OPEC bulletin

7–8/24

Leptis Magna:
A Libyan legend

OPEC launches 59th edition of
Annual Statistical Bulletin

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The enduring influence of petroleum and petroleum products

Crude oil has long been a cornerstone of global development, acting as a driver of industrial progress and a linchpin in global energy security. Its pivotal role can be traced back to the mid-19th century, when it first began to catalyze unprecedented economic growth and reshape societies. In the 178 years since Baku became the site of the first oil well drilled in 1846, the vast utility and ubiquity of oil has made it essential in powering industry, improving living standards, driving advancements in transportation, and propelling trade and economic development.

Historical catalyst for development

Historically, the impact of crude oil and its derivatives on humanity has been huge. Kerosene revolutionized lighting in the 19th century. Gasoline and asphalt transformed the transportation sector in the 20th. Diesel engines, first tested successfully in 1897, greatly increased the efficiency, power, and durability of heavy machinery. Synthetic plastics, as early as 1907, emerged to provide an economical, versatile, and durable material that has altered virtually every industry and sector.

This list of oil's remarkable contributions to development is far from exhaustive. Suffice to say, petroleum and petroleum derived products have been improving living standards across the globe in some shape or form for almost 18 decades. As a result, many areas have become synonymous with a specific oil-related scientific discovery, invention, or innovation that went on to change whole countries, regions and the world.

Continuing the Bulletin's series on the transformative impact of oil, and its portrayal in museums, this edition includes a special feature on Estonia, Sweden, Denmark and Norway.

Turn to page 50 to find out which of these countries has historically relied on oil shale (not shale oil) for most of its energy; where you can visit an oil refinery preserved from 1875; which European city played a key role in the diesel engine revolutionizing global shipping; and which nation was transformed by an oil discovery in 1969.

Contemporary and future energy keystone

Far beyond Scandinavia and the Baltic, the enduring influence of oil today is evident in the vast number of essential products derived from a barrel of crude oil. Many sources estimate this number to be well over 6,000, ranging in variety from vital fertilizers to synthetic fibers.

Given crude oil's huge versatility, it is perhaps unsurprising that global oil demand expanded in 2023 by close to 2.6 million barrels of oil a day (mb/d) — reaching an average of 102.25 mb/d — with demand growing in almost every region.

These statistics underline the ongoing importance of oil and underscore that calls to avoid investing in new oil projects do not chime with realities worldwide.

They also underscore the likelihood that oil demand will continue to grow long into the future, necessitating adequate investment — around $610 billion per annum from now until 2045 — if oil is to continue providing essential products for billions of people across the globe.

Preparing for tomorrow, today

Ceteris paribus, the versatility of crude oil and its derivatives ensure they will remain essential in some form or other in virtually all sectors and industries long into the 21st century — this includes renewables and the transmission of electricity, which are both more reliant on petroleum-derived products than many people know.

Towards this end, the oil industry's pragmatism, adaptability and willingness to improve operational efficiency and drive technological innovation — aided by its vast expertise and related workforce of over 70 million people — will be vital.

Many oil companies in OPEC Member Countries and beyond are already preparing for tomorrow's energy future by developing carbon capture utilization and storage, clean hydrogen technologies, direct air capture, and carbon dioxide removal.

They are also optimizing their extraction and refining processes, including by integrating artificial intelligence into their operations, and are constantly seeking to innovate.

Crude oil's versatility and the industry's adaptability guarantee that oil will continue to play a crucial role long into the 21st century, just as it has since the 19th. Here's to the next 178 years of innovation and development made possible by oil!

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Cover
This month's cover highlights the Arch of Septimius Severus at Leptis Magna (see story on page 70).

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OPEC Membership and aims
OPEC is a permanent, intergovernmental Organization established in Baghdad, on 10–14 September 1960 by IR Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. Its objective is to coordinate and unify petroleum policies among its Member Countries, in order to secure a steady income to the producing countries; an efficient, economic and regular supply of petroleum to consuming nations; and a fair return on capital to those investing in the petroleum industry.

Today, the Organization comprises 12 Members: its five Founding Members and Libya (1962); United Arab Emirates (Abu Dhabi, 1967); Algeria (1969); Nigeria (1971); Gabon (1975, suspended its membership in 1995 and reactivated it in 2016); Equatorial Guinea (2017); and Republic of the Congo (2018).

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OPEC launches 59th edition of Annual Statistical Bulletin

The official launch of the 2024 Annual Statistical Bulletin (ASB), a flagship publication of OPEC and one of the oil industry's most respected resources for oil data, took place in a hybrid format on 2 July 2024.

Presenting the ASB 2024 (l–r): Dr Ayed S Al-Qahtani, Director of the Research Division; Haitham Al Ghais, OPEC Secretary General; and Maureen MacNeill, Editor/Speechwriter and moderator of the event.

Now in its 59th edition, the 2024 ASB contains detailed data on all chains of the oil industry, including key statistics pertaining to OPEC Member Countries and non-OPEC oil producing countries. Additionally, it includes data categorized by geographic region and encompasses all major economic zones worldwide, making it a key reference tool for analysts, researchers, journalists, policymakers and industry experts worldwide.

The WU Executive Academy, affiliated with the Vienna University of Economics and Business, kindly co-sponsored the event and was represented by Dr Jakob Müllner, Associate Professor and Academic Director.

