	2,555	2,565	2,567	2,554	162
Iraq	4,562	4,686	4,076	4,046	4,285	4,440	4,522	4,505	4,439	393
Kuwait	2,744	2,687	2,439	2,419	2,612	2,690	2,801	2,713	2,705	286
Libya	946	1,091	367	1,143	1,052	743	976	1,153	981	-162
Nigeria	1,704	1,773	1,578	1,372	1,376	1,209	1,063	1,171	1,204	-168
Saudi Arabia	10,314	9,796	9,204	9,114	10,165	10,450	10,894	10,606	10,531	1,417
UAE	2,989	3,071	2,804	2,727	2,954	3,045	3,168	3,094	3,066	339
Venezuela	1,363	811	512	553	684	714	667	672	684	131
Total OPEC	31,342	29,363	25,721	26,345	28,345	28,583	29,406	29,113	28,865	2,520

Note

Totals may not add up due to independent rounding.

Source

OPEC.

Table 3

OPEC crude oil production based on direct communication, 2018–2022

(tb/d)

	2018	2019	2020	2021	1Q22	2Q22	3Q22	4Q22	2022	Change 2022/21
Algeria	1,040	1,023	899	911	984	1,016	1,050	1,030	1,020	109
Angola	1,473	1,373	1,271	1,124	1,161	1,173	1,151	1,076	1,140	16
Congo	323	329	300	267	267	258	261	261	262	-5
Equatorial Guinea	120	110	114	93	95	91	83	56	81	-12
Gabon	193	218	207	181	197	184	198	183	191	9
IR Iran	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Iraq	4,410	4,576	3,997	3,971	4,188	4,472	4,632	4,505	4,450	479
Kuwait	2,737	2,678	2,438	2,415	2,612	2,694	2,799	2,721	2,707	292
Libya	n/a	n/a	389	1,207	1,151	n/a	n/a	n/a	n/a	n/a
Nigeria	1,602	1,737	1,493	1,323	1,299	1,133	999	1,145	1,143	-180
Saudi Arabia	10,317	9,808	9,213	9,125	10,224	10,542	10,968	10,622	10,591	1,466
UAE	3,008	3,058	2,779	2,718	2,949	3,042	3,170	3,093	3,064	347
Venezuela	1,510	1,013	569	636	756	745	673	693	716	80
Total OPEC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

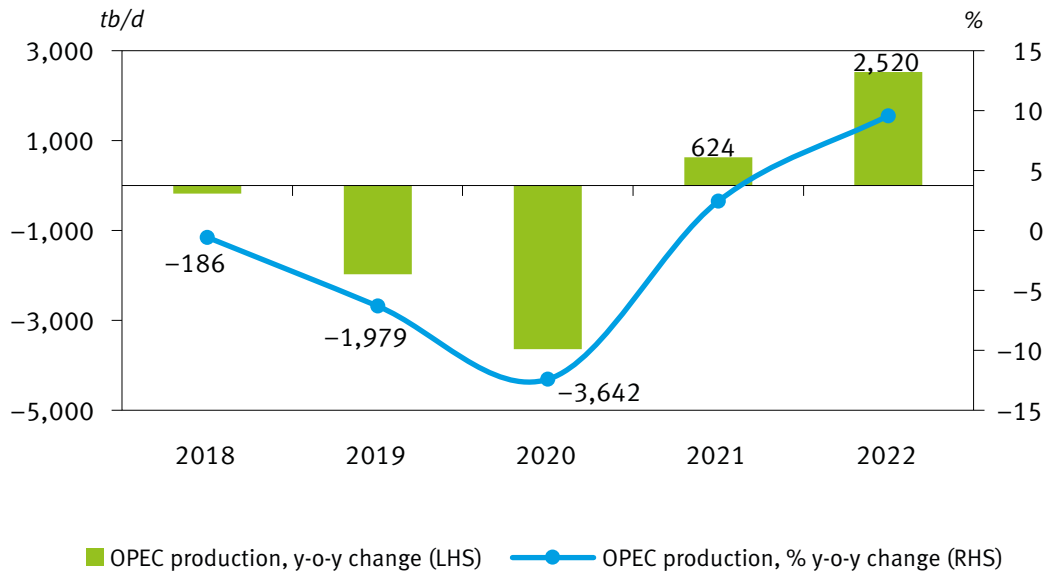
Note

Totals may not add up due to independent rounding.

Sources

Direct communication.

Figure 8
Year-on-year percentage change in OPEC production, 2017–2021



Source
OPEC.

of non-conventional oil, representing an annual rise of 0.1 mb/d.

Transportation

The tanker market recovered in 2022 from historically poor performance the previous year. Suezmax and Aframax rates in the dirty tanker market led the gains, impacted by geopolitical events in Eastern Europe and resulting trade dislocations.

Dirty spot freight rates for Suezmax on the US Gulf Coast (USGC)-to-Europe route averaged WS105 in 2022, representing an increase of 119 per cent y-o-y. The route saw increased activity as Europe boosted inflows from the US.

Dirty spot freight rates on the inter-Mediterranean route averaged WS194 in 2022, representing an increase of 102 per cent, the

highest gain since at least 2016. Increased long-haul demand amid trade dislocations trimmed tanker availability, supporting rates.

Very large crude carrier (VLCC) rates showed less robust performance, as developments supporting the Suezmax and Aframax classes had less of an impact on these larger vessels. With Chinese demand for crude imports weighed down by the impact of COVID-19 lockdowns, flows from the US and Brazil to Asia were reduced, routes which primarily use VLCCs. As a result, it took until about mid-year for VLCC rates to begin to accelerate in earnest. On the Mideast-to-East route, spot freight rates averaged WS62 in 2022, representing a gain of 79 per cent compared with the previous year, the highest since 2019. Rates on the West Africa-to-East route averaged WS64,

representing a gain of 71 per cent over the same period.

Clean spot freight rates showed robust performance in the first half of the year, before turning more volatile in the second half. Rates for the year were substantially above levels seen since at least 2016, supported by increased demand for longer-haul voyages as well as inventory building in Europe ahead of sanctions on Russian product imports. Clean rates on the Mideast-to-East route averaged WS235 in 2022, up 123 per cent compared with the previous year. Rates in the intra-Mediterranean route averaged WS299, an increase of 106 per cent compared with the previous year.

Oil trade

Major trends in 2022

The year 2022 was a volatile one for crude and product trade flows, following in the wake of disruptions caused by the global COVID-19 pandemic. Geopolitical events in Eastern Europe upended long-established trade patterns, resulting in a search for alternate sources and destinations for crude and refined products. The market managed the shifts in crude trade flows, with much of Russia's crude that was previously sent to Europe finding a home in Asia, while Europe started receiving alternate supplies from North America and the Middle East, as well as South America and West Africa.

US

The US showed robust performance in 2022. Trade dislocations boosted demand for US crude and refined product exports amid healthy requirements from traditional trading partners in Latin America. US crude oil imports averaged 6.3 mb/d in 2022, represent-

ing an increase of 0.2 mb/d, or 3 per cent, compared with the previous year. However, they were still 0.5 mb/d, or 7 per cent, below pre-pandemic levels seen in 2019. Total product imports averaged 2.0 mb/d in 2022, representing a y-o-y decline of 0.3 mb/d, or 13 per cent, compared with the robust levels seen the previous year when product imports reached a 10-year high. Declines were seen in most major products, except residual fuel, and were led by gasoline, followed by distillate fuels. US crude exports recovered from the decline seen the previous year to set a new record high in 2022 of 3.6 mb/d. This represents an increase 0.7 mb/d, or 22 per cent, y-o-y. Product exports also set a new record high of just under 6.0 mb/d in 2022, representing an increase of 0.3 mb/d, or 6 per cent. Refined product outflows were led by distillate fuel oil, with increases seen across all major product categories.

China

China showed relatively restrained performance in 2022. Domestic consumption was weighed down by the country's zero-COVID policy, while efforts to constrain the refining sector dampened product export flows. Crude imports averaged 10.2 mb/d, falling for the second year in a row from high levels seen during the first year of the pandemic when China filled its strategic reserves with low-cost crude. Y-o-y crude imports declined by 0.1 mb/d, or 1 per cent. Product imports held steady y-o-y, edging up 4 per cent to a fresh record high of 1.5 mb/d. Among major products, only naphtha and LPG showed gains. Product exports fell by 9 per cent, or 0.1 mb/d, to average 1.1 mb/d, declining for the third year in a row. Losses were seen across the barrel, with the exception of jet fuel and naphtha.

India

India's crude and product trade flows showed robust performance, amplified by trade dislocations and further supported by improving domestic consumption. Crude imports rose by 8 per cent, or 0.3 mb/d, to average 4.6 mb/d in 2022. This represented a record high in annual terms, slightly above the previous record set in 2019. Product imports picked up by four per cent from the previous year to average 1.1 mb/d. This represents a fresh record high, slightly edging out the previous record set in 2020 when the country drew in low-cost LPG and fuel oil. Product export flows increased by 3 per cent y-o-y to average 1.3 mb/d in 2022, but remained below pre-pandemic levels seen in 2019. The increase was driven mainly by jet fuel and the other products category.

Japan

Japan's crude and product trade flows also experienced an active year in 2022. Product exports in particular were supported by China's absence from the export market last year, amid constrained product export quotas. Crude imports rose ten per cent, or 0.2 mb/d, to average 2.7 mb/d in 2022. Product imports averaged 0.9 mb/d, representing a decline of ten per cent y-o-y following strong performance seen in 2021, when imports reached a nine-year high. Declines were led by naphtha and the other products category. Product exports jumped 27 per cent, or 0.1 mb/d, to average 0.5 mb/d, though still remaining below pre-pandemic levels. Gains were seen across the board, led by gasoil outflows.

OECD Europe

Crude and product trade flows were impacted by considerable uncertainty in 2022,

as the region searched for alternative sources of crude and products. With data available up to October, crude imports rose by six per cent, or 0.5 mb/d, to average 9.0 mb/d, still below pre-pandemic levels. Product imports slipped two per cent y-o-y to average 2.9 mb/d. Crude exports fell sharply, as more crude remained in the region, down 57 per cent to average 0.2 mb/d. Total product exports declined by 8 per cent to average 2.4 mb/d. Declines in volume terms were led by gasoil, as well as gasoline and fuel oil.

Refinery industry

US

Product markets in the US strengthened notably in 1H22 with USGC refining margins climbing against WTI to show record high gains in June. Positive market performance was observed in all main products across the barrel, particularly in the middle section, with the exception of naphtha. A rare massive jump in refining economics was largely attributed to a rise in product exports. In addition, tightening product availability, with changes in product flow patterns in Europe due to geopolitical tension, provided open arbitrage of product deliveries from the US, particularly diesel. On the USGC, gasoline and jet/kerosene represented the main margin driver, in line with a strong improvement in domestic mobility indicators during the summer season and tighter jet fuel availability.

In 2H22, USGC refining margins against WTI remained strong, as they surged in October before declining towards the end of the year when the summer season demand boost subsided and product inventories began to recover. Across the barrel, all products – with the exception of jet/kerosene

– weakened, with gasoline crack spreads showing the largest decline. The rise in refinery product output led to a downward correction on product prices all across the barrel. A notable decline in feedstock prices towards the end of the month compared with levels registered the previous month and year and provided strength to refinery margins. However, this support was mostly offset by bearish product market sentiment linked to the end of the summer season, stronger product availability and a weakening global economy. USGC refining margins against WTI jumped by \$21.69/b y-o-y to average \$35.23/b in 2022.

Europe

In Europe, refinery margins in Rotterdam against Brent rose sharply in 1H22, as robust gasoline and middle distillate performance boosted them to a new multi-year high, backed by healthy product consumption levels, particularly around the summer months, while global product balances showed considerable contraction. Moreover, geopolitical tension in Eastern Europe amid fears of sanctions on Russian crude and products triggered further concerns of a product shortage in the region, particularly for middle distillates. This led to sizeable upward pressure on product prices and drove a sharp improvement in middle distillate crack spreads. On the other hand, naphtha and fuel oil markets weakened, affected by ample supplies and rather subdued demand.

In 2H22, product performance saw an extension of the same trends seen in the first half of the year. Markets for gasoline, jet fuel and gasoil continued to strengthen, while those for naphtha and fuel oil weakened further. Moreover, a strike in France's refining sector at the end of September led

to a 40 per cent loss in capacity towards the end of the month. This led to a temporary lack of fuel in the country's refueling stations, exacerbating both the product deficit and upward pressure on European product crack spreads. Although profitability for key transport fuels remained robust, the end of the summer season, as well as signs of a recovery in product inventories, kept gains capped. For 2022, European refinery margins against Brent averaged \$19.24/b, up by \$16.29 compared with the previous year.

Asia

Asian refining economics in 1H22 exhibited solid improvement, although they were limited compared with other main trading hubs. Robust performance manifested across the barrel, with the exception of fuel oil and naphtha, as inventories for transport fuels in East of Suez remained under pressure. Strong regional product demand – mainly backed by the manufacturing, industrial and agricultural sectors – boosted fuel market performance, despite strict COVID-19 lockdowns and mobility restrictions in China, in line with its zero-COVID-19 policy. In addition, an overall improvement in mobility indicators in South Korea, Indonesia and India, as well as progress in aviation activities within the region, further strengthened product crack spreads.

In 2H22, Singapore refining margins against Oman fell considerably, in contrast to what was observed in the USGC and Rotterdam, with weakness manifested at the top and bottom sections of the barrel. Lower product export requirements from the West, along with strong refinery run rates in India and China, contributed to enhanced product availability in the region. In addition, the implementation of a product export tax

reduction in India, and release of a fourth batch of product export quotas in China pointed to a potential rise in product flows to Singapore, which exerted pressure on product prices and crack spreads. Singapore refinery margins against Oman in 2022 averaged \$13.88/b, \$10.99 higher relative to the previous year.

Stock movements

OECD

OECD stocks

Total OECD inventories – including commercial and government stocks – fell by 166 mb at the end of 2022 from the same time the previous year to stand at 3,968 mb. This stock draw was attributed to a drop in OECD SPR, which decreased by 284 mb to 1,200 mb, while OECD commercial stocks increased by 117 mb to stand at 2,768 mb. It should be noted that the drop in SPR came on the back of a decision by International Energy Agency (IEA) and the US to make oil available to the market from strategic reserves.

On a regional basis, stocks in OECD North America fell by 202 mb, while those in OECD Europe and OECD Asia-Pacific rose by 25 mb and 10 mb, respectively. On a quarterly basis, total OECD inventories experienced a stock draw of 79 mb and 47 mb in the first and second quarters, respectively. Meanwhile the third and fourth quarters witnessed stock draws of 18 mb and 23 mb, respectively.

The first quarter of 2022 saw a drop in total commercial stocks of 38 mb, while, the second, third and fourth quarters experienced stock builds of 52 mb, 80 mb and 22 mb, respectively.

At the end of 2022, OECD commercial stocks finished the year 95 mb below the latest five-year average and 158 mb lower than the 2015–2019 average.

Within the OECD region, commercial stocks in OECD Americas and OECD Asia-Pacific saw a deficit of 40 mb and 19 mb below the latest five-year average by the end of 2022. At the same time, OECD Europe saw a deficit of 35 mb below the latest five-year average.

Within components, OECD commercial crude and product stocks witnessed stock builds of 72 mb and 45 mb, respectively, at the end of 2022, compared with the previous year at the same time. At 1,344 mb, crude stocks stood 36 mb below the latest five-year average, or 83 mb less than the 2015–2019 average. Product stocks stood at 1,424 mb at the end of 2022, a deficit of around 59 mb compared with the latest five-year average and 75 mb below the 2015–2019 average. Gasoline indicated a deficit of 31 mb below the latest five-year average, while middle distillates witnessed a larger deficit of around 65 mb lower than the latest five-year average.

Days of forward cover

OECD commercial stocks stood at 60.1 days of forward cover at the end of 2022, 2.2 days higher than 12 months before, 2.5 days below the latest five-year average and 2.3 days lower than the 2015–2019 average. OECD Americas was 3.0 days below the latest five-year average to stand at 59.7 days at the end of 2022, while OECD Asia-Pacific stood 3.0 days below the latest five-year average to finish the year at 46.1 days. Meanwhile, OECD Europe indicated a deficit of 2.5 days, ending the year at 69.3 days.

Non-OECD

Non-OECD stocks

Estimated total non-OECD stocks – including commercial and SPR – stood at 2,649 mb at the end of 2022, up by 194 mb from the end of 2021. Crude inventories stood at 1,893 mb, which is 207 mb higher than a year earlier at the same time. Meanwhile, non-OECD products finished 2022 at 757 mb, which is 12 mb lower than at the end of 2021.

Within the regions, China experienced the bulk of the build, increasing by 92 mb to stand at 1,073 mb. Latin America and the Middle East also experienced stock builds of 64 mb and 27 mb, to stand at 246 mb and 448 mb, respectively.

Balance of supply and demand

In 2022, world oil demand was estimated to expand by 2.5 mb/d to stand at 99.6 mb/d. The OECD and non-OECD saw growth of around 1.3 mb/d and 1.2 mb/d, respectively.

Meanwhile, non-OPEC supply in 2022 also experienced an improvement, increasing by 1.9 mb/d to average 65.6 mb/d, while OPEC NGLs and non-conventional oil rose by 0.1 mb/d to stand at 5.4 mb/d in 2021.

Based on current supply/demand figures, demand for OPEC crude in 2022 was estimated to have increased by 0.5 mb/d y-o-y to average 28.6 mb/d. The projected demand for OPEC crude was revised down by 0.2 mb/d since the initial July 2021 forecast. This was due to absolute world oil demand and non-OPEC supply (including OPEC NGLs)

being revised down by 0.3 mb/d and 0.1 mb/d, respectively.

On a quarterly basis, required OPEC crude is estimated to be at 28.7 mb/d and 28.3 mb/d in 1Q22 and 2Q22, respectively. In 3Q22 and 4Q22, it is expected to stand at 28.5 mb/d and 28.9 mb/d, respectively. Compared with the same quarters in 2021, demand for OPEC crude in 1Q22 and 2Q22 is estimated to be higher by 2.5 mb/d and 1.3 mb/d, respectively, while 3Q22 and 4Q22 are estimated to be lower by 0.2 mb/d and 1.3 mb/d, respectively.

Meanwhile, according to secondary sources, OPEC crude oil production averaged 28.9 mb/d for 2022, which was 0.3 mb/d higher than the demand for OPEC crude for the year. Broken down by quarters, OPEC crude production averaged 28.4 mb/d in 1Q22, 0.4 mb/d below demand; in 2Q22 it was 28.6 mb/d, 0.3 mb/d higher than demand; in 3Q22 it averaged 29.4 mb/d, 0.9 mb/d higher than demand; while in 4Q22 it averaged 29.1 mb/d, 0.2 mb/d higher than demand.