The launch was well attended by representatives of OPEC Member Countries and staff from across the OPEC Secretariat, and saw opening remarks delivered by the OPEC Secretary General, Haitham Al Ghais, as well as an informative presentation by the Director of the OPEC Research Division and Officer in Charge, PR & Information Department, Dr Ayed S Al-Qahtani.

This was followed by a video summarizing the key findings of this year's ASB, and a panel discussion involving staff from the Secretariat's Data Services Department (DSD), including the Head of DSD, Huda Almwasawy.

Dr Jakob Müllner, Associate Professor and Academic Director at the WU Executive Academy of the Vienna University of Economics and Business.

A publication worth being proud of

In his opening remarks, Secretary General Al Ghais stated that "OPEC is very proud of the ASB, which has greatly expanded since its inaugural release in 1965 and continues to go from strength to strength."

He also noted that "the quality of this publication and its contribution to the maintenance of market stability and global energy security are tremendous achievements that are worth being proud of."

Acknowledging the considerable work involved in producing this year's ASB, Al Ghais praised

Dr Ayed S Al-Qahtani, Director of the Research Division and Officer in Charge, PR & Information Department.

colleagues at the OPEC Research Division for their "professionalism and skill in working with our Member Countries to develop a high-quality product that I am certain will greatly benefit industry stakeholders".

Importance of real-world data in driving policy formation

In today's complex energy landscape, Secretary General Al Ghais stated that "the public availability of reliable and transparent data is more crucial than ever in supporting informed decision-making and commentary."

Towards this end, he noted that "OPEC remains committed to disseminating accurate and timely data on oil across all of our publications, with the ASB playing a vital role in this regard."

Moreover, the OPEC Secretary General stated that "real-world data, grounded in reality rather than ideology, should drive policy formation, including when it comes to planning future energy pathways."

Al Ghais outlined that this was crucial "in a world in which we have recently seen many scenarios almost exclusively focusing on replacing hydrocarbons, while disregarding the fact that they make up more than 80 per cent of the global energy mix today".

Underlining that data depositories like the ASB have a key role to play in showing how indispensable

Huda Almwasawy, Head of the Data Services Department.

Mhammed Mouraia, Statistical Systems Coordinator.

oil is to the world, Al Ghais stated that "global oil demand expanded in 2023, year-on-year, by close to 2.6 million barrels of oil a day (mb/d) to reach an average of 102.25 mb/d… [while] demand for oil grew last year in almost every region, with the non-OECD leading the way."

Against this backdrop, the Secretary General opined that "These two statistics alone serve to underline that calls to avoid investing in new oil projects do not chime with energy realities worldwide."

The launch subsequently saw an insightful presentation delivered by Dr Al-Qahtani, who noted that "Data is a central part of research. Without good data, one cannot do good research."

In this regard, Dr Al-Qahtani underlined that "The rich datasets offered by the OPEC Secretariat's ASB represent a very clear indication of the Secretariat's commitment towards energy data transparency and sustainable oil market stability."

Access the ASB today

To ensure that interested stakeholders across the industry and beyond can immediately benefit from its insightful data, the ASB is available — free of charge — across a variety of formats, including in print, as a PDF, as an interactive online version, and as a smart app for mobile devices. For more information, and to download your copy today, visit the OPEC website at asb.opec.org.

Showcasing opportunities at the 23rd Nigeria Oil and Gas Conference

With the theme, "Showcasing Opportunities, Driving Investment, Meeting Energy Demand," the 23rd edition of the Nigeria Oil and Gas Conference and Exhibition took place from 2 to 4 July 2024 at the Abuja International Conference Centre. In a pre-recorded keynote address, OPEC Secretary General, ***Haitham Al Ghais****, shared OPEC's views on the event's theme, including industry opportunities, the dire need for industry investment and the importance of addressing energy poverty. The* OPEC Bulletin*'s* ***Scott Laury*** *files this report.*

Nosa Asemota

Bola Ahmed Tinubu, President of the Federal Republic of Nigeria.

In his remarks, which were shown during the event's opening ceremony, the Secretary General began by recognizing the President of the Federal Republic of Nigeria, His Excellency Bola Ahmed Tinubu, to whom he expressed his appreciation for Nigeria's ongoing contributions to OPEC as it continues to promote oil market stability.

"Excellency, it was my great honour and privilege to have an audience with you and other leaders in your esteemed Government during my mission to Nigeria in February of this year. I want to express my sincere appreciation for Nigeria's ongoing, staunch commitment to OPEC and to the Declaration of Cooperation."

In this regard, he also lauded the contributions of Nigeria's Head of Delegation and Minister of State for Petroleum Resources (Oil), Senator Heineken Lokpobiri.

"Excellency, we thank you for your valuable contributions and leadership to this Organization and congratulate you on the many ways you are helping lead Nigeria's dynamic energy industry into the future," he said.

From strength to strength

Now in its 23rd edition, the Nigeria Oil and Gas Conference and Exhibition continues to go from strength to strength as a leading energy event in Africa and globally.

With a high-caliber programme and a leading exhibition covering roughly 9,000 square metres, the event is estimated to have attracted more than 7,000 attendees from Africa, the Middle East, Europe, Asia and the US.

After complimenting the organizers on the event's excellent programme, he proceeded to deliver his address in which he shared OPEC's viewpoints on the Conference themes, which, he added, came at a "critical juncture in our industry".