Meanwhile, according to secondary sources, OPEC crude production averaged 25.2 mb/d in 1Q21, which was 1.1 mb/d lower than demand. In 2Q21, it averaged 25.5 mb/d, which was 1.5 mb/d less than demand, while in 3Q21, it averaged 26.9 mb/d, 1.8 mb/d below the required amount of crude. OPEC crude production in 4Q21 averaged 27.7 mb/d, which was 2.0 mb/d below demand. For the whole year, OPEC production averaged 26.3 mb/d, around 1.6 mb/d lower than the demand for OPEC crude.

Table 4
World oil demand and supply balance, 2019–2022

	2019	2020	2021	1Q22	2Q22	3Q22	4Q22	2022
World oil demand and supply balance								
World demand (mb/d)								
Americas	25.40	22.45	24.32	24.77	24.98	25.33	25.16	25.06
of which US	20.58	18.35	20.03	20.38	20.41	20.62	20.68	20.52
Europe	14.31	12.41	13.13	13.19	13.42	14.09	13.73	13.61
Asia-Pacific	7.95	7.17	7.38	7.85	6.99	7.22	7.71	7.44
Total OECD	47.66	42.03	44.83	45.81	45.39	46.65	46.61	46.12
China	13.81	13.94	14.97	14.74	14.42	14.64	15.44	14.81
India	4.99	4.51	4.77	5.18	5.16	4.95	5.26	5.14
Other Asia	9.06	8.13	8.63	9.09	9.27	8.73	8.85	8.98
Latin America	6.59	5.90	6.23	6.32	6.36	6.55	6.49	6.43
Middle East	8.20	7.45	7.79	8.06	8.13	8.50	8.32	8.25
Africa	4.44	4.08	4.22	4.51	4.15	4.25	4.61	4.38
Eurasia	3.57	3.39	3.61	3.67	3.42	3.45	3.59	3.53
of which Russia	1.19	1.07	1.21	1.22	1.16	1.00	1.21	1.15
of which other Eurasia	0.76	0.70	0.75	0.79	0.75	0.73	0.80	0.77
Total non-OECD	52.62	49.16	52.18	53.58	52.81	52.79	54.56	53.44
(a) Total world demand	100.27	91.19	97.01	99.38	98.20	99.44	101.17	99.55
Y-o-y change	1.08	-9.09	5.82	5.18	2.55	1.78	0.73	2.54
Non-OPEC liquids production								
Americas	25.84	24.75	25.25	25.86	26.27	27.02	27.48	26.66
of which US	18.49	17.64	17.85	18.27	18.83	19.33	19.68	19.03
Europe	3.70	3.90	3.76	3.73	3.43	3.49	3.61	3.57
Asia-Pacific	0.52	0.52	0.51	0.49	0.51	0.43	0.48	0.48
Total OECD	30.07	29.17	29.52	30.08	30.22	30.94	31.57	30.71
China	4.05	4.15	4.31	4.51	4.52	4.38	4.41	4.46
India	0.83	0.78	0.78	0.78	0.77	0.76	0.76	0.77
Other Asia	2.72	2.51	2.41	2.35	2.30	2.22	2.30	2.29
Latin America	6.08	6.03	5.95	6.11	6.18	6.46	6.58	6.33
Middle East	3.19	3.19	3.24	3.29	3.33	3.36	3.34	3.33
Africa	1.51	1.41	1.35	1.33	1.31	1.32	1.30	1.32
Eurasia	11.51	10.54	10.80	11.33	10.63	11.01	11.17	11.03
of which Russia	3.07	2.91	2.93	3.04	2.76	2.59	2.91	2.83
of which other Eurasia	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.11
Total non-OECD	33.09	31.67	31.87	32.84	31.91	32.20	32.87	32.46
Total non-OPEC production	63.16	60.83	61.39	62.93	62.13	63.15	64.44	63.17
Processing gains	2.37	2.16	2.29	2.40	2.40	2.40	2.40	2.40
Total non-OPEC liquids production	65.53	62.99	63.68	65.33	64.53	65.55	66.84	65.57
OPEC NGL + non-conventional oils	5.21	5.17	5.28	5.35	5.38	5.41	5.43	5.39
(b) Total non-OPEC liquids production and OPEC	70.74	68.16	68.96	70.67	69.91	70.95	72.28	70.96
Y-o-y change	2.18	-2.59	0.80	2.71	1.25	1.97	2.06	2.00
OPEC crude oil production (secondary sources)	29.36	25.72	26.35	28.35	28.58	29.41	29.11	28.87
Total liquids production	100.11	93.88	95.30	99.02	98.49	100.36	101.39	99.82
Balance (stock change and miscellaneous)	-0.17	2.69	-1.70	-0.37	0.29	0.92	0.22	0.27
OECD closing stock levels (mb)								
Commercial	2,894	3,037	2,651	2,613	2,666	2,746	2,768	2,768
SPR	1,535	1,541	1,484	1,442	1,343	1,245	1,200	1,200
Total	4,429	4,578	4,134	4,055	4,009	3,991	3,968	3,968
Oil-on-water	1,033	1,148	1,202	1,231	1,304	1,407	1,401	1,401
Days of forward consumption in OECD (days)								
Commercial onland stocks	69	68	57	58	57	59	60	60
SPR	37	34	32	32	29	27	26	26
Total	105	102	90	89	86	86	86	85
Memo items								
(a) – (b)	29.53	23.03	28.05	28.71	28.29	28.49	28.89	28.60

Note
Totals may not add up due to independent rounding.

Source
OPEC.

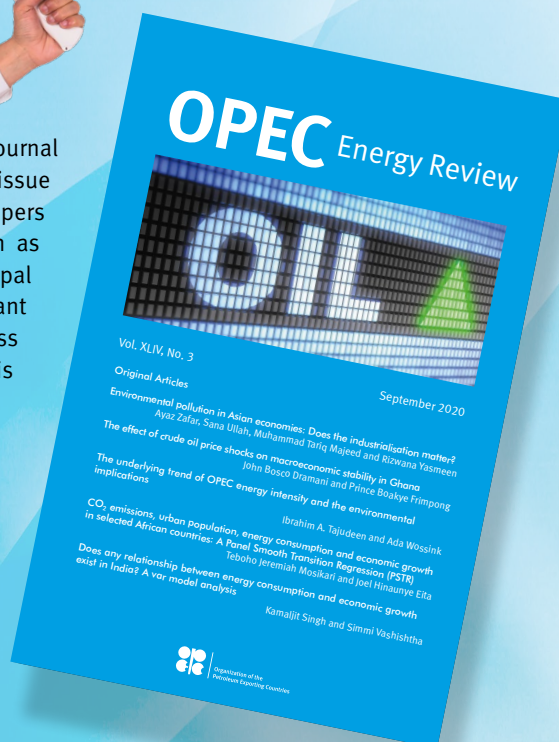
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Focus on youth and education

OPEC has been increasingly focusing on learning and future generations. This is embodied in the updated and integrated OPEC Academy (OA) – the newest programme addition being the Vienna Energy Scholar Programme – and supported by Secretary General Haitham Al Ghais, who is reaching out to a new generation in the industry.

It is normal to see eager, young people wandering around the OPEC Secretariat. Generations of youth from OPEC Member Countries, the Austrian host country and other partners continue to bring their enthusiasm and excitement to the headquarters, filling the building with new ideas and energy, while taking away wisdom and experience to further their own careers. There cannot be a more meaningful win-win situation.

Established in 2018, and reconfigured in 2020, the OA incorporates the activities of the Academic Committee, which was created in 2006 to oversee the OPEC Secretariat's multitude of research and training programmes. Since then, the Academy has expanded and is an integral part of efforts to build capacity, strengthen professionalism and share expertise.

Under its umbrella, the Academy attracts some of the world's leading energy experts, while giving professional researchers, university students, interns and others an opportunity to enrich their knowledge of the Organization, its Member Countries and the oil industry in general.

Traditional academic institutions can be resistant to change. However, the OA has been quick to adjust to the times and focus on issues that are making the headlines.

As the world locked down at the onset of COVID-19 in 2020, the Academy quickly

moved online. It provided a steady stream of programmes that helped maintain an open channel of communication between experts from the OPEC Secretariat, Member Countries and counterparts outside of the Organization. These discussions have contributed – along with OPEC's dialogues and other outreach – to a better understanding of what is happening in the world and the energy markets.

The new OA has stepped up the pace in its focus on human and professional development. Programme participants are immersed in a world-class international energy organization, which in and of itself provides a multifaceted learning experience. Here they get to mingle with the best in their field with a focus on their own professional ambitions and intended outcomes.

Another element of the OA is the facilitation of academic and professional debate on a global scale on significant issues facing mankind related to the world economy and energy.

The Secretariat gains a great deal from this exchange. Indeed, many of the current staff of the Secretariat were in one OA programme or another prior to starting their OPEC careers.

Milestones in 2022

In 2022, the OA maintained undiminished momentum. The Multi-Disciplinary Training Course (MDTC) – the 22nd of its kind – hosted the most participants on record with 89 attendees, 89 per cent higher than in 2021, hailing from 11 Member Countries, the African Petroleum Producers' Organization (APPO) and the Secretariat.

The Internship Programme (IP) provided on-the-job practical training and mentorship to ten interns – a 43 per cent increase over

2021 – while the Summer Fellowship Programme (SFP) hosted 12 candidates, twice as many as in 2021, representing five Member Countries.

The Visiting Research Fellow Programme (VRFP) enhanced the professional competence of two research fellows, twice as many as in 2021, through comprehensive research studies.

Meanwhile, the Vienna Energy Scholar Programme (VESP) enjoyed remarkable success in its second iteration at the OPEC Secretariat in September, gaining further institutional prominence across Austria.

The Lecture Series Programme (LSP) coordinated 17 lectures, an increase of 42 per cent from the previous year, covering various areas influencing the oil market, while the OPEC Energy Review (OER) published four issues, marked by significant improvements in terms of depth and outreach.

In addition to these activities, the Secretariat offered in-house training to its staff, featuring four tailor-made training sessions for 73 OPEC professionals. Finally, the cooperation with Wien University Executive Academy (WUEA) is preparing to move to the next level, with the Academy more actively contributing to the Secretariat's activities.

Additionally, the 2022 OA cycle was marked by several institutional achievements. The OA Intranet page was reformed and successfully launched in April, alongside the upgraded OPEC Intranet. The current OA page boasts an engaging and modern design, offering a more structured, coherent and user-friendly tool that celebrates the Programmes' achievements and provides visitors with up-to-date information on all current and upcoming opportunities under the OA umbrella.

The OA is now embedded into the administrative structure of the Organization, with the OA Framework and Guidelines having been revisited and formalized to reflect brisk growth since 2020. This will also help guide OA development as it moves forward into the future.

The objectives and operations of the OA are now sensibly formulated, consistently road-mapped and streamlined into the Secretariat's objectives in the OA Work Programme and Budget document. This detailed planning document will be able to increase performance efficiency by visibly integrating requirements, goals, expected results and deliverables, along with budgetary allocations.

Upon entering these programmes, young people have the chance to hear discussions on all topics related to energy and the world economy, including innovations in crude futures markets, energy consumption and economic growth in the EU, environmental



social governance (ESG) policies, investment in the fossil fuel sector, oil supply modelling, and many other timely topics.

It could well be a university syllabus, but these topics are just snapshot of the presentations hosted by the OA within a short timeframe.

Vienna Energy Scholar Programme

The VESP is the Academy's newest programme, having marked its second year in September. This premier programme provides university students and future energy professionals in Vienna a unique opportunity to learn about OPEC, its Member Countries and the oil business through hands-on experiences and field trips. It additionally enhances the cooperative relationship that has existed between the OPEC Secretariat and the city it has called home since 1965.

Looking to the future, the Academy is well positioned to help OPEC oil producers attract new generations of skilled employees to the industry by offering rewarding professional experiences, training opportunities and a platform for young professionals to share their own ideas and expertise.

With top-level human resources in the field ever more scarce, particularly since the market downturns of 2015 and 2016, along with the pandemic-related crash in 2020, this is important. Oil will remain the top energy provider up to 2045, according to OPEC's latest *World Oil Outlook (WOO)*, thus the need to attract young people to the sector to meet growing need with diverse skill sets, educational backgrounds and work experiences is only mounting.

Knowledge – like oil itself – is an indispensable commodity. As one of 2022's



Summer Fellows aptly noted during a presentation at the OPEC Secretariat: “We always talk about the financial investments in the industry. But we also need to talk about human capital development.”

The OA's investments in enhancing professionalism and the exchange of knowledge will pay dividends for a long time to come, and ultimately contribute to OPEC's efforts to achieve a more stable, sustainable and secure energy future.

Secretary General's involvement

OPEC Secretary General, Haitham Al Ghais strongly believes in empowering the youth through education. To this end, he delivered a video message to employees of the Kuwait Petroleum Corporation (KPC) on



International Youth Day, celebrated every 12 August.

Al Ghais, who is a career veteran of the KPC, discussed the key contributions of young employees to the oil industry today and in leading the industry into the future. He also brought up the contributions of the OA and Secretariat programmes that provide internships, fellowships and other capacity-building opportunities for students and young professionals from Member Countries.

He told the students: “When I first entered the doors of KPC nearly 30 years ago, it was exhilarating for me to be part of one of the world’s great national oil companies. And my enthusiasm for the oil business has never waned.

“Over the years, I have benefited from amazing opportunities – working overseas, leading teams, and becoming involved in OPEC...Today, I have the distinct privilege to

join you from the OPEC Secretariat in Vienna as Secretary General.”

He added that it is the honour of a lifetime to be the 29th Secretary General, and the first in the history of the State of Kuwait to be appointed by acclamation.

OPEC was born before most of us, he stated, by Founder Members Kuwait, Iran, Iraq, Saudi Arabia and Venezuela, in 1960.

The Secretary General outlined some of the significant challenges facing the oil market and industry as a whole, including the COVID-19 pandemic; evolving geopolitical developments, which stoke volatility and inflation; along with long-term stressors linked to mounting policy and investment pressures related to the energy transition.

“The fundamental importance of (oil and gas) is why we are here, and is why we need future leaders like you. Our industry offers dynamic opportunities to young people with diverse skill sets and education in the

sciences, technology, engineering and mathematics.

“It is an industry that gives bright young people the chance to make a meaningful and sustainable contribution to their community and the world at large.

“We are proud that OPEC has a long history of encouraging students and young employees to learn more about the Organization; expand their professional horizons; enrich their knowledge of our industry; hone their skills; and demonstrate the values that are the hallmark of great leaders: integrity, honesty and transparency.”

In fact, the OA forms part of the many important services the OPEC Secretariat provides to Member Countries, he added.

“The research projects they are undertaking bring tremendous added value to young peoples’ careers and to OPEC. Plus, these fellowships play a key role in strengthening the bonds between Member Countries and the Secretariat.”

He repeated a few comments from young women and men from Member Countries who attended one of OPEC’s industry-leading events – the OPEC International Seminar:

- The benefits are “limitless”.
- “OPEC recognized the importance of students and young people for the future of the oil and gas industry.”
- “Being able to learn so much – it is just one of the things for which I thank OPEC.”

“These comments and many others like them underscore why it is so important that OPEC continue to provide programmes that enhance the capacity of the next generation,” finished Al Ghais.

The OA has and will continue to generate a host of wide-ranging and tangible benefits for OPEC Member Countries and partners, including those within the framework of the Charter of Cooperation (CoC).





Secretariat activities

Office of the Secretary General

During the first half of 2022, the Secretary General actively participated in a number of international events, delivering keynote remarks at the 12th UAE Energy Forum; Egypt Petroleum Show – EGYPS 2022; the 5th Edition of the Nigeria International Energy Summit (NIES); CERAWEEK; the Atlantic Council Global Energy Forum 2022; the International Oil Gas Refining & Petrochemical Exhibition 2022 in Tehran, IR Iran; special event by invitation of the Mediterranean Gas 2022 in Athens, Greece; the World Energy Forum (WEF) Davos 2022; the RBC Global Energy, Power and Infrastructure Conference and the 21st edition of the Nigeria Oil and Gas (NOG) Conference and Exhibition.

At the beginning of the year, a public lecture was held at the Diplomatic Academy of Vienna on the role of OPEC in the energy transition.

Celebrations of the 60th Anniversary of the founding of OPEC had been postponed since 2020 due to the COVID-19 pandemic. Thus, at the invitation of Member Country Iraq, the Organization launched its history book, entitled *‘OPEC 60 years and beyond: A story of courage, cooperation and commitment’*. This took place in June at the historic Al Shaab Hall in Baghdad, marking the location of the Organization’s founding in September of 1960.

During the course of the year, the Secretariat participated in and hosted high-level dialogue meetings with the EU, China, Japan, Africa and the Gas Exporting Countries Forum (GECF). The Secretariat organized its 21st Coordination Meeting on Climate Change, additionally holding a special workshop on climate change under the theme ‘The first global stocktake under the Paris Agreement:

challenges and opportunities for energy-exporting developing countries’.

The year also marked the sixth anniversary of the adoption of the landmark ‘Algiers Accord’ on 28 September 2016 in Algiers, along with the Vienna Agreement on 30 November and the DoC on 10 December of the same year, which laid the foundation for the groundbreaking framework of cooperation between OPEC Member Countries and non-OPEC oil-producing countries.

In August, the Secretariat welcomed new Secretary General, Haitham Al Ghais to the OPEC Headquarters in Vienna.

In the course of the first weeks of taking up office, Secretary General Al Ghais participated in a number of briefings and interviews with international media, and held numerous bilateral meetings with high-level diplomatic officials, ministers, heads of international organizations and representatives from the industry, including a visit to Dr Abdulhamid Alkhalifa, Director General of the OPEC Fund for International Development.

In October, Al Ghais met with Alexander Schallenberg, the Federal Minister for European and International Affairs of Austria and held a courtesy meeting with the Mayor of Vienna, Dr Michael Ludwig.

The Secretary General attended and delivered key note speeches at the Future Energy Forum, Ministry of Energy and Infrastructure UAE; the G20 Energy Transition Ministerial Meeting; the 42nd Oxford Energy Seminar and African Energy Week.

Al Ghais also attended the launch of the 16th edition of the OPEC *World Oil Outlook (WOO)* at ADIPEC in the UAE in October, and at the end of the year delivered an OPEC Statement at the High-level Segment of the UN Climate Change Conference (COP27).

In a demonstration of appreciation, and to consolidate his relationship with Member Countries, the Secretary General embarked on the first of a series of visits to OPEC Member Countries, including Equatorial Guinea and the Bolivarian Republic of Venezuela in September, followed by Algeria and Angola in October.

The Office of the Secretary General (SGO) managed and organized all of the Secretary General's missions, coordinating all external liaison activities and ensuring their smooth running. As a focal point for both Member Countries and non-OPEC countries, the SGO was responsible for organizing and supporting the OPEC and non-OPEC Ministerial Conferences, in addition to meetings of Management, meetings of the Board of Governors (BoG), Ministerial Conferences, meetings of the Economic Commission Board (ECB), and meetings of the Joint Technical Committee (JTC). The SGO documented these meetings, drafting and editing formal minutes, taking records of discussions held, and preparing summaries of decisions made. The Office is also charged with disseminating meeting reports accordingly to Ministers, Governors and Management.