Opportunities

In terms of industry opportunities, the Secretary General spoke optimistically, saying that oil and gas producers in Nigeria, Africa and worldwide will be blessed with abundant opportunities to expand their industries as energy requirements rise globally.

Haitham Al Ghais, OPEC Secretary General, delivered pre-recorded remarks at the 23rd Nigeria Oil and Gas Conference.

"At OPEC, we see a bright future ahead for energy, with significant opportunities for robust long-term growth," the Secretary General said.

After sharing some key oil market data related to oil demand, economic and population growth, as well as urbanization, he underlined that the world will require all forms of energy to meet long-term energy requirements.

"Oil and gas will remain the predominant fuels in the energy mix. In fact, oil alone will retain its share at almost 30 per cent in 2045 as world demand for oil soars to an estimated 116 million barrels per day by that time," he stated. "To meet this rapid and robust growth in energy consumption, the industry will need to boost investment levels significantly in the years to come."

According to OPEC's research, cumulative oil-related investment requirements from now until 2045 will

"Oil and gas will remain the predominant fuels in the energy mix. In fact, oil alone will retain its share at almost 30 per cent in 2045 as world demand for oil soars to an estimated 116 million barrels per day by that time."

— Haitham Al Ghais, OPEC Secretary General.

> *"OPEC and its Member Countries continue to advocate for a balanced and fair process for adaptation, mitigation and the means of implementation, particularly with regard to climate finance and technology."*
>
> ***— Haitham Al Ghais, OPEC Secretary General.***

amount to approximately $14 trillion or around $610 billion on average per year.

"Securing this vital funding is essential to maintaining security of supply and avoiding unwanted volatility," he added.

He then turned his attention to the unrealistic predictions related to peak demand and the premature efforts of some industry players to adopt net-zero policies.

"I am certain you are aware of some recent predictions for peak demand by 2030 and calls for a discontinuation of investment in hydrocarbons," he stated. "These voices are not in touch with reality, and now we are seeing large corporations and governments re-evaluate their transition strategies and timelines. Indeed, the rush to adopt "Net Zero" strategies was misguided and simply not realistic."

View of Lagos Island Central Business District and Lagos Harbour.

Balancing priorities

On the topic of energy transitions, the Secretary General pointed out that developing countries have their own unique priorities, goals and challenges, and that these must be respected in efforts to address climate change.

"Developing countries continue to balance priorities between developing their national economies and addressing climate change," he underlined. "In this regard, OPEC and its Member Countries continue to advocate for a balanced and fair process for adaptation, mitigation and the means of implementation, particularly with regard to climate finance and technology. This is crucial for Africa, to ensure its unique circumstances are respected and taken into consideration."

Energy poverty

On the issue of energy poverty, the Secretary General made a renewed call to world leaders for an energized approach to tackling this scourge, which is still a major challenge for the developing world in general and Africa in particular.

"We must not relent in our efforts to tackle the issue of energy poverty," he proclaimed. "It is an unfortunate fact that still today, there are an estimated 675 million people with no access to basic forms of energy and 2.3 billion without access to clean cooking fuels. World leaders must unite and advocate for the necessary support and resources to make a difference in addressing this important matter."

Dialogue and cooperation vital

Looking ahead, Secretary General Al Ghais vowed that OPEC would continue to prioritize dialogue and cooperation efforts with all of its energy partners, including in Africa.

This, he added, will be essential for achieving our common goals and optimizing effective and timely responses to global energy challenges.

"In this regard, we will continue to prioritize the OPEC-Africa Dialogue. Nigeria continues to play a key role in this important event, which serves as a highly valuable forum for the exchange of outlooks," he stated. "Global energy cooperation has been OPEC's *modus operandi* since its founding and will continue to be so well into the future."

Nigeria committed to boosting oil production

During the 23rd Nigeria Oil and Gas Conference and Exhibition, Senator Heineken Lokpobiri, Minister of State for Petroleum Resources (Oil), announced that Nigeria was committed to increasing oil production to help meet domestic demand and generate revenue through international sales.

The Minister made this pledge during a keynote address he delivered at the opening ceremony of the event, which was held at the International Conference Centre (ICC) in Abuja and attended by leading energy players from across Nigeria, Africa and the world.

Nigeria's Minister of State for Petroleum Resources (Oil), Senator Heineken Lokpobiri.

Investment critical

Other themes highlighted by the Minister in his remarks included the critical issue of increasing industry investment and the importance of cooperation and dialogue among industry stakeholders worldwide.

"Working together, we can secure the best interests of our nation and ensure a prosperous future for our energy sector," he said.

Senator Lokpobiri also participated in a special tour of the exhibition, expressing his enthusiasm for the technological advancements showcased by Nigerian companies.

"It is heartening to witness the technological advancements embraced by our people, which demonstrate our nation's commitment to progress in the energy sector," he stated. "These initiatives are central to our strategy to enhance the fortunes of oil and gas in Nigeria."

Dedicated to sustainable growth

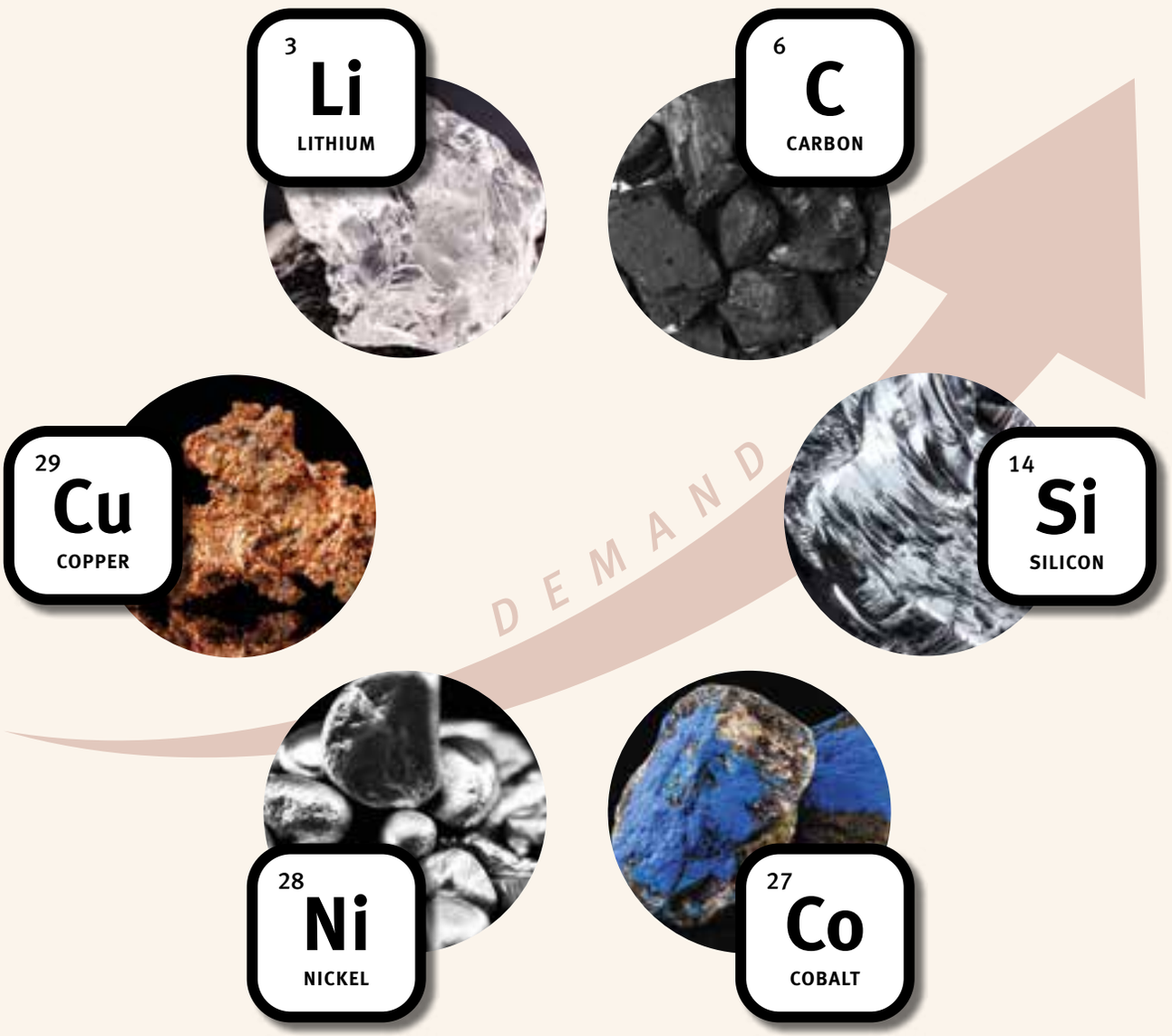
The Minister reaffirmed the Government's determination to help create an enabling environment for enhanced investment and technological innovation.

Additionally, he reaffirmed the Ministry's objectives to ramp up production to help meet rising demand and achieve revenue targets from international sales.

In this regard, the Minister encouraged energy leaders attending the event to collectively explore opportunities for greater collaboration in advancing Nigeria's important energy sector in the years to come.

In closing, Senator Lokpobiri reaffirmed Nigeria's dedication to driving progress and ensuring sustainable growth in the oil and gas sector.

Critical minerals:
a realistic assessment



Today, there is increasing talk of the challenges surrounding expectations for critical minerals, and their deployment in renewables, battery storage, electric vehicles (EVs) and associated infrastructure. It is important to garner an understanding of what future scenarios mean for critical minerals and provide an informative and realistic assessment of what is in front of us. In this SG's Corner, ***Haitham Al Ghais****, OPEC Secretary General, provides some thoughts on these issues.*

Sustainable energy pathways are vital for populations all over the world. With this in mind, we need to appreciate the real-world impacts of scenarios and policies aimed at ramping up renewables and EVs. There are many elements that filter into this, a central one being the role played by critical minerals.

These minerals, such as copper, cobalt, silicon, nickel, lithium, graphite and rare earths underpin the development of renewables and EVs. The International Energy Agency (IEA) says that in its Net Zero Emissions by 2050 Scenario, demand for critical minerals quadruples by 2040. It is a pace never seen before in history.