The Legal Office

In line with its objectives and responsibilities, based on the Long-Term Strategy (LTS) and detailed in the Mid-Term-Programme-IV, the Legal Office (LO) contributed to the conduct of the Organization's affairs by promoting the rule of law within the Organization and in its relations with governments, organizations, enterprises and individuals.

As a main deliverable, the LO provided legal advice to the OPEC Secretary General

and OPEC governing bodies, supervised the Secretariat's legal and contractual affairs, and evaluated legal issues of concern to the Organization, reporting its findings to the Secretary General.

Specifically, the LO's main tasks and accomplishments throughout 2022 were as follows:

Internal legal support

- Legal advice was provided to the Secretary General on various procedural matters regarding the OPEC Conference and the BoG, including support for the President's and Chairman's activities, respectively.
- Support was provided to the Internal Auditor for proper execution of audits planned throughout the year which included, in cooperation with the Finance and Human Resources Department (FHRD), proposals for amendments to the Reserve Fund Guidelines.
- The LO worked in close cooperation with FHRD on improvement of the Secretariat's internal dispute mechanism.
- Multiple contracts and agreements with external entities and individuals were reviewed and guidance in related legal matters was provided to different user departments.
- The LO participated in the Audit Committee, Personnel Committee, Contracts Committee, Academic Committee, Seminar Steering Committee and Seminar Organizing Committee, providing legal support for their activities, as established by the Organization's rules and the Secretary General's instructions.

- Under the umbrella of the Academic Committee, and together with the City of Vienna, the LO organized the first part of the 2nd Vienna Energy Scholarship Programme. Member Countries were approached regarding execution of part two of this programme.
- Assistance was rendered to the SGO with regard to preparations for and facilitation of the Meetings of the Conference, along with BoG and Audit Committee meetings.
- The LO's job descriptions were reviewed and proposals for change were passed on to FHRD to ensure they reflect the evolving legal environment.
- The LO participated in the selection process initiated for the position of Legal Advisor, International Matters.

Improvement of internal LO work

- The processes of the main activities of the LO were monitored on an ongoing basis, as well as formats for permanent reporting and reviewing of work progress.
- The LO continued to progressively enhance its role to become a Legal Operations Support Service, aligned with best practices, for the provision of legal services.

International matters/development of cooperation, including non-OPEC countries

- Regular legal support was provided for the implementation of the DoC and the operation of its bodies, including ONOMM, the JMMC and the JTC.
- Upon the reintroduction of the NOPEC Bill 2021 to the US Senate at the 117th US Congress, the LO closely monitored developments and kept the Sec-

retary General and Member Countries up to date.

- Developments were monitored in the Freedom Watch case in the US upon a judge issuing a “form order”, setting a nominal schedule for the matter, including a trial date. Upon thorough assessment of this case, the Legal Defence Team (LDT) and governing bodies were informed accordingly.
- Observing that a lawsuit was filed in the Regional Court of Berlin by Armin Steinbach, basically reviving his claim from 2012, the LO tacitly monitored this case.
- Close monitoring of Austrian, European and international legal cases relating directly/indirectly to OPEC, including participating in the interpretation of relevant articles of the Host Agreement between OPEC and the Republic of Austria, in cooperation with the Austrian Federal Ministry for European and International Affairs, and reporting on this to the Secretary General.
- At the Secretary General's request, the LO continued its outreach engagement with the OPEC Fund to explore and design concrete and long-term collaboration paths between the two organizations.
- Upon signing a Memorandum of Understanding with the Vienna University Executive Academy, the LO arranged a research meeting to determine possible cooperation.
- As instructed by the Conference, the LO worked with national and international consultants on sanctions imposed on some OPEC Member Countries and their ensuing difficulties in

transferring budget contributions to the Secretariat.

Information and analysis products

- Legal developments pertaining to the energy sector were monitored and reported, as relevant, to the Secretary General, generally in preparation for possible dialogues with various stakeholders.
- Following its introduction in 2019, the LO continued to produce a Monthly Legal Report, comprising relevant legal energy issues for distribution within the OPEC Legal Network of Member Country lawyers and delegates.
- Research continued on legal documents and information for the creation of an Energy Legal Database on the Secretariat's homepage.
- Upon completion of a scrutiny check and detailed analysis of Administrative Instructions at the Secretariat, and as made available by FHRD and the Administration and IT Services Department (AITSD), the LO provided an overview to the Secretary General.
- A document received from AITSD entitled "AITSD Entitlements & Services Policy" was thoroughly analyzed *vis-à-vis* existing regulations and extensive guidance and feedback to the department was provided.
- The LO intensified its cooperation with the IBA Working Group on regulation of the energy transition, with the aim to create an instrument to collect regulatory practices around the world and determine guiding principles to ensure a balanced approach to the energy transition.

Training:

- The LO organized the 4th Legal Workshop. Acknowledging the pressing subject of climate change and measures for mitigation, the main theme in 2022 was "Regulatory Issues on Energy Access, Security and Transition". As in last years, the Workshop was attended by Member Countries and countries participating in the DoC. It attracted speakers from international law firms, national and international oil companies, energy and service companies and international organizations that focus on challenges and opportunities related to the energy transition from a legal perspective, considering the viewpoint of the fossil fuel extraction business and resource-rich countries.
- In line with its Work Programme, work continued on the design of two training units to be delivered to OPEC Member Countries and DoC participating countries on the topics of climate change and the energy transition.

Research Division

The Secretariat's Research Division (RD) continued to perform its research activities, tailored to extraordinary circumstances and uncertainties in the wake of the COVID-19 pandemic and post-pandemic recovery plans, which substantially affected the energy sector, especially the oil industry, as well as OPEC Member Countries.

In line with OPEC's third LTS and fourth Medium-Term Programme (MTP-IV), the RD continued an intensive research programme on energy and related matters. The Work

Programme 2022 was implemented commensurate with the requirements of the Organization and its Member Countries, adjusting and tailoring activities as necessary.

The RD consists of the following:

- **Petroleum Studies Department (PSD):** monitors, analyses and forecasts oil and product market developments in the short term.
- **Energy Studies Department (ESD):** monitors, analyses and forecasts world energy developments in the medium and long term and coordinates most of the Secretariat's energy dialogue programmes.
- **Data Services Department (DSD):** responsible for identifying, collecting and processing energy-related information in support of the research activities of the OPEC Secretariat and its Member Countries. The Department is comprised of the Statistics and IT Development Teams, as well as the Information Centre.
- **Environmental Matters Department (EMD)¹:** focuses on energy-related matters arising from the Paris Agreement and the UN 2030 Agenda for Sustainable Development.

Activities of the RD during 2022 included the following:

- Monitoring of short-term energy market developments and prospects, particularly related to the oil market, which continued to recover from the COVID-19 pandemic and associated regional setbacks, particularly in

China, on account of lockdown and mobility restriction measures. Furthermore, it monitored and assessed the impact of the geopolitical conflict that erupted in Eastern Europe in the early months of the year, which affected economic growth regionally and globally, extending to oil and gas markets, along with global and regional oil trade flows (PSD, DSD).

- Conducting comprehensive energy market analysis and forecasts for the medium and long term, with an emphasis on the outlook for demand and supply – particularly in a post-COVID-19 environment and structurally changing energy landscape – as well as developing long-term oil market scenarios and updating the models required to perform such analysis (ESD, DSD).
- Preparing up-to-date and reliable analysis for the Ministerial Conference, the BoG, the ECB, along with meetings of the JTC, JMMC and similar bodies, in addition to energy dialogues, as the basis for energy policy-related decision-making, including identification of key drivers behind global, regional and national oil and energy markets (PSD, ESD, DSD, EMD).
- Undertaking the third review of the OPEC LTS, including the assessment of key challenges and developing scenario analysis to address significant existing uncertainties with quantified implications (PSD, ESD, DSD, EMD).
- Monitoring of energy policies, important technological developments, and

¹ In accordance with a decision of the 162nd Meeting of the BoG, the Environmental Matters Unit was expanded into the Environmental Matters Department.

dynamic structures in the international energy industry (ESD, EMD).

- Undertaking comprehensive analyses of the most recent developments and emerging trends related to the implementation of the Paris Agreement and the 2030 Agenda (EMD).
- Continuing with proactive engagement in multilateral negotiations under the United Nations Framework Convention on Climate Change (UNFCCC) and the High-level Political Forum (HLPF), while also participating in the High-level Dialogue on Energy (EMD).
- Assessing the outcomes of UN processes on climate change and sustainable development, considering their impact on the oil and gas industry, raising awareness among Member Countries, and assisting them in enhancing their cooperation by agreeing upon unified positions on issues of common interest, while also effectively participating in multilateral and intergovernmental fora (EMD).
- Reviewing the Working Group III contribution to the Sixth Assessment Report (AR6), and actively participating in Intergovernmental Panel on Climate Change (IPCC) sessions, aiming to provide technical support to Member Countries (EMD).
- Gathering, compiling and dispensing pertinent, up-to-date data and statistics to provide a reliable basis for the analysis of relevant energy developments (DSD).
- Arranging a series of meetings between the secondary sources (SS) used in deriving monthly average crude oil production volumes and representatives from participating coun-

tries in the DoC, with the objective of improving the accuracy of data reporting and contributing to further transparency through the regular exchange of information and dialogue (DSD).

- Developing additional information technology (IT) applications, in addition to relevant specialized information and reference services (DSD).
- Maintaining and enhancing modelling capabilities and databases used to conduct research in the short, medium and long term (ESD, EMD, DSD, PSD).
- Contributing to Secretariat key events, such as the OPEC Seminar, etc. (PSD, ESD, DSD, EMD).

Flagship publications, regular reports and studies

In 2022, the Division continued its comprehensive research into the complexities of intertwined economy and energy-related matters. It produced a number of flagship publications, regular reports and specific studies addressing questions related to short-term oil market monitoring and developments, future energy prospects, technology, as well as climate change and policy perspectives in the context of sustainable development.

Daily and weekly reports: provide a concise and timely summary of oil market trading news, analysis, and other relevant headlines directly related to short-term market developments.

Given the receding impact that the COVID-19 pandemic had on mobility restrictions and the related relevance to oil demand developments, the weekly COVID-19 report only continued until the end of summer.

Ad hoc reports: numerous high-frequency reports on the impact of geopolitical de-

velopments in Eastern Europe on the world economy, oil demand and supply, oil trade flows, market volatility and global oil inventory levels were prepared throughout the year in support of the decision-making processes of the Secretariat's stakeholders.

The *OPEC Monthly Oil Market Report (MOMR)* focuses on short-term oil market developments. It represents the Organization's most-viewed report and is frequently quoted and referred to by major media outlets and a wide range of respected industry analysts. The *MOMR* contains ten chapters covering a wide range of information pertaining to the oil market, including oil prices and futures markets, commodity markets, the world economy, oil demand and supply, the downstream segment of the refining and product markets, transportation, trade, oil inventories and the balance of supply and demand.

The *MOMR's* feature articles provide concise and in-depth analyses of important events and outlooks, focusing on global oil demand, non-OPEC supply, and summer and winter product markets, while assessing timely economic issues. The July *MOMR* and its feature article presented new forecasts for the economy, world oil demand and non-OPEC supply for the following year. In addition, the articles reviewed crude and product prices and the assessment of global oil inventories as a direct result of the difference between global oil supply and total world oil demand.

The highest number of annual views on the OPEC website were recorded for the June issue of the *MOMR* with 49,933 views, the second-highest figure on record. For the year, *MOMR* views on the website averaged 30,218 per monthly issue.

The *MOMR* video continued to be produced each month in 2022 and was uploaded to the OPEC website at the time of the re-

port's publication, highlighting key changes from the previous month's forecasts. The *MOMR* App features the latest publication of the report and presents a concise and comprehensive overview of key report messages, enhanced and supported by graphs and tables containing the latest relevant data sets. The *MOMR* App can be downloaded free of charge from any play store.

The 16th edition of the *WOO* incorporates an analysis of the industry's various internal and external linkages. The industry's shifting dynamics saw a renewed focus over the past year on the interplay between energy affordability, energy security, and the need to reduce emissions. The *WOO* provides insights into energy and oil demand, oil supply and refining, the global economy, policy and technology developments, demographic trends, environmental issues and sustainable development concerns. The 2022 edition of the *WOO* was launched at the Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC) 2022 in the United Arab Emirates (UAE) on 31 October.

The *WOO* 2022 presents a comprehensive outlook for the medium (2021–2027) and long term (2021–2045).

The world economy is expected to more than double in size, and the global population will likely rise by 1.6 billion between now and 2045. Global primary energy demand is forecast to continue growing in the medium and long term, increasing by a significant 23 per cent in the period to 2045.

All forms of energy will be needed to address future energy needs. Energy poverty remains an issue throughout the forecast period, with a wide gap remaining between developed and developing countries.

Oil is expected to retain the largest share in the energy mix throughout the outlook

period, accounting for almost 29 per cent in 2045. Other Renewables – including mainly solar, wind and geothermal energy – are set to expand by 7.1 per cent per annum on average, significantly faster than any other energy source. All major fuel types witness growth, except for coal.

Globally, oil demand is projected to increase from almost 97 mb/d in 2021 to around 110 mb/d in 2045. Non-OECD countries drive oil demand growth, expanding by close to 24 mb/d over the forecast period, whereas the OECD declines by over 10 mb/d between 2021 and 2045.

India is set to be the largest contributor to incremental demand, adding around 6.3 mb/d by 2045. Oil demand in aviation leads the sectoral breakdown, with growth of 4.1 mb/d from 2021 to 2045, given its slower initial recovery from the COVID-19 pandemic. It is followed closely by road transportation and petrochemicals.

The non-OPEC liquids supply expands in the medium term to 71.4 mb/d by 2027 before heading into an expected decline to 67.5 mb/d by 2045. OPEC liquids are set to grow to 42.4 mb/d by 2045, with their share of global supply rising from 33 per cent in 2021 to 39 per cent in 2045.

Global refining capacity additions are projected at 15.5 mb/d between 2022 and 2045. Robust medium- and long-term refinery capacity expansion in the Asia-Pacific, Middle East and Africa is partly offset by closures in developed regions. Strong demand growth is expected to lead to a tightening medium-term downstream market relative to 2021.

The global oil sector will need cumulative investment of \$12.1 trillion in the upstream, midstream and downstream through to 2045, equating to over \$500 billion each year to meet growing demand. Recent annual invest-

ment levels were significantly below what was required due to industry downturns, the pandemic, and an increasing focus on environmental, social, and governance (ESG) issues.

Crude and condensate flows between the Middle East and Asia-Pacific remain the most important oil trade link, with volumes increasing from below 13.5 mb/d in 2021 to 19.5 mb/d in 2045. The Asia-Pacific region is forecast to remain the most important crude oil importing region throughout the forecast period, with imports rising by over 7.5 mb/d.

Technological advancements are set to shape the global energy landscape, while public policies relating to energy demand and supply are expected to become more stringent over the forecast period. Enhanced global cooperation could allow for a more coherent, balanced and integrated approach to fulfilling the Paris Agreement and inter-linked Sustainable Development Goals.

Between the launch date and the end of the year, the PDF version of the *WOO* 2022 was downloaded 1,910 times, while the *WOO* 2022 website was visited over 37,000 times. The *WOO* App (on Android and iOS) was downloaded 1,946 times in 2022.

The roll-out programme involved presentations and in-person visits to various international fora, including the 3rd International Convention on Indonesia Upstream Oil and Gas; the 5th Congo International Energy Conference; the Vienna Energy Security Dialogue (VESD); and the Austrian Society for Energy Sciences Autumn Conference, as well as to the IFP Energies nouvelles (IFPEN) and TotalEnergies. In addition, the *WOO* was presented at OPEC Energy Dialogue programme meetings to dialogue partners Gas Exporting Countries Forum (GECF) and Japan, as well as at the 8th Technical Meeting on Asian Energy and Oil Outlooks.

The *Annual Statistical Bulletin (ASB)* is a comprehensive publication and excellent reference source for historical oil and natural gas data and key macroeconomic indices of OPEC Member Countries. It contains historical time series of major oil and gas flows based largely on official sources. It also functions as an important source of reliable information for the benefit of different stakeholders in the hydrocarbon industry. The *ASB 2022* contains key statistical data on oil and natural gas activities in each of OPEC's 13 Member Countries. In addition, it provides valuable data for many other countries grouped by newly adjusted, more disaggregated geographical regions and covers major economic zones all over the world. The new regional categorization was harmonized with other Secretariat flagship publications, such as the *MOMR*. In summary, the *ASB* provides a comprehensive quantitative overview of the oil and natural gas industries' global supply chains. In regularly publishing the *ASB* and making such data publicly available free of charge, OPEC seeks to ensure greater data transparency and an increased sharing of information about the oil and gas industry for the benefit of its stakeholders. Additionally, the 2022 edition of the *ASB* includes an interactive online version, freely available on the OPEC website, with historical time-series data going back to 1960. The *ASB* is also compiled in pocket and Smart App versions, with many advanced features.

The study *'Investment Requirements in the African Energy Sector'* aimed to identify investments in the African energy sector that could lead to a significant reduction in energy poverty across the continent. Building on the outcome of the OPEC Secretariat's 2021 study entitled the *'Long-term Energy Perspective for Africa'*, the study assessed

the current investment climate and regulatory framework in Africa, with a particular focus on the oil and gas industry. Investment opportunities in renewables were also discussed. In addition, challenges to investing in the African energy sector were analyzed, as well as possible pathways to addressing such challenges.

The study *'Non-crude Liquids Supply: Trends and Outlook'* had the objective of evaluating historical trends in non-crude liquids supply, examining key sources of supply and drivers of growth, and providing a supply outlook. The study focused mainly on liquid biofuels (fuel ethanol and biodiesel), gas-to-liquids (GTL), and coal-to-liquids (CTL), as well as methyl tert-butyl ether (MTBE) and kerogen.

A study on *'Recent Developments in the Road Transport Sector and Implications on Oil Demand'* had the objective of providing a medium- and long-term outlook for oil demand in the road transportation sector, while considering recent developments. This study investigated in detail various powertrain technologies in order to compare the current and future potential of internal combustion engine (ICE)-based and electrified powertrains, including not only battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs), but also fuel cell electric vehicles (FCEVs). The performance of fuel cells as an innovative addition to batteries is analyzed, together with the challenges of establishing a hydrogen supply chain. Electrification of road transportation also requires many components and minerals. The corresponding aspects are investigated in this study.

Additionally, a number of briefings and *ad hoc* reports were delivered in a timely manner on various topics related to the energy sector, including critical assessments

and comparisons of forecasts and studies produced by external organizations, as well as recent developments within the global energy sector.