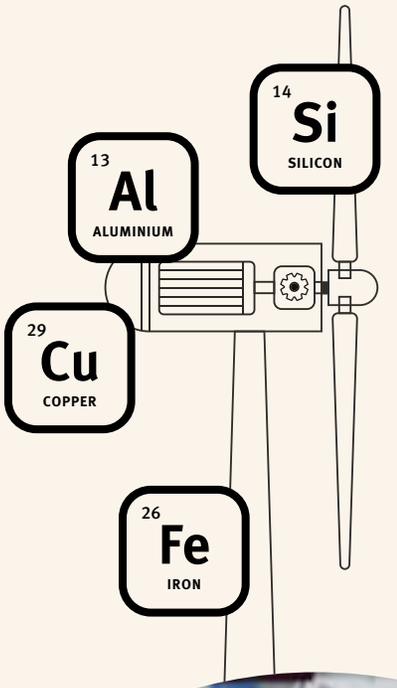
The purpose of highlighting this should in no way detract from the importance that OPEC attaches to the role of renewables and electrification in our energy future. Our Member Countries are investing heavily in renewables, in all stages of their supply chains, and participating in the development of EVs.

However, we do need to carefully consider the nature of such an expansion of critical mineral requirements. Is this kind of expansion truly feasible? What are the implications? How sustainable is it? And how important are oil and gas to the expansion of critical minerals, as well as renewables, EVs and grids?

In the mentioned IEA scenario, by 2040, copper demand rises by 50 per cent, rare earths demand almost doubles, cobalt demand more than doubles, and nickel demand is close to tripling. These are nowhere near the largest increases either. Graphite demand grows almost four times, and lithium sees a nearly ninefold expansion by 2040, underlining its crucial role in batteries.

This will require the construction of a huge number of new mines. Back in 2022, the IEA said that by 2030 alone, the world would need to build 50 new lithium mines, 60 new nickel mines and 17 cobalt mines.

Copper mine in Peru.



It should be borne in mind that, historically, critical supply chain projects, such as for these types of commodities, have had long development lead times, from discovery to first production. It begs the question: is such growth realistic? And what might the impact be if growth comes up short, and equally importantly, what if policymakers have also followed a path of no longer investing in new oil and gas projects?

The development of critical minerals involves invasive extraction and processing activities, underscoring the physical harshness of an electrified world. EVs, wind turbines, solar panels, as well as new grids, are all hungry for critical minerals. This is starkly highlighted when making comparisons.

An EV contains approximately 200 kg of minerals. For contrast, a conventional car uses around 34 kg. One megawatt of electricity produced by an offshore wind turbine requires around 15 tons of minerals, while the figure for solar is around seven tons. For natural gas, it is just over 1 ton.

Critical mineral mining is also an extremely energy intensive activity, and one that today runs on hydrocarbons. It could not function otherwise.

The use of coal and gas is vital in refining the minerals through various thermal and chemical processes. For instance, blending, to aid the removal of other metals, and in heating to high temperatures to produce more pure forms. Petroleum-based products are also used for excavators, bulldozers, dump trucks on site, as well as various forms of transportation to move minerals from supply to demand centres.

Lithium-ion high voltage battery for electric vehicle.

Coal mining.

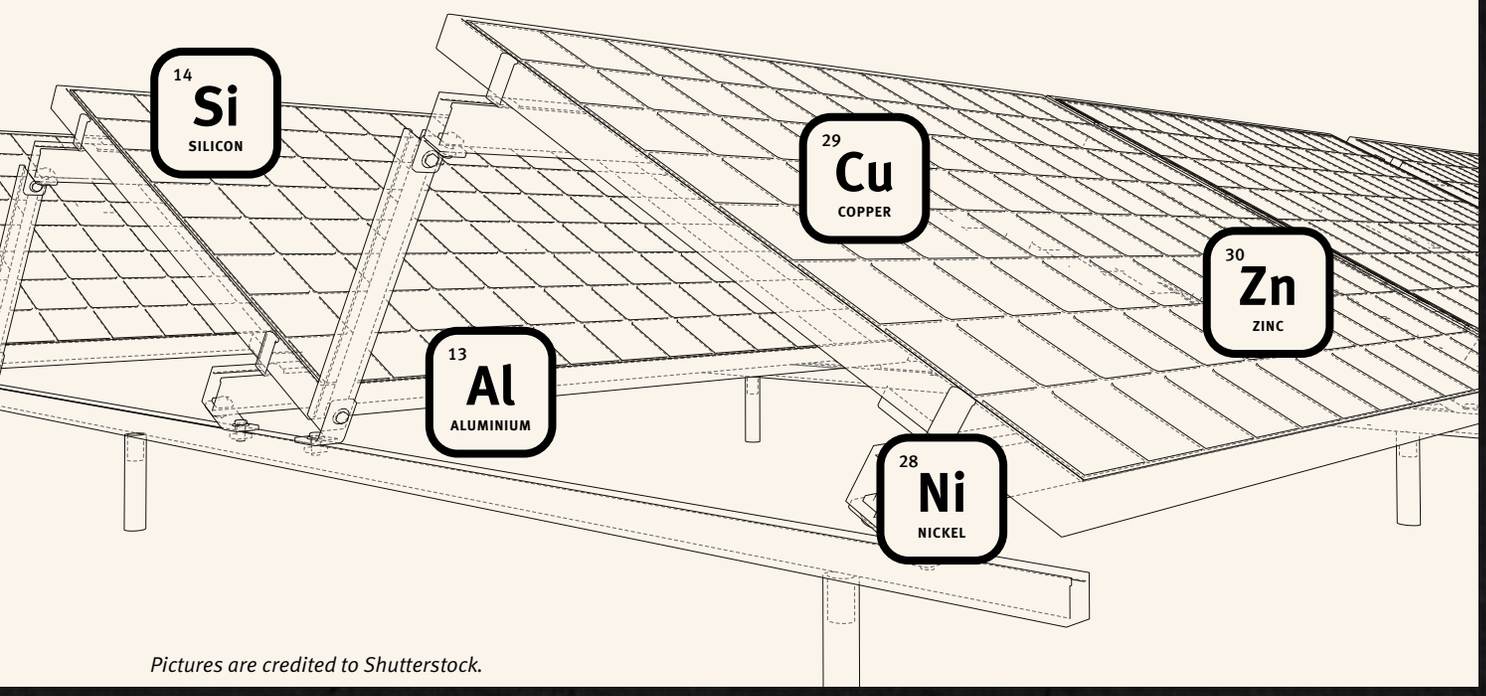
Here, it is also important to recall an earlier Secretary General's Corner [COP28 on the horizon: focusing on a holistic approach to the energy system] that highlighted how the production of turbines, solar panels and EVs cannot be achieved without vital petroleum end-use products. The oil industry, renewables and EVs are not separate from each other. They do not work in silos.

Another key point is energy consumption. Mining activities could see more than a five-fold increase by mid-century, and one of the largest sources of new mineral demand, particularly for copper, is expected to come from the need for new electricity grid infrastructure, such as power lines and transformers. In a net-zero world highlighted by BloombergNEF (BNEF), the electricity grid would need to stretch to the sun — a distance of around 152 million kms.

Is it realistic to think renewables can meet the expected electricity expansion alone, particularly given the world has invested over $9.5 trillion in 'transitioning' over the past two decades, yet wind and solar still only supply just under four per cent of the world's energy, and EVs have a total global penetration rate of between two per cent and three per cent. Looking ahead, BNEF, in its recent New Energy Outlook report, states that its net-zero scenario would cost $250 trillion by 2050.

Policymakers are waking up to the mineral-intensity requirements of initial net zero scenarios, and questions are being raised as to how easy it is to continually ramp up critical mineral production, exemplified by the fact that the percentage global investment increase in 2023, was at a lower level than in 2022.

Those that talk of critical minerals delivering the world a future of only renewables and EVs, are not providing a full picture. As OPEC continues to advocate, there are many future energy pathways for nations and peoples across the world, and we all need to be realistic about how these can be achieved.



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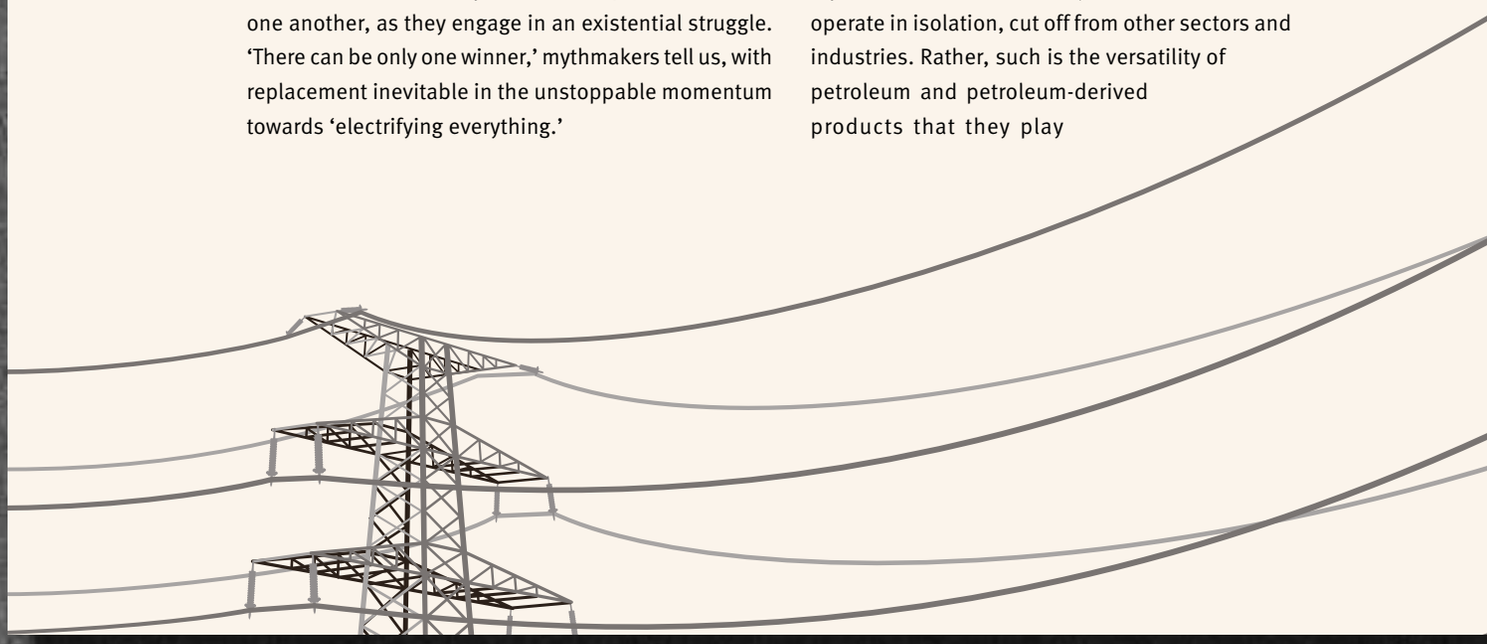
The energy mix is not a zero-sum game: oil and the electricity grid

Electrification is a cornerstone of many net zero plans. However, attainment of these ambitions will necessitate an expansion of the energy grid at a scale and speed unprecedented in history. This also raises questions about the petroleum derived products essential for the smooth functioning of the grid. In this SG's Corner, ***Haitham Al Ghais****, OPEC Secretary General, provides some thoughts on these issues.*

Electrification is often presented as oil's great rival. If we are to believe some of the myths perpetuated about the energy industry, electrification and oil operate in silos, sealed off from one another, as they engage in an existential struggle. 'There can be only one winner,' mythmakers tell us, with replacement inevitable in the unstoppable momentum towards 'electrifying everything.'