'The Run-up to SB 56: UNFCCC Processes and Reports' assesses the key outcomes of COP26, including the 'Glasgow Climate Pact', and important decisions adopted on critical issues, in particular unresolved issues related to the Paris Agreement Work Programme (PAWP), which are crucial for the operationalization of the Paris Agreement. Moreover, the report critically assesses the key findings of two technical reports under the UNFCCC Standing Committee on Finance (SCF) on the financial needs of developing countries and overall climate finance flows, as well as initiating the process for setting the new collective quantified goal for climate finance (NCQG). The study also considers World Leaders Summit outcomes, initiatives, declarations and pledges, the cover decision of the 'Glasgow Climate Pact' and decisions on main items, especially those on unresolved issues critical for finalizing the PAWP and full operationalization of the Paris Agreement. Important issues stemming from these outcomes, documents and decisions are examined, alongside their implications for developing countries, including energy-exporting countries. Further, critical issues that require more attention going forward are identified. Documents on *'The Run-up to the Global Stocktake (GST) and Work Programme of the Katowice Committee of Experts on the Impacts of the Implementation of Response Measures (KCI)'* are also examined.

'The Run-up to SB 56: IPCC Processes and Reports' critically considers the key findings of the AR6 WG II and WG III contributions, with a focus on energy and importance to OPEC Member Countries. The study

examines the Summary for Policymakers (SPM) of the two recently released IPCC reports on adaptation and mitigation, aiming to enhance OPEC Member Countries' preparedness to defend their interests in the upcoming approval session for the AR6 Synthesis Report. Given that the outcome of the assessment and key findings of the AR6 will be considered in the implementation of the Paris Agreement and future COP decisions, the study critically discusses the key findings of the two WG contributions, briefly presenting reflections made during the respective two-week online approval sessions, with a focus on contentious issues.

'Synthesizing Climate Ambition for the First Global Stocktake under the Paris Agreement' is modelling study with the objective of quantitatively assessing UNFCCC Parties' latest available NDCs, with a focus on potential impacts on the energy sector, future oil demand and the energy mix. This analysis also provides insights into how future energy demand and the energy mix are likely to be affected by climate mitigation action and measures required to achieve Parties' long-term net-zero emissions targets. The possible adverse impacts of announced response measures in addressing the challenges of climate change are evaluated for the economies of OPEC Member Countries and non-OPEC countries participating in the DoC. The study quantitatively analyzes alternative energy transition pathways, reflecting potential future states of the energy system, while considering Parties' latest NDCs, their LTSs and 'net-zero emissions' targets. The value added of this empirical exercise is an estimation of associated adverse socio-economic impacts due to the implementation of climate mitigation response measures on energy-exporting developing countries.

'Recent Developments in UN Processes on Climate Change and Sustainable Development' assesses the progress of Sustainable Development Goal (SDG)7 on energy; the main discussions and outcomes of the HLPF; and substantive issues and key takeaways of high-level events on energy and climate change during the United Nations General Assembly (UNGA) that could affect and influence multilateral discussions on energy and climate change in various fora. The study considers the impact of multiple global crises on the capacities of countries, especially developing countries, to achieve the SDGs and address climate change. The study also evaluates the key findings of various reports of the UN system on progress towards the SDGs, including SDG7 on energy access, along with the challenges that hinder the advancement of the SDGs in developing countries; general debate and deliberations at the 2022 HLPF on challenges and opportunities for implementation of the 2030 Agenda for Sustainable Development; and the key takeaways of a Ministerial Declaration as the main negotiated outcome of the 2022 HLPF. Moreover, the study addresses the discussion and key takeaways of major UN system arrangements and UNGA processes and events on energy, climate action and sustainable development, including the 2022 SDG Moment, Informal Leader's Roundtable on Climate Action, UN Energy Plan of Action, and Energy Now SDG7 Action Forum.

'The Run-up to COP 27' assesses the key outcomes of SB56. This includes the operationalization of modalities, procedures and guidelines (MPGs) of the three main components of Article 6 on market and non-market approaches; the first global stocktake (GST) under the Paris Agreement to assess the collective progress of climate

action and support; the work programme for urgently scaling up mitigation ambition and implementation; the ad hoc work programme for setting a NCQG; the Glasgow-Sharm el-Sheikh work programme on the global goal on adaptation (GGA); and the Glasgow Dialogue on loss and damage. This study considers the COP27 Presidency vision, which addressed the main issues of climate change over ten thematic days, including decarbonization and energy, along with addressing further developments since the SB56 sessions in regard to some important COP27 agenda issues. In addition, it looks at the submission of OPEC's input to the KCI on activity 11 of its work plan.

Furthermore, several briefings were prepared, including *'The European Commission Proposal to Label Investment in Natural Gas and Nuclear Power as Green and Sustainable'*, *'Multi-stakeholder Forum to End Plastic Pollution'*, *'Sharm El-Sheikh Climate Change Conference'* and *'The Carbon Border Adjustment Mechanism (CBAM)'*. The EMD also developed a submission called *'Views on Efforts Related to Addressing the Social and Economic Consequences and Impacts of Response Measures'* for input to the first technical assessment (TA) for the GST, along with submissions on KCI, including *'Workplan Activity 5'*, and KCI *'Workplan Activity 11'*, which were shared with the UNFCCC Secretariat.

Technical meetings and workshops

The Secretariat additionally held technical and coordination meetings, including, importantly, the semi-annual meetings of the ECB, which were held in June and November. Both of these meetings included a special session on a timely topic, and outside experts were invited to share their insights with OPEC Member Country delegates.

Furthermore, the Secretariat continued regular technical interactions with various entities and agencies to discuss and share expert insights on oil market conditions and prospects.

For example, given the importance of the share of OECD commercial stocks in total global oil inventories, the OPEC Secretariat organized and held a workshop with a group of outside experts and DoC technical delegations on 15 September via videoconference. The workshop was convened to reassess stock share, which is used as a proxy measure in assessing changes to overall oil inventories. Accurately determining this share allows for the correlation of an implied global oil stock change derived from a global oil supply/demand balance with actual observed and reported stock changes.

In addition, the Secretariat attended the 13th Special Envoy for Data and Statistics Meeting (SEDAS), organized by the GECF, which took place on 15 March via teleconference. The meeting was attended by SEDAS representatives from ten GECF Member Countries: Algeria, Bolivia, Egypt, Equatorial Guinea, IR Iran, Nigeria, Qatar, Russia, Trinidad and Tobago and Venezuela. The main objective of the meeting was to address manifold issues in relation to energy data collection in GECF countries, particularly focusing on a thorough review of natural gas data collection. Moreover, parts of the meeting were also devoted to the importance of preparing and disseminating natural gas statistics, including presentations on the GECF Data Exchange Centre system and associated GECF mobile App. The meeting involved interactive discussions with participating special envoys, additionally addressing the significance of international energy dialogue. The OPEC Secretariat's participa-

tion in the meeting was very beneficial as it provided exclusive insights and technical knowledge of the data collection procedures of GECF countries. Moreover, it shed more light on the challenges and applied solutions that GECF Member Countries face when collecting natural gas data. Finally, the presence of the Secretariat in the workshop underlined OPEC's commitment to close cooperation with the GECF, as both Organizations share common interests, including many of the same oil- and natural gas-producing countries.

Moreover, in 2022 the OPEC Secretariat organized four tailor-made workshops on capacity building via videoconference for esteemed DoC Member Countries Congo, Gabon, Venezuela and South Sudan. The main goal was to address major challenges in association with directly communicated questionnaires, especially the Production and Supply Statement, JODI Oil, JODI Gas and the OPEC Annual Questionnaire (AQ).

On 12 May, a Special Workshop on Information Security Measures was organized at the OPEC Secretariat via videoconference. The workshop aimed to allow experts from the OPEC Secretariat to present currently implemented IT security measures in order to ensure the secure and continuous operation of OPEC core business processes, increase the Secretariat's resilience to all types of IT security threats and prevent information leaks. The workshop's two sessions covered the 'IT Security Infrastructure' at the OPEC Secretariat, focusing on IT infrastructure, network security, and data centre operations, as well as 'IT Security Measures and Practices', which focused on the "service layer", including software, access to data and documents, and other human aspects related to information security.

The 4th Workshop on Energy and Information Technology was held at the OPEC Secretariat on 14 June. The workshop featured two sessions. The first session, ‘Digital Transformation and Innovative ICT Technologies in the Energy Sector’, aimed to provide an overview of new trends and recent developments in digital aspects of the energy sector, with a focus on the impact of the Fourth and Fifth Industrial Revolutions (4IR/5IR) on the energy industry and the environment. It covered the topics of the Industrial Internet of Things, Big Data, and the digitalization of training. The second session dealt with ‘Cyber Security Today and Tomorrow: an Omnipresent Challenge’. It focused on providing a structured view of the complex challenges and interplay of human factors, emerging technologies and new challenges in the ICT domain. The session took a close look at the impact of new technologies (5G/6G) as cybersecurity enablers and best practices on how to build a safe, mature cloud security strategy. It also highlighted a human-centric approach as the last line of cyber defense and explored how certification and standardization of security initiatives ensure best practices in information security.

The Secretariat hosted the 5th Technical Workshop on Climate Change on 30 May under the theme: ‘The First Global Stocktake under the Paris Agreement: Challenges and Opportunities for Energy-Exporting Developing Countries’. This virtual event aimed to provide a conducive platform for discussion on the global stocktake (GST) process and to address progress on some main issues, including mitigation, adaptation and means of implementation, as well as equity. The technical workshop considered the various aspects of mitigation and adaptation actions in the context of NDCs; the provision of means of imple-

mentation, including finance and technology transfer and development; the GST process and inclusiveness; the contribution of market and non-market approaches towards implementation of NDCs; and the necessity of matching the provision of finance and support with climate pathways and evolving climate-related strategies and policies.

The workshop was organized back-to-back with the 21st Coordination Meeting on Climate Change, held on 31 May, which aimed to facilitate country delegates’ effective engagement in the upcoming 56th session of the UNFCCC Subsidiary Bodies (SB56), including enhancing understanding of key COP26 outcomes and assessing the key findings of the AR6 on energy-related matters. It considered common positions on the main issues under discussion in the UN climate negotiation processes for implementing the Paris Agreement and completing the AR6 reports, including the Synthesis Report. Particular attention was given to the special needs, national circumstances and development priorities of oil-producing and exporting developing countries, as well as the expected impacts of the implementation of climate response measures on their economies.

Moreover, the 22nd Coordination Meeting on Climate Change was held using a hybrid platform on 25 October and aimed to inform Member Countries and DOC partners on the updated status of upcoming climate change discussions, along with helping them solidify joint positions on major thematic areas and important issues in the run-up to COP27. The meeting considered common positions on the main issues under discussion in the UN climate negotiation processes to be followed up and negotiated at COP27, taking into account the key outcomes of SB56, critical actions in the run-up to COP27, and key findings of the

modelling study on *'Synthesizing Climate Ambition for the First Global Stocktake under the Paris Agreement'*. Matters related to recent developments in UN processes on sustainable development were also considered, including the proceedings and outcomes of the 2022 HLPF and the third SDG Moment.

Environmental debate

The Paris Agreement, under the auspices of the UNFCCC, as well as the 2030 Agenda for Sustainable Development, are the two landmark action plans adopted in 2015 for the world to enhance collective efforts for action and support the aim to reduce global greenhouse (GHG) emissions, increase adaptation capacity and resilience to the impacts of climate change, and advance progress towards economic, social and environmental sustainability. Yet, unprecedented climate impacts, as well as emerging cascading crises, such as geopolitical tension, food security, and energy access and security, as well as post-COVID-19 impacts, continue affecting every region of the globe and necessitate the enhancement and acceleration of actions to promote a sustainable and resilient recovery at various levels, while leaving no-one behind.

The pandemic and emerging cascading global crises brought widespread human and socioeconomic ramifications additionally affecting UN processes on climate change and sustainable development and exacerbating poverty. COP27 was a critical event for climate diplomacy to enhance trust, make considerable progress for the full operationalization of the Paris Agreement, strengthen climate actions and support – especially for adaptation and finance, as well as loss and damage – and agree upon an associated funding mecha-

nism to ensure inclusive, balanced and fair progress.

The UN Climate Change Conference (COP27/CMP17/CMA4) convened from 6–20 November, in Sharm El-Sheikh, Egypt, along with SB57, and was labeled an 'implementation-COP', with UNFCCC Parties expected to move from climate change pledges to implementation. COP27 was also considered a critical opportunity to address the needs of developing countries, especially on matters related to climate finance, loss and damage, and to support adaptation. At the same time, there were evident concerns over potential backslides on climate action and support owing to multifaceted and cascading global crises in 2022.

To this end, and to strengthen the global response to the challenges of climate change through enhancing ambition for climate action and support, the Parties agreed on two overarching cover decisions entitled 'Sharm el-Sheikh Implementation Plan' as the key outcome of COP27. Parties were called to communicate new or updated nationally determined contributions (NDCs) or long-term strategies (LTSs) and enhance a clean energy mix, including low-emission and renewable energy, at all levels as part of diversifying energy mixes and systems. Parties adopted the decision to set up a loss and damage fund, which would offer vulnerable countries financial assistance in helping tackle climate change, and established a work programme on a just transition to consider pathways for achieving the Paris Agreement goals.

At the same time, Parties could not agree on substantive outcomes or clear milestones on the way forward regarding several important issues, including arrangements for the provision of finance to a loss and damage fund, setting an NCQG, the mitigation work

programme, and the GGA. Therefore, in related decisions, Parties decided to continue deliberation on these matters in relevant processes during negotiation sessions in the run-up to COP28.

Parties also continued their discussions on the GST, and some mandated events were organized, including those covering mitigation and response measures, adaptation, and loss and damage. Discussions under the GST addressed a number of issues, including global mitigation pathways; transforming energy and industrial systems; transforming land and other systems; the impacts of response measures; developing countries' adaptation efforts; enhancing the implementation of adaptation action; adequacy and effectiveness of ongoing adaptation and support; and loss and damage. Several Parties and negotiating groups highlighted opportunities to enhance mitigation implementation, while a number of developing countries underscored the importance of equitable distribution of the remaining carbon budget, policy space and adherence to the principles of equity and common-but-differentiated responsibilities (CBDR). The technical and political phases of the GST will be addressed, and the GST process finalized at COP28.

Moreover, the Parties considered the three main components of Article 6 of the Paris Agreement, and agreed to track guidelines for a technical expert review, an associated report, and tables for an agreed electronic format to share relevant information. They also agreed on rules of procedure for the Article 6.4 Supervisory Body. Recommendations on further responsibilities are to be developed for consideration at CMA6. They additionally agreed on the work programme of non-market approaches (NMAs)

in two phases, as well as the operationalization of a related UNFCCC web-based platform for the promotion of NMAs.

The IPCC reports, the pre-COP meeting and the G20 meetings also provided impetus, including focusing high-level political discussion, on climate change ahead of COP27.

Moreover, the UN General Assembly, the 2022 HLPF, and the 2022 SDG Moment considered multiple emerging global crises, as well as the consequences of the COVID-19 pandemic – which outpaced any other major crisis in recent history – and their impact on the exacerbation of poverty and SDG implementation, as well as the need to enhance climate ambition for action and support. The session provided political leadership, guidance and recommendations on how to advance the full implementation of the 2030 Agenda and its SDGs during the 'Decade of Action and Delivery'.

The ministers and high-level officials attending the Forum addressed the challenges and opportunities around achievement of the SDGs. They highlighted serious concerns about ongoing and emerging cascading crises and challenges at the global level, including climate change; recent geopolitical tensions; exacerbation of poverty and inequality; food insecurity; debt distress; lack of energy access and security; and inflation. A Ministerial Declaration was the main outcome of the 2022 HLPF. It required around four months of negotiation by member states and was adopted by acclamation.

Considering emerging new trends and multiple global crises, the dynamic nature of multilateral and intergovernmental negotiation processes on climate change and sustainable development, as well as other environmental issues, the Secretariat has

expanded its research activities to cover new areas, including the process for developing a legally binding instrument to end plastic pollution, intending to assess recent related trends and emerging challenges and opportunities, while remaining engaged in UN processes and focusing on critical issues that interact with the energy system and are important for Member Countries.

Besides conducting research on substantive issues related to UNFCCC negotiation processes, which are crucial for the implementation of the Paris Agreement, and assessing progress made in achieving its objectives and targets, the Secretariat critically reviewed the first-order draft (FOD) and the final draft of the IPCC AR6 Synthesis Report and submitted its comments and input. It also proactively attended the 2022 IPCC sessions. The Secretariat additionally participated in relevant United Nations system virtual sessions on climate change, environmental matters and sustainable development and prepared policy-relevant research output, which was shared with Member Countries to raise awareness and provide a better understanding of these matters and their interactions within the energy system. In addition, major energy, climate change and sustainable development issues were thoroughly reflected in the 2022 edition of the *WOO* and LTS review.

The Secretary General's report to the Board of Governors and Ministerial Conference meetings presented the latest developments on new and emerging trends and developments on climate change negotiations and main COP27 outcomes, additionally examining the emerging cascading global crises and their impact on progress in achieving the SDGs, as well as the rollback of several SDGs in developing countries.

In addition, a total of 12 reports and studies were developed on issues related to energy, climate change and sustainable development, including a modelling study. The latter aimed to quantitatively assess UNFCCC Parties' new and updated NDCs, their long-term strategies and net-zero emission targets, along with the contribution of technology in reducing GHG emissions, focusing on the potential impacts of various climate pathways on the energy sector, future oil demand and the energy mix, along with socio-economic implications for energy-exporting developing countries. Several briefing notes were also prepared and focused on various critical emerging issues of importance to energy-exporting developing countries.

The 21st and 22nd Coordination Meetings on Climate Change for OPEC Member Countries and non-OPEC countries participating in the CoC, as well as the 5th Technical Workshop on Climate Change focusing on 'The First Global Stocktake under the Paris Agreement: Challenges and Opportunities for Energy-Exporting Developing Countries', convened in a hybrid videoconference and in-person format. The meetings provided a platform for coordination among Member Countries and facilitated an exchange of views on critical issues related to UN processes on climate change and sustainable development, and other relevant environmental matters.

Moreover, an OPEC delegation attended all critical UNFCCC sessions and meetings of constituted bodies, IPCC sessions, the HLPF, and the SDG Moment, as well as various relevant meetings organized by international and intergovernmental organizations, including those convened to develop an international legally binding instrument on plastic pollution, aiming to enhance

coordination among Member Countries and broaden collaboration and partnership with relevant stakeholders to address related global challenges.

The Secretariat remained engaged in activities implemented under the International Energy Agency Greenhouse Gas (IEAGHG) R&D Programme and completed a study under OPEC Defined Activities focusing on blue hydrogen. An OPEC delegation attended the IEAGHG Executive Committee meetings of the Programme, shared comments on several research activities, considered new proposed studies, and reviewed some studies.

Finally, the OPEC Secretary General proactively engaged in various high-level meetings related to climate change and universal energy access, including COP27. On that occasion, the Secretary General delivered an OPEC statement at the joint high-level segment and co-chaired, along with the Secretary General of the GECF, the first OPEC-GECF Joint Coordination Meeting on Climate Change.

International dialogue

OPEC has long been aware of the importance of dialogue between energy stakeholders. The interconnectedness of global markets, as well as the global impact of critical energy issues such as security of supply and demand, economic prospects and environmental issues, make such dialogues necessary to maintain balance in the oil and gas industry.

Considering this, OPEC strives to enhance its current partnerships and develop future opportunities for cooperation. The Secretariat was proactive in organizing and participating in international dialogues via many high-level meetings, technical meetings, joint studies, workshops and memberships.

In this context, OPEC's energy dialogue activities saw another successful year in 2022. With the impact of the COVID-19 pandemic receding, the Energy Dialogue Programme embraced the opportunity to hold international dialogue meetings in person or within a hybrid format. OPEC met with 22 energy dialogue partners at more than 30 events throughout 2022 and inaugurated a new energy dialogue with Japan.

Dialogues with regions/countries

The 15th High-level and 4th Technical Meetings under the OPEC-EU Energy Dialogue were held in April. Moreover, a number of high-level bilateral meetings were held in 2022, including in-person meetings between Haitham Al Ghais, OPEC Secretary General, and Kadri Simson, EU Commissioner for Energy, on the sidelines of the G20 Energy Transitions Meeting in Bali, Indonesia, on 2 September and in Vienna at the OPEC Secretariat on 15 December. These allowed both sides to discuss 2023 outlooks for the oil market and global economic development, as well as the future of the OPEC-EU Energy Dialogue.

Cooperation under the OPEC-Russia Energy Dialogue continued in 2022, with the Secretariat's participation in the Russian Energy Week International Forum in Moscow providing further impetus for the development of collaboration between the two parties, especially in technical and research aspects. The 9th High-level and 8th Technical meetings are scheduled to take place in 2023 in Vienna.

On 22 February, an informal High-level Roundtable Meeting of the OPEC-China Energy Dialogue was held between the OPEC Secretariat and the National Energy Administration (NEA) of the People's Republic of

China (PRC). The Meeting was co-chaired by Mohammad Sanusi Barkindo, former Secretary General of OPEC, and Zhang Jianhua, Administrator of the NEA, PRC. The meeting was arranged following a proposal by the NEA to discuss current oil market volatility and the tightened global supply-demand balance. The 6th High-level and 5th Technical meetings of the OPEC-China Energy Dialogue are scheduled to take place in 2023.

As part of the OPEC-India Energy Dialogue, on 8 February, a bilateral meeting between Jaideep Mazumdar, Ambassador of the Republic of India to Austria, and Barkindo was held at the OPEC Secretariat. On 1 November, on the sidelines of ADIPEC 2022 in Abu Dhabi, Al Ghais met with Hardeep Singh Puri, India's Minister of Petroleum and Natural Gas and Minister of Housing and Urban Affairs. The 6th High-level and 5th Technical meetings of the dialogue are scheduled to take place in 2023 in Vienna.

The 8th Technical Meeting on Asian Energy and Oil Outlooks took place on 10 November, hosted by OPEC in person and via video-conference. The meeting aimed to address a number of key issues related to energy, including prospects for energy and oil markets and the importance of energy security, particularly in the Asia-Pacific region. The 9th meeting is scheduled to take place in 2023 in Vienna.

Under the OPEC-US Energy Dialogue, the OPEC Secretariat participated in CERAWEEK 2022, which took place in Houston, USA, on 7–11 March. This included participating in a strategic dialogue session entitled 'Oil Market Outlook: Turbulence or Stability?'

In relation to the OPEC-Africa Energy Dialogue, the Secretary General delivered a keynote address at Africa Energy Week 2022, held in Cape Town, South Africa in October.

In an effort to develop a consensus on Africa's oil and gas resources at the conference, the Secretary General also led the OPEC-Africa Dialogue Session, featuring both African OPEC Member Countries and non-OPEC countries. The 2nd High-level and Technical meetings of the dialogue are scheduled to take place in 2023.

The inaugural 1st Technical Meeting of the OPEC-Japan Energy Dialogue was held on 14 November in a hybrid format, marking a crucial milestone in developing an open and candid dialogue between key energy consumers and producers. The meeting allowed both parties to reflect on points of common interest and the potential of such interactions, and present their market development forecasts under various planning horizons. The meeting also provided an opportunity to discuss Japan's long-term energy strategies and plans for the G7 Presidency in 2023.

Dialogues with international organizations

The 12th IEA-IEF-OPEC Symposium on Energy Outlooks was held in Riyadh, Saudi Arabia, on 16 February. The IEF hosted the Symposium under the patronage of the Minister of Energy of Saudi Arabia, HRH Prince Abdulaziz bin Salman Al Saud. The 13th IEA-IEF-OPEC Symposium on Energy Outlooks will be held on 15 February 2023 in Riyadh, Saudi Arabia.

The exchange of oil demand and supply data within the framework of the OPEC-IEA-IEF Collaboration on Historical Baseline Data Comparison continued in 2022. Regular exchanges are expected to continue in 2023 to review historical baseline demand and supply data, address market assessment findings, and follow up on various technical issues.

The 9th Joint IEA-IEF-OPEC Workshop on Interactions between Physical and Financial

Energy Markets (11th Meeting) was initially scheduled for 20 October. However, it was postponed until March 2023.

OPEC maintained its continuous and active participation in the JODI programme, with several focus areas such as the JODI-Oil and JODI-Gas World Databases.

As part of continuous collaboration and following the 4th Technical Meeting on 3 October, the 3rd High-Level Meeting of the OPEC-GECF Energy Dialogue was held on 10 October in person at the OPEC Secretariat and was co-chaired by Al Ghais and Eng. Mohamed Hamel, Secretary General, GECF. Cooperation in 2022 also included the 13th GECF Special Envoy on Data and Statistics, held on 15 March. The Secretariat participated in and delivered a presentation at the 1st GECF Coordination Meeting in the Run-up to COP27, organized on 15 September. The first OPEC-GECF Coordination Meeting on Climate Change convened on 14 November in Sharm El-Sheikh, Egypt, on the sidelines of COP27 and was co-chaired by Al Ghais and Hamel. The 4th High-level and 5th Technical meetings are scheduled to take place in 2023 in Doha. The 2nd OPEC-GECF Coordination Meeting on Climate Change is expected to be held during COP28 in Dubai, the United Arab Emirates.

Under the dialogue with the International Monetary Fund (IMF) and the World Bank Group (WBG), the OPEC Secretariat attended the Spring Meetings of the IMF/World Bank meetings on 13–21 April via videoconference. As per longstanding practice, OPEC participated in the virtual meetings of the International Monetary and Financial Committee (IMFC) and G24 meetings and provided written statements on the oil market to the distinguished delegates of the IMFC meeting, highlighting OPEC's efforts to stabilize

the oil market and emphasizing its positive effect on the global economy. OPEC was also given the opportunity to present an oral intervention in the Spring Meetings of the G24. The Organization participated in person at the fall Annual Meetings, held in Washington DC on 10–14 October. These meetings, as always, provided a valuable opportunity to discuss oil-market-related developments and explain the efforts OPEC and its partners undertook to safeguard the stability of the oil market in the face of various challenges. This longstanding practice of cooperation is expected to continue into and beyond 2023.

Under the auspices of the OECD International Regulatory Cooperation, the OPEC Secretariat participated in the 9th Annual Meeting of International Organizations (IO), held on 5–6 December in Paris.

OPEC representatives joined the 25th and 26th meetings of the Vienna Energy Club, held on 23 March and 3 November and hosted by the OPEC Fund and the Organization for Security and Co-operation in Europe, respectively.

The OPEC Secretariat participated in the International Civil Aviation Organization's Stocktaking Seminar on 'Aviation In-Sector CO₂ Emissions Reductions', which took place on 18 July via videoconference. The Seminar provided important input related to the views of the aviation industry related to technology, alternative fuels and potential efficiency improvements, especially in addressing climate change and reducing GHG emissions.

An Agreement of Cooperation between OPEC and the International Marine Organization (IMO) was signed on 4 April, granting the OPEC Secretariat observer status in the IMO.

Global energy initiatives and programmes

OPEC actively participated in G20 energy-related events organized under the

G20 Indonesian Presidency in 2022. The overall theme of the G20 Indonesian Presidency is “Recover Together, Recover Stronger”.

The OPEC Secretary General participated in the G20 Energy Transition Ministerial Meeting on 2 September in Bali. The event represents the culmination of G20 energy initiatives. The Secretary General delivered an intervention highlighting the essential role that steady and stable investment flows play in enhancing energy security and market stability and stressed that an “all-fuels, all-technologies” approach is critical in achieving a stable and secure energy transition towards affordable and reliable energy for all.

Prior to the G20 Energy Ministerial, OPEC delegations actively participated virtually in the 1st Meeting of the G20 ETWG (24–25 March 2022); the 2nd G20 ETWG meeting (23–34 June 2022); and the 3rd ETWG (31 August and 1 September). Additionally, OPEC attended a number of side events organized by the G20 Indonesian Presidency on a broad range of energy-related issues, including ‘Making CCS/CCUS Affordable’, ‘Ensuring a People-Centred Transition for All’ and ‘Assuring Energy Access and Transitions in Archipelagic States’.

The 17th G20 Heads of State and Government Summit (Bali Summit) was held on 15–16 November in Bali.

OPEC participated in the 61st and 62nd sessions of the IEAGHG Programme Executive Committee, held via videoconference on 11–12 May and in a hybrid version on 21–22 October, respectively. The Programme conducted a study called ‘*Blue Hydrogen: Beyond the Plant Gate*’ with Element Energy, in close collaboration with the OPEC Secretariat, under so-called OPEC-defined activities. The next Executive Committee meetings are scheduled to take place

on 17–18 May 2023 and in October 2023 in a hybrid format.

Dialogues with energy/technology companies

The 2nd Workshop with Energy Companies was held via videoconference on 24 May. In its second edition, the workshop addressed the role of environmental and ESG standards in the oil and gas industry and how their incorporation has affected the different streams of traditional financing for energy sources. The moderator-guided workshop had a wide-reaching agenda consisting of three sessions, each featuring a panel of industry, financial institution and government experts.

The OPEC Secretariat held its 4th Workshop on Energy Technology on 23 May via videoconference. The goal of the workshop was to discuss and exchange information on a number of key topics relevant to energy technology. This year’s agenda focused on emerging sustainable technologies, most notably related to CO₂, and consisted of two moderator-guided sessions, each featuring a panel of experts from industry and government.

Dialogues with research institutes/academia

The OPEC Secretariat continued its ongoing cooperation with the King Abdullah Petroleum Studies and Research Centre in 2022 by attending various events and exchanging information, including sharing OPEC publications.

Potential dialogues

In 2022, the OPEC Secretariat established a new energy dialogue with Japan and considered South Korea as a potential dialogue partner.

The Secretariat is one of the main partner organizations within the Joint Organizations

Data Initiative (JODI). The main activities of JODI-Oil and JODI-Gas relate to enhancing data quality of the two initiatives; expanding the current data collection to cover other energy commodities; and underscoring the importance of JODI and data transparency in the international energy market scene. The initiative aims to address specific challenges, such as resources in some countries and organizations and the overall performance of OPEC Member Countries. The Secretariat, in line with its commitments to energy data transparency, continued its active stance in promoting JODI by significantly contributing to both JODI-Oil and JODI-Gas initiatives in 2022. The Secretariat attended the JODI Inter-Secretariat Meeting via videoconference in June. Furthermore, capitalizing on significant progress achieved, the Secretariat stepped up its efforts to address challenges regarding overall data quality – including coverage and timeliness – for some major OPEC and non-OPEC oil and gas producing and consuming countries in 2022.

Activities within the framework of the DoC

The DoC has been instrumental in countering the unprecedented impact of COVID-19 on the oil market, drawing on its six years of experience in working towards rebalancing fundamentals and helping return sustainable oil market stability.

The ongoing efforts of the DoC helped restore market balance, confidence and stability and provided crucial support for an economic recovery. The DoC framework also provides monitoring mechanisms that regularly evaluate global market conditions. This cooperation has a very successful record, as exhibited by the decisions taken following the pandemic.

Within the framework of the DoC, there were 11 JMMC meetings and nine JTC meet-

ings in 2022. These were held in a hybrid format starting in the second half of 2022.

Two technical meetings of OPEC and non-OPEC producing countries were held in 2022 under the umbrella of the DoC.

The 11th Technical Meeting of OPEC and non-OPEC producing countries took place on 23 June in a hybrid in-person and videoconference format. The event was dedicated to examining recent trends in oil upstream investment and impacts on short-term prospects. The meeting aimed to explore challenges for non-OPEC supply, such as the effect of newly rising inflation and interest rates on oil production costs. Moreover, experts sought to ascertain the expected duration of the ongoing mandate for capital discipline by the US shale oil industry and addressed the likely impact of the a shortage of skilled labour. Finally, the meeting discussed the general effect that immediate energy transition measures have on the short-to-medium-term outlook for non-OPEC supply.

The 12th Technical Meeting of OPEC and non-OPEC Producing Countries was held on 1 December in a hybrid mode. The main theme of this meeting was to re-assess the relationship between economic and oil demand growth emerging from the COVID-19 pandemic. The discussion focussed on the historical relationship between global economic growth and demand for oil and how this relationship may have evolved in terms of structural changes caused by the impact of the COVID-19 pandemic. Various sectors of the economy, along with their respective demand for oil, were explored for further insight into how this relationship may have shifted and how much of this shift could be considered structural or cyclical. The invited experts concurred that oil demand growth

had slowed due to pandemic-related events and that non-OECD countries would continue to drive increases in the medium-to-long term, while at the same time noting that global oil demand has not yet seen a peak. Nevertheless, it was pointed out that energy carrier substitution would play a major role in decoupling oil demand from GDP growth in the future.

It is worth mentioning that the 183rd Meeting of the OPEC Conference decided to replace the IEA with Rystad Energy and Wood Mackenzie as new official SS for crude oil production volumes, hence seven SS are in place instead of six. In this context, the OPEC Secretariat first organized two separate technical workshops with Rystad Energy and Wood Mackenzie to understand the oil market methodologies and assessments employed by them at a granular level. In a subsequent step, the OPEC Secretariat organized a technical workshop on 11 May via videoconference between countries participating in the DoC and seven respective SS reporting crude oil production volumes. The objective of the workshop was to discuss methodologies used by the various SS to assess crude oil production data by OPEC Member Countries and countries participating in the DoC, and hence facilitate open discussion amongst participants to enhance data quality further and reduce discrepancies in reported data between SS and direct communication by countries to the Secretariat. The meeting was attended by 63 participants from OPEC Member Countries, countries participating in the DoC, SS, and the OPEC Secretariat.

Review of the OPEC Long-Term Strategy

The OPEC LTS provides a coherent and consistent framework for the realization of

the Organization's mission today and in the future. It sets three specific objectives: exploring contrasting overall energy landscape scenarios; formulating elements of the strategy to attain agreed-upon objectives; and addressing identified key challenges facing the Organization.

In line with the decisions of the 182nd and 184th Meetings of the Conference, the third review of the LTS was completed in 2022. The final document received approval at the 185th Meeting of the Conference on 4 December.

It assessed the achievements of OPEC since the last review of the LTS in 2016, looked at objectives, and identified key challenges under four clusters, addressing critical issues and main drivers going forward. It explored new plausible scenarios and sensitivity cases to capture certain future developments using a quantitative model approach. Furthermore, the strategy elements in these scenarios were developed, as were the ensuing recommendations for their implementation.

The third review of the LTS constituted a critical process to reflect upon the impact of COVID-19 and possible repercussions, and how they may shape the global energy system and a sustainable energy transition.

Following adoption of the LTS 2022, the Secretariat will undertake the fifth edition of the MTP in 2023.

Training and knowledge transfer

Since its re-configuration in 2020, the OPEC Academy (OA) has persistently pushed the envelope, upholding the Secretariat's aspirations for human and professional development and fusing around several mutually reinforcing pillars. First, OA programmes enabled participants and the OPEC Secretariat to continually embrace the exchange

of new knowledge and understanding and enhance critical, practical, professional and personal skills. In this context, the OA provided world-class quality provisions for OA beneficiaries, specifically aligned with their professional ambitions and intended outcomes. Second, the OA facilitated academic and professional debate on a global scale on salient economy- and energy-related issues and third, the OA continued to be one of the Secretariat's vehicles to promote worldwide institutional dialogue and cooperation.

In 2022, the OA maintained its strong momentum, advancing the Secretariat's unwavering adherence to its human development aspirations. The Multi-Disciplinary Training Course (MDTC) hosted the most participants on record with 89 attendees, 89 per cent higher than in 2021. They came from 11 Member Countries, the African Petroleum Producers' Organization (APPO) and the Secretariat. The Internship Programme (IP) provided on-the-job practical training and mentorship to 10 interns – a 43 per cent increase over 2021 – while the Summer Fellowship Programme (SFP) hosted 12 candidates, twice as many as in 2021, representing five Member Countries across five different Secretariat Departments and Units (DOUs). The Visiting Research Fellow Programme (VRFP) enhanced the professional competence of two research fellows, twice as many as in 2021, through comprehensive research studies. The Vienna Energy Scholar Programme (VESP) enjoyed remarkable success in its second iteration at the OPEC Secretariat in September, gaining further institutional prominence across Austria. The Lecture Series Programme (LSP) coordinated 17 lectures, an increase of 42 per cent from the previous year, covering various areas influencing the oil market, while the

OPEC Energy Review (OER) published four issues marked by significant improvements in terms of depth and outreach. In-House Training (IHT) featured four tailor-made training sessions for 73 OPEC professionals. Finally, the cooperation with Wien University Executive Academy (WUEA) is getting ready to move on to the next level, with the WUEA more actively contributing to the Secretariat's activities.

All activities were accomplished on time and within the approved budget, achieving the highest value added for both participants and the Secretariat. In this context, systematic critical evaluations of progress achieved and lessons learned were discussed and thoroughly attended to during the operational phases, keeping the implementation framework lean, efficient and adaptable to new situations.

Moreover, the 2022 OA cycle was marked by a number of institutional achievements.

The OA Intranet Page was reformed and successfully launched in April alongside the upgraded OPEC Intranet. The current OA page boasts an engaging and contemporary design, offering a more systematized, coherent and user-friendly structure that celebrates the Programmes' achievements and provides visitors with up-to-date information on all current and upcoming opportunities under the OA umbrella. The sanitized content of the OA page is expected to be part of the redesigned OPEC Internet to allow global outreach.

The OA is now embedded into the administrative structure of the Secretariat as a functional area.

The OA Framework and Guidelines were revisited and formalized to reflect brisk and organic growth since 2020, as well as to establish an effective platform for its ongoing functional growth evolution in terms of

strategy, scope, activities, content, partners, beneficiaries, outreach, technology, and other parameters in view of and influenced by the evolving needs of end-users and the Secretariat.

The objectives and operations of the OA are now judiciously formulated, consistently road-mapped and streamlined into the Secretariat's objectives in the institutionalized OPEC Academy Work Programme and Budget document. This detailed planning document is set to generate performance efficiency by visibly integrating requirements, goals, expected results and deliverables, along with budgetary allocations.