OPEC does not believe that energy sources are locked in a zero-sum game; nor can the history of energy be reduced to a succession of 'energy replacement events.' Reality tells us that oil does not operate in isolation, cut off from other sectors and industries. Rather, such is the versatility of petroleum and petroleum-derived products that they play

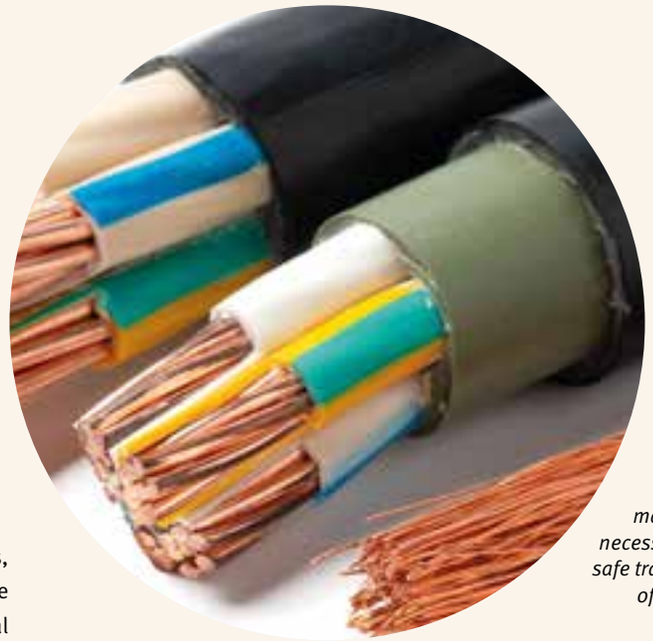


an indispensable role in a host of other sectors and industries.

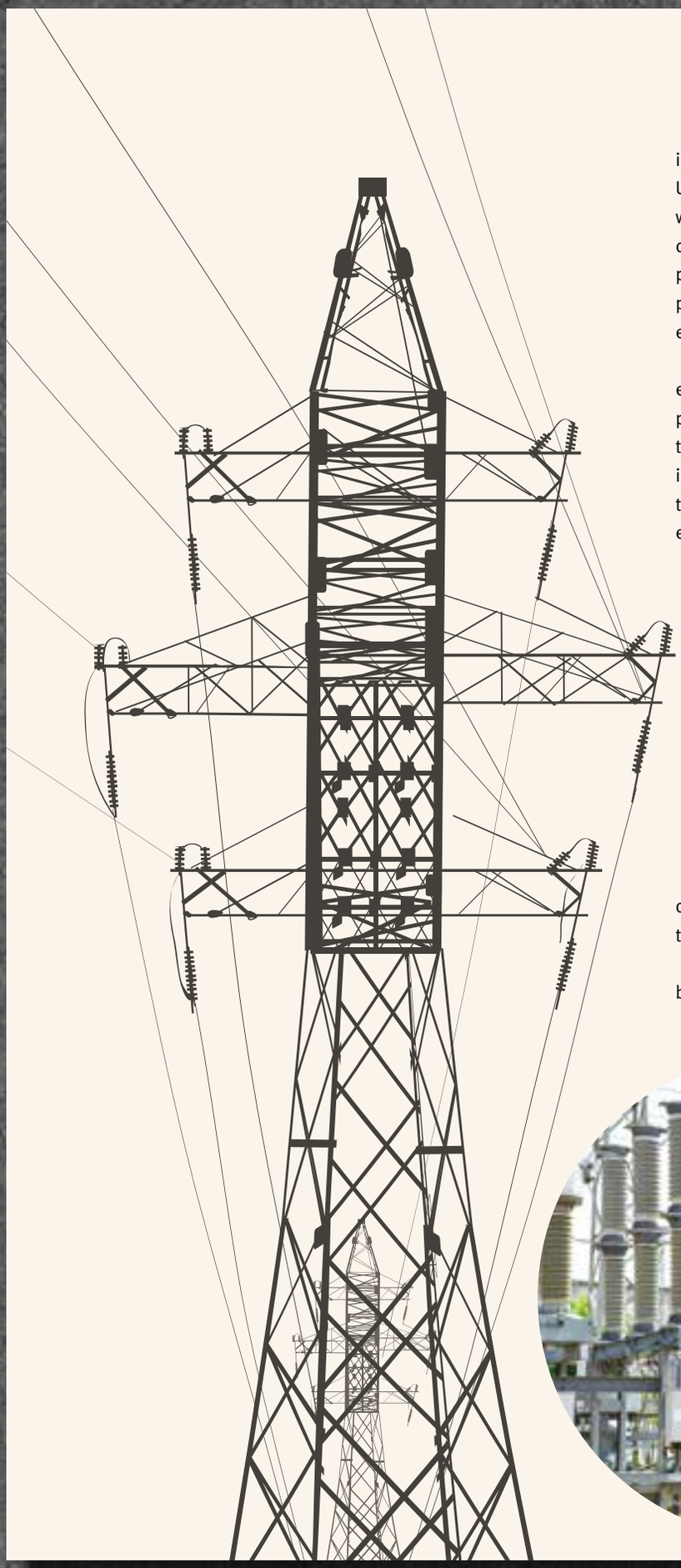
Consider the array of petroleum and petroleum-derived products used in the electricity sector itself. I have written before about the importance of such products in power generation: oil products used in wind turbines and solar panels, as well as the many end-use electrical appliances that contain petroleum-derived material.