As the OA has robustly gathered powerful momentum – both operational and institutional – it is set to achieve its ambitions for 2023, chiming in with a coherent and consistent host of objectives, activities and deliverables by the Secretariat. As a result, the OA will generate a host of wide-ranging and tangible benefits for OPEC Member Countries and partners, including those within the framework of the CoC.

Database and communication

In 2022, the Statistics, IT Development and Information Centre teams provided comprehensive data services to the Organization and its Member Countries. The statistical databases were updated in a timely manner, as well as efficiently maintained and expanded in terms of coverage. Moreover, data quality was tangibly improved through continued automation of data processing and validation.

Web applications developed for the support services division were upgraded with new functionality that improved internal operations and activities.

The Performance Appraisal module has enhanced the HR System, which supports

conducting the annual staff appraisal online. It reduces manual paperwork, ensures confidentiality, and documents the complete process automatically.

The reorganization of OPEC's physical and digital archive continued throughout the year. A new file plan was created, which serves as the basis for streamlining archiving operations at the Secretariat.

The setting up of the Information Security Management System according to the ISO 27001 standard has continued. A Secretariat-wide Business Impact Analysis was completed and used as a basis for the IT security risk assessment and the development of appropriate measures and controls.

The execution of the Security Awareness Training (SAT) Programme continued and expanded, adding mandatory onboard training, specialized and targeted training for selected staff, and introducing new distribution channels for SAT-related information.

Locklizard, a document watermarking and encryption system, was introduced in order to facilitate the electronic exchange of classified information among authorized stakeholders from the Secretariat and Member Countries. Following successful implementation, the project was transferred to AITSD for its operational phase.

A bespoke system was built to enable the sharing of studies and reports produced at the Secretariat through the OPEC Intranet.

An upgrade of the infrastructure utilized for data management at the Secretariat was completed. New hardware servers have been put into production, allowing for faster and more efficient daily workflows. The software part of the infrastructure was updated to provide the necessary levels of stability and security to services used daily by Secretariat staff and Member Countries.

Work on unifying the mobile versions of OPEC flagship publications into one standard OPEC (mobile) app – the cross-platform operational system – gathered momentum. The aim is to improve user experience and enlarge the user base for each publication by integrating content into one channel.

The interactive *ASB* and *WOO* websites were updated with the latest release of the publications.

The OPEC Intranet was revamped to reflect the latest technology in web design. The OPEC intranet now enjoys a modern look, clear content structure, and a user-friendly interface.

The Development and Statistics Teams commenced working on the next version of data processing and validation tools for the OPEC World Energy Model in support of the Energy Studies Department's energy modelling developments.

Activities aimed at upgrading the OPEC Document Management System platform got underway. These are necessary to ensure the availability and stability of the platform in years to come and to directly support the Secretariat's internal collaboration and that of OPEC Member Countries and countries participating in the DoC.

Online conferencing, video streaming and multimedia activities for meetings of the OPEC Conference, JMMC, ONOMM and other events and meetings were efficiently supported throughout 2022.

The Development Team attended training sessions to keep abreast of the latest developments in research methodologies and ISO 27001 implementation. The Website Management platform utilized daily by PRID to update the OPEC website was successfully upgraded and transferred to the new infrastructure.

The OPEC Big Data pilot version of the platform incorporating Phases 2 and 3 was

maintained and enhanced in the production environment. It was made available to OPEC Member Country Governors, National Representatives, Secretariat staff and other approved users. Furthermore, the revamp and redevelopment of the OPEC Big Data platform began in 2022 in order to address received feedback, enhance data provision and visualization, and facilitate access to selected data from the OPEC Statistical Database. The aim is to provide quality assured time series and basic analytical functionality to interested parties from the Secretariat and Member Countries through the OPEC Intranet.

The 21st Annual Statistical Meeting (ASM) convened on 17–19 May as a webinar for the third consecutive year due to COVID-19-related limitations. The ASM is fundamental in strengthening regular oil, gas and other energy-related statistical data flows from Member Countries to the Secretariat. This year's ASM included a discussion on data exchange with non-OPEC CoC countries. The first two days of the meeting were devoted to interactive discussions with each OPEC Member Country on the submitted OPEC 2021 Annual Questionnaire (AQ 2021) and the 2022 *ASB* blueprint. The third day of the meeting was dedicated to an interactive discussion with attending CoC countries on their data submissions and data exchange possibilities. Forty-seven participants from 16 OPEC Member Countries and CoC countries attended this year's ASM meeting.

The ASM has contributed significantly to improving data quality and transparency and enhancing the understanding of data collection and the needs of Member Countries. In addition, the ASM provided insight into the data collection and exchange practices of attending CoC countries and led to further improvements in the *ASB* regarding data

transparency and accuracy. Finally, it was agreed to enhancing data quality and submission further and continue with strong cooperation in the form of training workshops tailored for individual Member Countries in the near future.

In 2022, the OPEC Information Centre assisted OPEC staff members, delegates from OPEC Member Countries, and external users by providing research support and reference services, extending access to online databases, distributing digital reports to assigned user groups, and fulfilling reference and Helpdesk requests. The Information Centre continued developing its print and digital collection by purchasing books and reports throughout the year. Moreover, an annual assessment of OPEC subscriptions was carried out to achieve cost and usage efficiencies, allowing for subscriptions to new services while cancelling some titles due to low usage or the existence of alternative sources.

Furthermore, the Information Centre continued with its regular activities, including completion and implementation of initiated projects. The Digitization of the Information Centre project – which commenced in 2020 – gained fresh momentum when COVID-19-related restrictions were lifted in May at the Secretariat. The Information Centre continued processing existing digitized maps and pamphlets alongside the implementation process for the digital interface software Visual Library. The project's main goal is to provide access to the valuable library collection to external users from OPEC Member Countries and worldwide. Digitization refers not only to scanning or capturing analog content but a suite of activities enabling discovery, delivery, access and long-term preservation of the library collection.

Regarding research support services, the Information Centre provided 2,071 publications in response to 481 research requests in 2022.

New Energy Modelling System

The development of a new energy modelling system continued in 2022 with the primary objective of developing an integrated modelling tool that can make medium- and long-term projections of the global energy system, with a particular focus on oil markets. In 2022, model development continued with the delivery of component modules and the preliminary model. In parallel, an updated Graphical User Interface was provided, and two workshops were held in May and October that allowed for testing and discussion of the OPEC World Energy Model (OWEM).

The contract period with Cambridge Econometrics for developing the model was extended to March 2023 without any financial implications. This extension will allow the Secretariat time to perform the necessary testing and calibration of the final model and populate the model with data, which would be challenging to sufficiently complete by the end of the current contract period. The final model is expected to be delivered by March 2023.

Furthermore, the Secretariat established a support contract with a vendor for a period of two years, starting from April 2023. This contract will provide ongoing support to the OPEC Secretariat, including ensuring the continuous implementation of OPEC data and scenarios and projections into the model, additional training for staff at the OPEC Secretariat, the development of new or improved functionality, as well as the correction of any errors remaining within the model. The proposed contract provides flex-

ibility for OPEC to engage the vendor when required.

PR and Information Department

The year 2022 was filled with many challenges, the most predominant of which were the ongoing COVID-19 pandemic, along with geopolitical unrest in Eastern Europe. The market had begun a fragile recovery from the pandemic when the conflict in Eastern Europe broke out in February, which triggered further market volatility, an energy crisis and a restructuring in trade routes.

The countries in the DoC, in its sixth year in 2022, immediately stepped in to address the situation, continuing monthly Joint Technical Meetings (JTC), Joint Ministerial Monitoring Committee (JMMC) meetings and extra OPEC and non-OPEC Ministerial Meetings (ONOMM) until late in the year. These required extensive support from Public Relations and Information Department (PRID) in the form of speechwriting, *OPEC Bulletin (OB)* articles, media relations, news items, press releases, social media posts, reports and audio-visual (AV) coverage. As COVID-19 restrictions eased, the Secretary General travelled further abroad to attend various meetings and functions.

PRID staff continued to attend to duties related to the historic DoC, which was signed on 10 December 2016. A decision was made at the 33rd ONOMM on 5th October to extend the DoC until the end of 2023, in the interest of oil market stability. The meeting also decided to reduce sittings of the JMMC to every two months and the Meetings of the Conference and ONOMM to every six months, in accordance with the regular schedule prior to the pandemic.

Meetings associated with the DoC were ongoing throughout the year, including 11 regular meetings of the JMMC (36th–47th) and nine JTC meetings (58th–66th), along with ten ONOMM (24th–34rd), all of which required extensive support from PRID staff.

The public image of OPEC and its enhancement was very significant during 2022, as OPEC and its work to stabilize the oil market in extraordinary times continued to be closely examined. Once again, the Organization's efforts were widely recognized on the broader world scale and closely followed by the industry, world leaders, academics, media, etc.

PRID focused on the importance of improving and enriching the image of the Organization as identified in OPEC's most recent LTS.

Diverse tasks were undertaken over the year – from editorial writing and speechwriting, to public and media relations and outreach programmes, to the design, editing and production of materials and publications, to AV activities and the distribution of key publications. PRID played a leading role in ensuring that the Organization was presented to the public in a positive and desirable manner at all times.

The Secretariat's messaging was adjusted throughout the year to keep abreast of the latest changes to the market, while generating high-quality output. The Organization's essential messaging through its various outreach channels remained strong in 2022, including 'openness and transparency', 'dialogue and cooperation' and 'stability and security'. These themes were enriched as the oil market continued to recover from the pandemic and stabilization efforts were required in light of geopolitical unrest.

Although PRID was primarily responsible for editing, designing, producing,

printing and distributing materials, the content of this output varied greatly, depending on publication type.

As is the norm, there was especially close cooperation between PRID and the Secretariat's RD in the area of publications throughout the year. The work of PRID also required close cooperation with other Departments and Units, including SGO, LO, DSD, PSD, ESD and EMU, as well as with Member Countries. All departments within the Secretariat benefitted from the expertise of PRID's three sub-sections – editorial, public relations (including AV), and design and production (D&P).

Editorial Unit

The Editorial Unit directly supported the OPEC Secretary General and other Members of Management in carrying out their duties in 2022 through the provision of speeches, press releases, news items, video scripts, talking points, media messaging, background information for interviews and commentaries and liaising with the press.

Articles were written for various magazines, as well as for the Organization's own magazine, the *OB*. Additionally, a great deal of time and effort was spent editing, revising and proofreading research documents, presentations and reports and offering support at various meetings.

Speeches and statements

In 2022, 188 speeches were written for the Secretary General, the Director of the Research Division and other OPEC officials, compared with around 185 in 2021 and 150 in 2020.

They were developed in collaboration with RD for various conferences, seminars,

workshops and meetings, both internal and external. These were delivered by the Secretary General, senior OPEC officials, as well as high-level members of Member Country delegations to representatives from all sectors of the energy industry, as well as governments, academia and the media.

The Secretary General (Mohammad Sanusi Barkindo until 5 July and Haitham Al Ghais afterwards) virtually attended a great number of external major industry events early in the year and later many in person, delivering keynote speeches, statements and interventions. They included *inter alia*: the 12th UAE Energy Forum; Egypt Petroleum Show – EGYPS 2022; the 5th Edition of the Nigeria International Energy Summit (NIES); CERAWEEK; the Atlantic Council Global Energy Forum 2022; the International Oil Gas Refining & Petrochemical Exhibition 2022 in Tehran, IR Iran; Mediterranean Gas 2022 in Athens; the World Energy Forum (WEF) Davos 2022; the RBC Global Energy, Power and Infrastructure Conference; the 21st edition of the Nigeria Oil and Gas (NOG) Conference and Exhibition; the Future Energy Forum, Ministry of Energy and Infrastructure UAE; the G20 Energy Transition Ministerial Meeting; the 42nd Oxford Energy Seminar; Africa Energy Week; ADIPEC; and COP27.

Interest was very high in OPEC's activities and messages in 2022, which could be seen in the reporting and analysis of speeches, statements and interventions delivered at various events. The subsequent publication of selected speeches and other coverage on the OPEC website continued to be useful in generating traffic, attracting positive coverage and disseminating the Secretariat's message.

In 2022, guest editorials, articles and Q&As were provided for several publica-

tions. These included: a G7 publication; a G20 publication; two Op-Eds on climate change in the lead-up to COP27 in Arabic and English; Financial Times; Al-Ahram; Business Year (Kuwait); ADIPEC Show Daily; GECF; Nigerian Information Ministry; Trend News Agency; Caspian Energy Journal; Atlantic Council; and IQAM Invest.

JMMC and JTC

There were nine JTC and 11 JMMC meetings in 2022, each of which required editorial and speechwriting support. The editorial team prepared speeches for the Secretary General, the Chairman of the JMMC and the President of the Conference for most of these occasions; drafted press releases for each meeting; and provided editorial assistance for the finalization of committee reports. JMMC meetings were extensively covered in the *OB* throughout the year.

Videos

In addition to the editorial section's regular activities, PRID has for some years been producing scripts, voice-overs and visuals for videos to cover both special and regular events as required. Videos were also made each month for the *MOMR*, which ran on the OPEC website, as well as for the *ASB* and *WOO*.

Publications

PRID made a significant contribution to all major publications, including editorial support, input, promotion and production. These contributions helped ensure the consistency of editorial quality, style, messaging and design. OPEC publications in 2022 included the regularly produced, flagship *MOMR*, which is closely followed by the oil industry, as well as many other external and

internal documents. Editorial staff also attended various meetings (either via Webex or in person) and assisted in drafting and editing internal write-ups and reports. They produced articles based on meetings for the *OB*. In addition, staff produced content for the OPEC website, including press releases and news items, and assisted in providing editorial advice and input of various kinds to departments within the Secretariat upon request over the year.

Another regular feature of PRID's Annual Work Programme is the annual *OPEC Diary*. The editorial content for this publication is generated and edited by PRID and approved by the Secretariat. The *ASB* continues to be published annually, providing accurate, reliable and timely historical data on various aspects of the global oil and gas industry. The 16th edition of the *WOO*, launched on 31 October at ADIPEC, provides an in-depth look by the Secretariat at the unprecedented scale and impact of the COVID-19 pandemic on the global energy and oil markets. It also provides a thorough review and assessment of the medium- and long-term prospects for the global oil industry to 2045, as well as analysis of various sensitivities that have the potential to impact the petroleum industry in the years ahead. This document has become a valuable reference tool for people in the industry, and interactive versions of the *WOO* have been available for some years.

Large parts of the *Annual Report (AR)* – which provides a detailed description of the market, as well as activities of all departments/sections/units of the Secretariat – are produced by the editorial section, and its editing and production are undertaken in-house.

The monthly *OB* continued to highlight the activities of the Secretariat and the

Organization's Member Countries. Its coverage encompassed articles of interest on various topical issues, as well as informative analytical features. In 2022, editorial staff and contributors wrote a total of 144 articles and features for the *Bulletin*.

Of note in 2022 were articles on the following topics: in January, coverage of the 182nd Meeting of the OPEC Conference; 24th ONOMM; the appointment of Haitham Al Ghais as the next OPEC Secretary General; a look back at the DoC and half a decade of success; Secretary General Barkindo's visit to Iraq; ADIPEC; High-level OPEC-China Dialogue; World Petroleum Congress 2021; 10th DoC Technical Meeting; the Organization's hosting of the Vienna Energy Club; revitalizing old oil wells; and an obituary for Abdullah Ismail, who had been present at the first meeting leading to OPEC.

For the March edition, there was coverage of the 26th ONOMM; EGYPS 2022 and the Maadi Yacht Club; 5th Nigeria International Energy Summit; awards for Secretary General Barkindo; CERAWEEK in Houston; COVID-19 timeline; essay on the role of oil for the Atlantic Council Global Energy Forum; Austrian Diplomatic Academy visit; 12th IEA-IEF-OPEC Symposium on Energy Outlooks; 11th Middle East Conference; LDT meeting; nuclear fusion; Libya's cultural history; air travel and the pandemic.

In the May edition, the 27th and 28th ONOMM were reported on, along with a visit to Venezuela, including an article on its capital Caracas and Canaima National Park. In addition, there was coverage of Angola's hosting of an African Petroleum Producers' Organization (APPO) event; EU-OPEC Energy Dialogue; Atlantic Council's Global Energy Forum; 4th Workshop on Energy Technology; 22nd MDTC; obituary for

Sheikh Khalifa bin Zayed Al Nahyan; and a special on ensuring capacity growth for the future.

The July edition almost exclusively covered Secretary General Barkindo's passing, highlighting the achievements over his six-year tenure and featuring condolences from around the world. It also included coverage of Nigerian oil icon the late Dr Rilwanu Lukman and President of Nigeria, Muhammadu Buhari. Additional to this, articles were written on missions to Greece, America, Iraq (6th Iraq Energy Forum) and London (Oil and Gas in the 21st Century); launching of the OPEC history book; 5th Technical Workshop; and a climate change workshop and coordination meeting.

In August, articles on new Secretary General Haitham Al Ghais were prominent; along with the unveiling of the ASB; 29th, 30th and 31st ONOMM; Iran International Oil, Gas, Refining & Petrochemical Exhibition; and a book review on *'The Good Hand'*.

The October *Bulletin* covered the 32nd and 33rd ONOMM; Venezuela mission, along with the country's Cueva de Kavac; Equatorial Guinea visit and interview with Minister Gabriel Mbaga Obiang Lima; 3rd OPEC-GEFC Energy Dialogue; UAE 2nd Future Energy Forum; 42nd Oxford Energy Seminar; G20 energy transition meeting; 2nd Vienna Energy Scholar Programme; reunion with Dr Subroto; a book review on *'A Pipeline Runs Through It'*; FIFA World Cup; and two automotive museums.

In the December *Bulletin*, articles were written on the 185th Meeting of the OPEC Conference and 34th ONOMM; ADIPEC 2022; WOO 2022 launch; feature on HRH Prince Abdul Aziz Bin Salman; COP27; African Energy Week; Angola Oil and Gas Conference; 12th Technical Meeting under the CoC; 4th Annual Legal Work-

shop; 8th Technical Meeting on Asian Energy and Oil Outlook; OPEC-Malaysia historical connection; OPEC-Japan Technical Meeting; OMV virtual reality training programme; OMV Centre of Excellence; OPEC Member Country architecture and design aficionados; and Ploiesti, Romania's petroleum history.

Meetings of the Conference, ONOMM and JMMC meetings were always heavily covered from many angles.

PRID also contributed to the drafting and editing of the 3rd Review of the OPEC Long-Term Strategy, including participation in meetings of the Operations Group and preparing remarks for High-level Work Group meetings. In addition, editorial assistance was provided for the drafting, editing and layout of a public version of the LTS.

Media relations and news monitoring

Another tool used to help improve and enhance the image of the Organization is media relations, which includes the coordination of media coverage through one-on-one interviews with the Secretary General, press conferences and briefings, speeches and statements, as well as the proactive seeking of further networking opportunities among media outlets and journalists. This has helped to ensure that journalists have better and more timely information about – as well as a better understanding of – the Organization's activities, serving to improve overall coverage of OPEC.

The Organization's media exposure continued to be strong globally through the Secretary General's many interventions, as well as through the Secretariat's ongoing research and public relations activities.

Staff provided background information upon request to journalists from various media outlets, as well as contextual infor-

mation for the Secretary General for various interviews and meetings.

PRID also undertook extra efforts to reach out to new media outlets, especially within OPEC Member countries, and communicate through various languages, including Arabic.

The editorial section continued throughout the year to produce the Daily News Summary. This email publication serves to provide a quick overview every weekday morning of the latest energy-related news.

Public Relations Unit

As part of achieving OPEC's strategy, aims and objectives, and as part of PRID's overall work programme, the PR unit has conducted many activities to reach a wider and more varied audience, raising awareness about OPEC, enhancing its image and perspectives, and addressing any misconceptions about the Organization.

The PR Unit also continued to frequently monitor the media and analyse reports published about the Organization, as well as advise on suitable responses and appropriate strategies. Around 38 reports were produced on OPEC press coverage, the Secretary General's activities and engagements, meetings and conferences, and other events and occasions. The reports featured international media, Arabic media and social media coverage.

PRID additionally assessed its media performance on a regular basis as part of its plan to advance media relations and further elevate its role in the Organization's overall communications strategy.

Conference preparations

Meetings were a mix of virtual and in-person in 2022, as the world continued to recover

from the COVID-19 pandemic. The PR Unit was involved in facilitating many virtual and in-person press conferences. These events were widely followed by international media and industry analysts, in addition to a solid following of OPEC's livestream services on the Organization's website and YouTube accounts.

Outreach programme

The main purpose of the outreach programme is to have two-way communication with the public, as well as the local community, in order to achieve overall organizational objectives, mainly related to raising awareness about the Organization's mission, enhancing perception and creating support within the host country, Austria.

The programme has in the past focused on education; international community events; the City of Vienna; and cultural events.

The PR unit received many enquiries and requests from the general public, as well as from Member Countries, regarding the provision of AV material and publications, and answered many questions related to OPEC activities and background information.

The main activities conducted in 2022 are summarized as follows:

- Supporting the United Nations Women's Guild Charity Bazaar.
- Supporting the International Science and Engineering student fair.
- Supporting and participating in the Society of Petroleum Engineers yearly event.

Briefing programme

Briefings are important in establishing two-way communication with the public, allowing for opportunities to uncover how the public perceives OPEC and how to better address such perceptions, while raising

awareness about the objectives and goals of the Organization and promoting the Organization's publications. They also provide an opportunity to disseminate the Organization's key messages and create a better understanding of the Organization's decisions and actions.

In 2022, the Secretariat received more than 42 requests from around the world. However, due to COVID-19 and lockdown and restriction measures aiming to slow the spread of the virus, only 36 virtual briefings were conducted, and the rest cancelled. More than 744 participants took part in the online briefings from 18 different countries around the world, including some OPEC Member Countries.

Visits

Due to the COVID-19 pandemic, the PR Unit could respond to only one invitation in Vienna, where a general presentation about OPEC, followed by a Q&A session, was offered in person.

Workshops, seminars and exhibitions

Due to COVID-19, the Science and Engineering Exhibition took place online. OPEC continued its support of the student fair, which involves international schools in Vienna and Europe that compete in the fields of science and engineering. The fair took place in a hybrid format; OPEC had the chance to sponsor the event, as well as to participate virtually.

Launching the WOO

The 2022 edition of the WOO was launched in hybrid format at ADIPEC in the Emirati capital of Abu Dhabi and featured key industry figures, including the OPEC Secretary General. The event was livestreamed

via the Organization's website and YouTube channel. The PR Unit was involved in many aspects of the high-profile event, including managing the media, launching on the website, conducting a social media campaign and full AV coverage.

Launching the ASB

The 57th edition of OPEC's *ASB* was launched in June 2022 in a hybrid format. Ayed Al-Qahtani, Director, Research Division, and Jakob Müllner, Associate Professor and Academic Director at the WU Executive Academy, delivered remarks at the event, which included a broad range of industry stakeholders. Member Country representatives; Secretariat Members of Management; journalists and analysts were also present. The launch was livestreamed via the Organization's website and YouTube channel. The PR Unit was involved in many of the event's activities, including managing the media, the website launch, along with complete social media and AV coverage.

60th Anniversary

Celebrations of the 60th Anniversary of the founding of OPEC were postponed since 2020 due to the COVID-19 pandemic and preparation was underway in 2022 to hold the event at a later date. Meanwhile, at the invitation of Member Country Iraq, the Organization launched its history book, entitled '*OPEC 60 years and beyond: A story of courage, cooperation and commitment*' in June at the historic Al Shaab Hall in Baghdad, the location of the Organization's founding in September of 1960.

OPEC Diary

The OPEC Diary is an annual publication that the PR team produces, targeting

between 3,000–4,000 recipients from producing countries (including OPEC Member Countries), consuming countries, embassies, research institutes, academia, national oil companies, international oil companies, international organizations (including OFID and OPEC employees) and others. The Diary includes useful information about OPEC and its Member Countries.

News monitoring

What the Papers Say (WTPS) continues to be produced daily. It is prepared on the basis of two reports received morning and afternoon from trusted news providers. The content of the WTPS includes news about energy in general, as well as petroleum, OPEC and its Member Countries, and constitutes a selection of the most important and informative articles from the international media. The WTPS is part of a larger daily news package and is distributed to OPEC officials (Ministers, Governors and National Representatives), in addition to the Secretary General, Secretariat staff and some outside members of the industry.

PRID also expanded on its efforts to monitor developments and news related to the Organization and the entirety of the industry on a regular basis and in a timely manner.

Distribution of publications

The distribution of printed materials plays a very important role in disseminating information about the Organization's activities. To this end, PRID continued to review and update mailing lists and distribution networks for key publications, with additional input and more rigorous review recommended in order to expand and strengthen these. Mailing lists included the

media, press analysts, news agencies, banks, investment companies, universities, government institutions and more. Along with the timely dispatch of publications, email alerts are sent out.

Distribution of publications is undertaken in coordination with related departments. PRID facilitates distribution of the *ASB* and the *WOO*, in addition to the OPEC Bulletin and the *AR*, according to an updated mailing list supplied by the PR Unit.

Missions

In 2022, PRID continued to take part in exhibitions and conferences, after these were severely restricted in 2020 and 2021 due to the pandemic. PRID had a stand at the Diplomatic Academy, Austria; EGYPS 2022, Egypt; Nigeria International Energy Summit, Nigeria; Iran Oil Show, IR Iran; Africa Energy Week, South Africa; ADIPEC, UAE; and Angola Oil and Gas, Angola.

OPEC's latest publications, including the *WOO*, *ASB*, *MOMR* and *OB*, were distributed. Additionally, in-person missions were made to Equatorial Guinea and Venezuela in September 2022.

The PR Unit served the various missions by preparing background documents, possible messaging and talking points (sometimes in Arabic) for engagements and media interventions, as well as media highlight reports.

Website and electronic mailing lists

In 2022, PRID continued to maintain and update the content of the Organization's website in a timely and accurate manner with press releases, news items, speeches, statements, publications, booklets, reports, data and graphs, videos, information about its Member Countries, employment opportunities, etc.

Over the year, more than 35 press releases and over 20 news items were published. A huge number of photographs accompanied website content. Live streaming of OPEC and DoC Ministerial Meetings, as well as other events, was provided through the website.

PRID continued to monitor the number of views to the OPEC website's various pages and provided data to other DUOs upon request. These statistics are critical to website operations, as the Department continues to ensure that visitors find the information they require in an easy and practical manner, and works on enhancements as needed. In general, the website attracted a tremendous number of visitors throughout 2022.

PRID continued to maintain and update its electronic email lists, which consist mainly of officials and representatives of institutions, agencies and banks, as well as journalists and industry analysts. The lists include around 1,000 recipients and were used to communicate decisions and announcements related to OPEC and the DoC, among others, including the forwarding of press releases and publications, website update alerts, daily and weekly basket price data, details on meetings and important events, and general press information. They proved to be a timely and effective tool in informing the public about OPEC and its activities. Positive feedback was also received by the Department regarding this service.

Regular monitoring was undertaken of messages received through the website's email and contact forms, as well as through various other means. These generally provided positive feedback to PRID on various issues and were attended to by the Secretariat.

Social media

Social media plays a critical role in the daily routine of most organizations. It is also considered to be a cornerstone communication tool.

In a concrete attempt by OPEC to expand its outreach and improve its information dissemination practices, the Organization inaugurated its official Facebook Page in 2017. Facebook followers rose to over 57,000 from the launch until the end of 2022. Impressions (total number of views and visits) exceeded 5 million, while the reach (total number of visitors) was at around 3 million.

In line with plans to expand its social media outreach, OPEC officially launched a Twitter account in March 2018. The number of followers reached 68,755 by the end of 2022, while the number of impressions (total number of views, including repeated visits) was at around 39.62 million. Twitter has become the preferred social media platform for stakeholders in energy and other related fields to exchange information and share ideas and views about the industry.

Additionally, an official OPEC LinkedIn account was launched in 2022 to add to social media communication channels, hence reaching a new audience. There were 2,269 followers from the launch until year end.

Highlights of press and news releases, speeches, interviews with the President of the Conference, the Secretary General, Heads of Delegations and Ministers of participating non-OPEC countries in the historic DoC, press conferences, meetings and conferences, and OPEC publications were posted in a consistent and continuous fashion on Facebook and Twitter for the effective dissemination of information. Various campaigns for the *MOMR*, *ASB* and *WOO* (books

and apps) were developed to promote and widen the distribution of vital information and data in these essential publications. Content was specifically tailored and designed for social media messaging, in collaboration with respective DOUs within the Secretariat.

In furthering the promotion of OPEC and widening the Organization's presence on social media platforms, PRID, through the social media team, collaborated with organizers of many high-level industry gatherings to better coordinate and promote content during events. This has further improved confidence among stakeholders in the various tools the Organization is incorporating in its public relations strategy.

Additional Facebook and Twitter features were used to boost OPEC's presence on social media platforms. Paid promotion services provided by social media platforms were used to further strengthen the presence of the Organization's accounts and reach a broader audience.

Noting the importance of YouTube as a leading video-based social media platform, PRID livestreamed many events, including Meetings of the OPEC Conference, ONOMMs, JMMC meetings and the launches of the 2022 *ASB* and *WOO*, in order to reach a wider public and boost PRID's information dissemination efforts on a global scale. PRID also published many videos on YouTube, such as one marking the Fifth Anniversary of the DoC, opening sessions of ministerial meetings, as well as the Secretary General's public engagements.

PRID additionally continued its efforts to raise awareness and educate its audience on the importance and uses of petroleum and its products through its social media platforms.

Audio-visual/multimedia services

The AV team is in charge of documenting all of the Organization's activities and meetings through photos, audios and videos and processing them.

Its core activities include:

- Consulting and advising on AV-related matters and requests.
- Providing AV coverage for all meetings and activities.
- Providing post-production service for all AV materials.
- Managing the Secretariat's AV facilities and ensuring proper maintenance.
- Managing and updating the AV archive.
- Producing videos and slideshows for special events and meetings.
- Printing photos upon request and assisting in the production of photo albums.
- Supporting livestream requests.
- Providing timely and appropriate consultation on matters and requests related to AV.
- Guaranteeing timely and satisfactory coverage of meetings and activities, including post-production processes.
- Ensuring periodic maintenance of AV facilities.
- Providing precise and timely management of the AV digital archive, including satisfying various requests.
- Ensuring timely and quality production of videos and other AV materials for special events and meetings.
- Providing stable and reliable livestream feeds of meetings and events.

The unprecedented number of videoconferences held in 2022 significantly elevated the demand for AV services. This went above and beyond regular services, which

included production of the 'Year-in-Review', highlights and wrap-ups of Ministerial Meetings, and updating of official OPEC films on a regular basis. OPEC videos to accompany events have become common over the past few years and were regularly requested and created for OPEC's social media activities.

Meetings of the OPEC Conference, as well as ONOMMs were broadcast live, and parts of these were made available as on-demand videos on OPEC's official website.

The virtual *WOO* launch saw many attendees. A special four-minute 3D animation promo key message video was produced to accompany the release.

Intensive efforts were spent on media production, including videos, interviews, photos and post-production for many events over the year, including JMMC and JTC meetings.

Photo and video coverage was undertaken of visitors for archival purposes.

The AV team distributed photographs and videos to international media and editors for publication purposes.

Design and Production

In 2022, Design and Production (D&P) provided numerous designs and layouts for flagship publications and high-level meetings.

The *WOO* design focused on a layout that best supports its messages in the most convenient way and grants readers consistency. The *WOO* launch took place at ADIPEC in 2022, and was flanked by materials which visually communicated at a glance the most important facts in the book, transferring the look and feel of the document to the audience. It was printed in the UAE and Austria. Key visuals to promote the launch were prepared by the D&P unit. Supporting materials,

such as roll-ups, were designed in collaboration with ESD to highlight key takeaways. D&P was responsible for designing, typesetting, producing and overseeing the entire printing process of various publications and additional materials.

The design, layout and finishing of the *ASB* was undertaken by D&P. In addition to the ‘full’ version, a smaller pocket version was created that displayed the most important tables and graphs in a consolidated form. D&P was responsible for designing, typesetting, producing and overseeing the printing of this publication.

The *AR* was put together in cooperation with all departments of the Secretariat. D&P was responsible for designing, typesetting, producing and overseeing the whole production line.

The *OB* continued to be laid out, typeset and produced by the team, which coordinates and oversees its printing at an outside service. Throughout the year, the layout of the *Bulletin* was adapted to fit state-of-the-art corporate publication trends in an international and multicultural environment, in coordination with the Editorial Unit.

Logo designs were also created and produced throughout the year for in-house meetings and events. Nameplates, programmes, badges, notepads, giveaways and corporate gifts were developed as per specific request within the Secretariat.

Additionally, the D&P provided visuals for various meetings to disseminate the Secretariat’s key messages, including posters and roll-ups for internal and external use. These displayed information on OPEC, Member Countries, the DoC and CoC, highlighting the Organization’s key messages.

Focusing on the upcoming 8th OPEC International Seminar in July 2023, a visual

language has been developed to communicate information on the Seminar and invite stakeholders to participate.

Internal documents were revamped and made accessible via the OPEC intranet to strengthen the overall corporate look and feel.

The preparation of booths and flanking materials for exhibitions and meetings intensified after a COVID-related break over 2020, 2021 and part of 2022.

Many visuals published on social media were created by D&P, which ensured consistent visual messaging throughout the media mix. The designers also provided designs for and produced various gift items and photo albums.

Training

Three PRID staff received external training in 2022. Some PRID members also participated in internal skill development workshops. They additionally participated in different organizational task forces and committees and worked closely on projects with other departments, including the Seminar Organizing Committee; Seminar Technical Committee; *WOO* Core Group; Induction Programme; MDTC; Social Committee; OPEC 60th Anniversary Committee; OPEC History Book Taskforce; OPEC Academy; and Task Force on Confidentiality.

Administration & IT Services Department

The Department welcomed Hasan AlHamadi in his capacity as Head of Department in January 2022. The Department implemented an important masterplan in order to ensure the smooth and effective functioning of OPEC Secretariat core activities, with the main objective of strengthening and continuously

improving its workflows, business processes and manpower. A number of significant IT projects were introduced and carried out to enable OPEC's core mission and achieve the highest standards of performance.

The AITSD's main deliverables/achievements in 2022 are summarized as follows:

IT Services Section

The IT Services Section is responsible for enabling achievement of OPEC's core mission by providing state-of-the-art IT solutions for operation efficiency, cost optimization and business process automation. Its functions, categorized into three areas, are as follows:

Core IT services

This includes the optimization of IT resources to ensure maximum benefit and support for all OPEC Departments/Offices/Units (DOU) in achieving digital transformation initiatives, where applicable. Core services also include:

- Providing regular end-user support using streamlined processes and ticketing tools.
- Providing secure web conferencing services and technical support for all OPEC meetings (Conferences, Ministerial Meetings, BoG meetings, workshops, etc.).
- Providing, managing, maintaining and continuously improving the Secretariat's IT infrastructure and operations, as well as the Data Centre.
- Hardware and software planning, maintenance, troubleshooting, decommissioning and management of end-user assets (PCs, laptops, printers, IT peripherals, etc.) as per defined policy.

- Managing anti-virus systems and regular security upgrades for all OPEC IT devices.
- Maintaining network security, directory services and backup, as well as email and internet services.
- Providing means for staff to work remotely from home office.
- Ensuring the availability and optimal operation of the telecommunications and printing systems.
- Defining/executing backup and disaster recovery plans.
- Providing regular professional mass printing and copying services.
- Maintaining Xerox multifunctional printers for each department.
- Providing professional telephony services for inbound and outbound calls.
- Managing official and personal parcels/packages and mail/courier and fax services as requested.
- Sending out reports and invitations to Member Countries as requested by the Secretary General's Office.
- Managing all fixed IT assets and assisting the Finance Section as requested. Coordinating on-boarding and clearance of staff members in the various departments, together with the Finance and Human Resources Department (FHRD).

IT Security and consultancy

This includes the implementation of IT security procedures and policies to mitigate the risk of threats. Further, it acts as an IT consultancy for OPEC DOUs, if they require such support. Ongoing tasks include:

- Regular monitoring of the OPEC network to detect and mitigate threats.
- Regular virus scanning of all OPEC machines.

- Installation of driver and critical security updates with minimum delay on all OPEC endpoint devices.
- Maintenance of the data centre based on industry standards.
- Maintenance of a disaster recovery site based on a business continuity plan.
- Planning and implementation of new software/projects with concerned DOUs.

Quality assurance

This includes ensuring that appropriate key performance indicators (KPIs) are in place to measure, monitor and enhance the services provided to the Secretariat. This includes:

- Maintaining high network availability of 99.9 per cent.
- Maintaining infrastructure to ensure minimum downtime.
- Preparing responses to major incidents.
- Monthly reporting of resolved requests/issues.
- Training users in adoption of major applications.
- Reporting customer satisfaction levels on the resolution of requests/issues.
- Undertaking a yearly customer satisfaction survey of IT services.

Achievements in 2022

- OPEC Modern Workplace with Microsoft 365 – Switching to Microsoft Cloud. The IT Section worked closely with DOUs to conduct a holistic assessment of the implementation of Microsoft 365 Cloud based Solution, which moved email services to Microsoft Cloud. The Cloud-based solution is more secure as it falls under strict

European legislation due to GDPR. Advantages include Cloud elasticity, reduced administrative risk, cost efficiency, data storage redundancy, more reliable videoconferencing, etc.

- Refurbishment of Data Centre rack infrastructure (new power distribution for racks, enhancement of overall monitoring infrastructure at both the OPEC and OPEC Fund for International Development Data Centres).
- Lease of new data domain appliances to conduct OPEC backups.
- Renewal of OPEC CISCO Switching Infrastructure at the OFID Data Centre.
- Magenta contract renewal with improved and cost-effective tariffs.
- Adobe subscription renewal with secured single sign-on and Adobe Sign for a digital signature solution.
- Start of rollout of secure printing solution (MyQ), along with central management of printers, reduction in printer costs and enhanced reporting.
- Improved workflow for meeting requests and technical support for multiple high-level meetings on short notice.
- ISO27001 certification for IT – a Business Impact Analysis was conducted for all departments and input provided to DSD for all ITS processes, policies and procedures.
- Provided technical input for HR's Enterprise Resource Planning (ERP) project.
- Resolution of 1,235 requests; 233 positive ratings were received from staff members, with an average response of 97 per cent.
- Implementation of LockLizard, a secure encryption watermark-based solution for high-level confidential

reports that are shared with Member Countries.

- Kick-starting of an OPEC and OPEC Fund collaboration initiative to find common areas in which both Organizations can leverage their expertise.

Administration

The Administration Section is responsible for ensuring the smooth functioning of the OPEC Secretariat's core activities, with the main objective of strengthening and continuously improving its workflow and business processes.

Core admin services

- Budget planning and control.
- Facility management of the OPEC Secretariat, as well as the Secretary General's residence.
- Procurement.
- Travel, hotel and visa arrangements.
- Removal of personal effects.
- Implementation of the Headquarters Agreement, including staff registration, managing license plates, official declarations and other matters related to privileges and immunities.
- Logistics for all meetings/conferences and entertainment activities.
- Transportation, as well as kitchen services.
- Support staff in organizational and administrative matters.

Communication with local authorities

- Submission of visa support letters to the Austrian Foreign Ministry.
- Daily exchange of documents between OPEC and the Foreign Ministry related to legitimation cards.

- Close contact with embassies to ensure swift visa service.
- Maintenance of relationship with City of Vienna to ensure successful events in Vienna for all participants.

Safety, health and physical security

- Monitoring of health advice with OPEC medical advisors to ensure health and safety for all staff.
- Regular inspection and patrols through the premises to ensure safety.
- Monitoring of the Secretariat's CCTV system.
- Regular meetings with landlord and facility service companies to maintain a high level of safety within the Secretariat.

Quality assurance

This function ensures that appropriate KPIs are in place to measure, monitor and enhance the services provided to the Secretariat. Activities include:

- Maintaining the provision of facility management services for the OPEC headquarters building and the Secretary General's residence.
- Around-the-clock provision of safety and security services at the OPEC premises.
- Continuous provision of kitchen services during office hours and official meetings.
- Provision of logistical support services for all official requests, including flights, hotels, visas, missions and transport services.
- Provision of administrative support for all official OPEC meetings.
- Limiting the response time for official requests to a maximum of 24 hours.

Achievements in 2022

The Administration Section was tasked with coordinating the renovation of the Secretary General's Residence. The residence needs fundamental repair work and refurbishment both inside the building, as well as in the outside garden areas. Administration liaised with selected renowned architects in Vienna to initiate the tendering process, which is comprised of the development of detailed tender criteria, arranging visits to the residence, conducting and monitoring of the tender process and consolidation of tender data received by the architects as requested by the Office of the Secretary General. Furthermore, relevant procurement-related processes related to remuneration of all tendering parties were initiated and conducted.

Sourcing and preparation of a temporary residence for Al Ghais until the renovation of the official residence is complete. Administration was largely responsible for identifying a suitable temporary residence and arranging the necessary procurement-related and administrative processes. Special price arrangements were negotiated and several amendments made regarding the interior design to ensure all requirements and wishes expressed were fully met.

Arrangement of meetings for all staff on the occasion of honouring former OPEC Secretary Generals, in particular Dr Subroto, acting Secretary General between 1984–1985 and 1988–1994, and the late Mohammad Sanusi Barkindo, Secretary General from 2016 to 2022.

Preparations for the next OPEC International Seminar continued, including the securing of Hofburg Palace and City Hall as main venues. Several committee meetings took place throughout the year to ensure a successful 8th OPEC International Seminar.

The implementation of mandatory reliability checks for all drivers, introduced by the Austrian authorities, was undertaken. The Austrian Foreign Ministry requested yearly reliability background checks from 2022 onwards for all official drivers as a prerequisite to applying for airport access cards, which are crucial for the core functioning of OPEC driver positions, as they enable the picking up and dropping off of delegates and (high-level) visitors from the airport. Administration completed the required applications for all drivers, which involved the registration and account administration of three complex security systems.

In the course of the late Barkindo's removal process, Administration extraordinarily arranged all formal documentation for and coordination of a second large removal container to efficiently effectuate the transportation of all personal belongings to Abuja, Nigeria. In close collaboration with other departments, Administration assisted and supported the family of the late Barkindo with related arrangements, especially after his tragic passing on 6 July 2022, when the removal process was still ongoing.

Finance & Human Resources Department

The Finance and Human Resources Department (FHRD) continued to focus on delivering innovative human resources and financial strategies by ensuring the efficiency of each business process and the quality of its services, as well as providing world-class management of the Organization's human and financial assets in 2022.

Furthermore, the Section established a Project Management Team to ensure that FHRD receives the required technical support

for implementation of the ERP project, from DSD and AITSD. The Project Management Team established a way forward to monitor progress and new developments regarding the ERP Project.

In addition, it supported internal auditor Ernst and Young (EY) in its 2022 Internal Audit Plan, and actively participated in two meetings of the Audit Committee, monitoring the implementation status of internal audits for the Secretariat. Along with the Legal Office, FHRD scheduled support for EY in the implementation of the Fraud Prevention and Detection Plan. The Section also provided regular reports to Member Countries, along with the Support Services and Research Divisions, and passed the 2021 External Audit with an unmodified (clean) opinion.

In addition to providing personnel-related services to the Secretariat, the Human Resources Section continued to monitor all human resources processes with a view to improving the efficiency of each process, as well as the quality of services and accuracy of data provided by the section, by applying modern technology wherever possible. The section also continued its efforts to utilize the Secretariat's available manpower to the maximum extent possible to ensure efficiency and proficiency.

Following action taken to manage the COVID-19 pandemic in 2020 and 2021, the Section continued its efforts to ensure the well-being of the whole Secretariat through good coordination and cooperation with the Secretariat's medical advisors, as well as the AITSD, until July 2022, when teleworking ceased at the Secretariat and all staff were requested to fully report back to work in person.

Upon arrival of the new Secretary General in August 2022 and the commence-

ment of a new era at the Secretariat, the Section rendered the support needed for the transition.

Following a decision by the 162nd BoG Meeting in October 2022 to transform the Environmental Matters Unit into the new Environmental Matters Department (EMD), the Section drew up an action plan and implemented the organizational change in December 2022. Recruitment activities to fill the position of Head of EMD commenced in November 2022, with the hope of having the incumbent on board by spring/summer 2023. Having obtained the Board's support and approval to strengthen the Secretariat's workforce, seven vacant positions, which had been frozen over the years due to budgetary constraints, were identified, and will be gradually filled over the course of 2023, pending budget availability.

The first half of 2021 continued to be challenging regarding ensuring the smooth running of day-to-day operations due to a surge of various coronavirus mutations and repeated lockdowns in Austria. The Section was further committed to ensuring the well-being of the whole Secretariat through good coordination and cooperation with the Secretariat's medical advisors, as well as the Administration and IT Services Department. The Department made every effort to ensure business continuity in all of its activities by fully supporting the efficient implementation of teleworking, along with realizing online training and job interviews wherever possible.

In line with the 2021 Category I Recruitment Plan presented to and approved by the 158th BoG meeting in May 2021, the HRS successfully conducted interview processes for 11 Category I positions in person, which had been put on hold due to the pandemic.

As a result, six new Category I staff members joined the Secretariat by the end of December 2021 and the remaining three in January and February of 2022. The Section efficiently implemented the on-board process for new

staff members, the departure of staff members who left the Secretariat on 31 December 2021, as well as the overlap between the two, which continued in part at the beginning of 2022.

Heads of Delegation

Algeria



Mohamed Arkab

Angola



Dr Diamantino Pedro Azevedo

Republic of the Congo



Bruno Jean-Richard Itoua
President of the Conference in 2022

Equatorial Guinea



Gabriel Mbaga Obiang Lima

Gabon



Vincent de Paul Massassa

IR Iran



Eng Javad Owji

Iraq



Hayan Abdulghani A Alsawad

Kuwait



Dr Bader H AlMulla

Libya



Mohamed M Oun

Nigeria



Timipre Sylva

Kingdom of Saudi Arabia



HRH Prince Abdul Aziz Bin
Salman Bin Abdulaziz Al Saud

United Arab Emirates



Suhail Mohamed Al Mazrouei

Venezuela



Tareck El Aissami

Outgoing Heads of Delegation by country

Iraq



Ihsan Abdul Jabbar Ismaeel
(to November 2022)

Kuwait



Dr Mohammad Abdullateef Al-Fares
(to October 2022)



Board of Governors

Algeria

Dr Achraf Benhassine

Angola

Estêvão Pedro

Republic of the Congo

Fabrice Okassa

Equatorial Guinea

Agustin Mba Okomo

Gabon

Magloire Menie Akoue

IR Iran

Dr Amir Hossein Zamaninia

Iraq

Alaa K Alyasri (*Chairman of the Board in 2022*)

Kuwait

Mohammad Khuder Al-Shatti

Libya

Mustafa Abdulla Al Mukhtar Benisa

Nigeria

Dr Adedapo Odulaja

Kingdom of Saudi Arabia

Eng Adeeb Al-Aama

United Arab Emirates

Eng Ahmed Mohamed Alkaabi

Venezuela

Eng Ángel González Saltrón

The Secretary General, Haitham Al Ghais and the Board of Governors during their 162nd Meeting, held in October 2022.





Economic Commission Board

Algeria

Dr Achraf Benhassine

Angola

Ntika Mbiya Ricardo

Republic of the Congo

Fabrice Okassa

Equatorial Guinea

Antimo Asumu Obama Asangono

Gabon

Fernand Epigat

IR Iran

Dr Afshin Javan

Iraq

Mohammed Saadoon Mohsin

Kuwait

Sh. Abdullah Al Sabah

Libya

Abdulnasser Lamin Mohamed Gnedi *(from March)*

Dr Taher Massoud O Najah

Nigeria

Mele Kyari

Kingdom of Saudi Arabia

Eng. Yousef Al Salem

United Arab Emirates

Salem Hareb Al Mehairi

Venezuela

Eng Ronny Rafael Romero Rodriguez

Haitham Al Ghais, OPEC Secretary General with National Representatives and Member Country delegates at the 138th Meeting of the ECB, held in November 2022.





Officials of the Secretariat

Secretary General

Mohammad S Barkindo (*deceased on 6 July*)

Haitham Al Ghais (*joined on 1 August*)

Office of the Secretary General

Shakir M A Alrifaiy

Research Division

Dr Ayed S Al-Qahtani

Data Services Department

Boshra AlSeiari (*left on 30 June*)

Mhammed Mouraia

Dr Mohamed Khalefa Sarrab

Energy Studies Department

Dr Abderrezak Benyoucef

Moufid Benmerabet (*left on 24 January*)

Dr Mohammad A Alkazimi

Irene Etiobhio

Dr Mustapha Sugungun

Reem Alnaeimi

Mohammed Attaba

Petroleum Studies Department

Behrooz Baikalizadeh

Tona Ndamba

Yacine Sariahmed

Dr Asmaa Yaseen

Dr Sulaiman Saad

Angel Edjang Memba

Dr Ali Akbar Dehghan (*joined on 12 January*)

Environmental Matters Unit

Mohammad Ali Zarie Zare

Legal Office

Leonardo Sempértegui

Dr Taiwo Ogunleye

Finance & Human Resources Department

Abdulmonem Allafi (*joined on 5 February*)

Patrick Bongotha

Administration & IT Services Department

Abdullah Alakhawand (*left on 27 February*)

Hasan AlHamadi (*joined on 24 January*)

Public Relations & Information Department

Tofol J Al-Nasr (*left on 17 February*)

*Members of the Management with
Haitham Al Ghais, OPEC Secretary General.*





The Secretary General's diary

6–10 January	Mission to Baghdad, Iraq
12 January	12 th Edition of UAE Energy Forum, Dubai, UAE
14–16 February	Egypt Petroleum Show, Cairo, Egypt
27 February– 3 March	5 th Nigeria International Energy Summit, Abuja, Nigeria
7–11 March	CERAWeek, Houston, TX, USA
27–29 March	Atlantic Council Global Energy Forum 2022, Dubai, UAE
4 May	International Oil Gas Refining and Petrochemical Exhibition 2022, Tehran, IR Iran
12–14 June	Mediterranean Gas for Terminal LNG “ARGO” license awarding, Athens, Greece
5 June	RBC Conference, New York, USA
30 August	Future Energy Forum, Ministry of Energy and Infrastructure, UAE, via videoconference
2 September	G20 Energy Transition Ministerial Meeting, Bali, Indonesia
11–13 September	Mission to Member Country Equatorial Guinea
13–16 September	Mission to Member Country Venezuela
19 September	42 nd Oxford Energy Seminar, Oxford, UK
15–17 October	Mission to Member Country Algeria
17–21 October	African Energy Week, Cape Town, South Africa
30 October– 3 November	The Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC), Abu Dhabi, UAE
31 October	Launch of the <i>World Oil Outlook</i> 2022, Abu Dhabi, UAE
13 November	UNFCCC COP27, Sharm el-Sheikh, Egypt

26–30 November Mission to Member Country Angola

29 November Angola Oil and Gas Conference, Luanda, Angola

G20 Energy Transition Ministerial Meeting, Bali, Indonesia



Mission to Equatorial Guinea



Mission to Venezuela



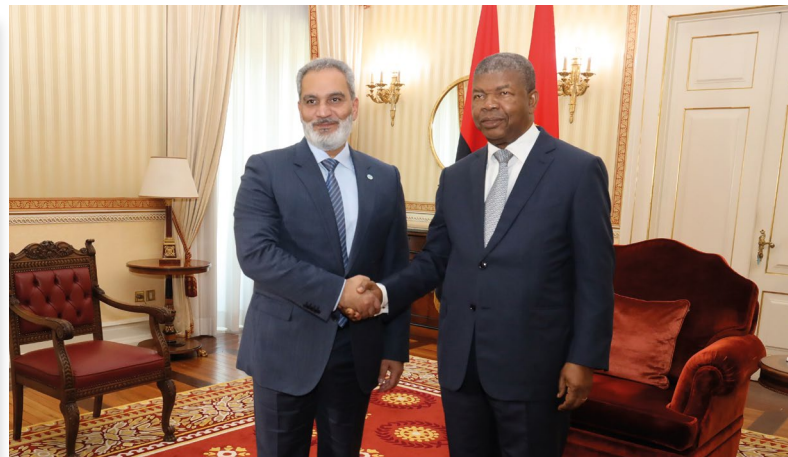
African Energy Week



The Abu Dhabi International Petroleum Exhibition and Conference



Mission to Angola





Calendar 2022

3 January	58 th Meeting of the Joint Technical Committee (JTC)
3 January	Special Meeting of the OPEC Conference
4 January	36 th Meeting of the Joint Ministerial Monitoring Committee (JMMC)
4 January	24 th OPEC-non-OPEC Ministerial Meeting (ONOMM)
20 January	Meeting with Mr Jayhun Bayramov, Minister of Foreign Affairs of the Republic of Azerbaijan
1 February	59 th Meeting of the JTC
2 February	37 th Meeting of the JMMC
2 February	25 th ONOMM
3 February	Diplomatic Academy public lecture on ‘OPEC and its Role in the Energy Transition’, Vienna, Austria
8 February	Meeting with Jaideep Mazumdar, Ambassador of India to Austria
8 February	Discussion with Mr Talal Suleiman Al-Fassam, Ambassador of Kuwait
22 February	OPEC-China Energy Dialogue: Roundtable Meeting with National Energy Administration of the People’s Republic of China
1 March	60 th Meeting of the JTC
2 March	38 th Meeting of the JMMC
2 March	26 th ONOMM
28–30 March	Multi-Disciplinary Training Course 2022
30 March	61 st Meeting of the JTC
31 March	39 th Meeting of the JMMC
31 March	27 th ONOMM

Note: All events were held at OPEC Headquarters, Vienna, Austria, in person or via videoconference.

31 March	183 rd (Extraordinary) Meeting of the OPEC Conference
1 April	7 th Steering Committee Meeting on the 3 rd Review of the OPEC Long-Term Strategy (LTS)
11 April	15 th High-level Meeting of the OPEC-EU Energy Dialogue
4 May	62 nd Meeting of the JTC
5 May	40 th Meeting of the JMMC
5 May	28 th ONOMM
17–18 May	160 th Meeting of the Board of Governors (BoG)
30 May	5 th Technical Workshop on Climate Change
1 June	63 rd Meeting of the JTC
2 June	41 st Meeting of the JMMC
2 June	29 th ONOMM
13 June	7 th High-level Working Group Meeting of the 3 rd OPEC LTS Review
21–22 June	137 th Meeting of the Economic Commission Board (ECB)
23 June	11 th OPEC-non-OPEC Technical Meeting (ONOTM)
27 June	161 st (Extraordinary) Meeting of the BoG
28 June	Launch of the Annual Statistical Bulletin
28 June	64 th Meeting of the JTC
30 June	42 nd Meeting of the JMMC
30 June	30 th ONOMM
30 June	184 th Meeting of the OPEC Conference
2 August	65 th Meeting of the JTC

3 August	43 rd Meeting of the JMMC
3 August	31 st ONOMM
17 August	Meeting with Mr Estêvão Pedro, OPEC Governor of Angola
31 August	66 th Meeting of the JTC
5 September	44 th Meeting of the JMMC
5 September	32 nd ONOMM
6 September	Meeting with Mr Mohammed Saadoon Mohsin, National Representative of Iraq
6–7 September	22 nd Special Meeting of the ECB
9 September	Meeting with Dr Afshin Javan, National Representative of IR Iran
4 October	67 th Meeting of the JTC
5 October	45 th Meeting of the JMMC
5 October	33 rd ONOMM
10 October	3 rd OPEC-GECF High-level Dialogue Meeting
24 October	68 th Meeting of the JTC
24 October	4 th OPEC-OPEC Fund Annual Legal Workshop
25 October	22 nd Coordination Meeting on Climate Change
27–28 October	162 nd Meeting of the BoG
14 November	Joint OPEC-GECF Coordination Meeting on Climate Change
29–30 November	138 th Meeting of the ECB
1 December	12 th ONOTM
3 December	185 th Meeting of the OPEC Conference

4 December 45th Meeting of the JMMC

4 December 33rd ONOMM

65th Joint Technical Committee Meeting



3rd OPEC-GECF High-level Dialogue Meeting



4th Annual Legal Workshop



138th Economic Commission Board Meeting



34th OPEC and non-OPEC Ministerial Meeting



185th (Ordinary) Meeting of the OPEC Conference



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