It is important to also consider the multitude of petroleum products in the transmission of electricity, which are utilized in manufacturing, maintaining and installing cables, overhead lines, pylons, transformers, substations, and control systems, indeed, in all the components and technologies that make up this vital infrastructure.

A very clear example of this is the insulation materials required to ensure the safety of underground and subsea cables. These are particularly important



Insulation materials are necessary for the safe transmission of electricity.



in connecting offshore wind farms to the grid. Underground electric cables need insulation sheaths, which often make up around 40% of the weight of the cable. Typical materials used for this purpose include petroleum derived products such as cross-linked polyethylene, polyvinyl chloride, and cross-linked ethylene-propylene polymer.

Further examples abound. A vital device in electricity transmission is the transformer. The path of electrical energy from generation, through transmission to end-use can only be completed safely if there is the correct voltage level at each stage of the process. Transformers are crucial, as they transfer electrical energy from one electrical circuit to another circuit or multiple circuits, either stepping up or stepping down voltage levels.

For transformers to operate properly, transformer oil is essential. It insulates transformers and ensures that they can function at a stable temperature. These are primarily made from mineral oil, a distillate of petroleum. As the International Energy Agency (IEA) has stated in its report, 'Electricity Grids and Secure Energy Transitions,' "Mineral oil is used in all types of transformers to insulate and cool the transformer windings (copper coils) and core." Nearly a quarter of the weight of a large power transformer consists of transformer oil and insulation materials.

Furthermore, the transportation of equipment, by road, rail, air and water, will involve vehicles,

High-voltage power transformer substation.

Fuel is necessary for the transportation of industrial equipment.

often highly specialized, that consume gasoline, diesel, aviation and marine fuels. And the vehicles, such as cable-laying vessels, and the material needed to build this critical infrastructure, such as steel, aluminum, copper and concrete, require a host of petroleum-products.

It is also important to consider the quantity of the materials required under ambitious targets, given that electrification is a cornerstone of most net zero plans. The world currently generates between 27,000 and 30,000 Terawatt hours (TWh) of electricity. According to research by the Energy Transitions Commission, in a report entitled, 'Making Clean Electrification Possible: 30 Years to Electrify the Global Economy,' this would need to increase to between 90,000 and 130,000 TWh to achieve net zero greenhouse gas emissions by 2050. That is a 3.5 to 5-fold increase in electricity generation in a less than 30-year timeframe.

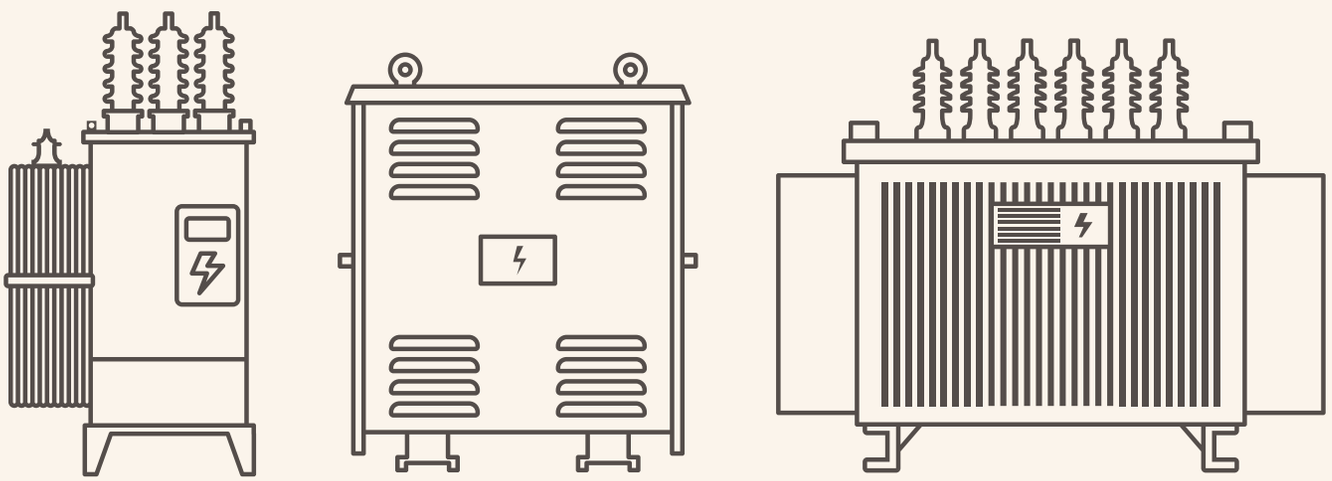
An expansion of the grid, unprecedented in history, will be necessary to attain these goals. As the IEA has written, to achieve national energy and climate goals, 80 million kilometres of overhead power lines and underground cables need to be added by 2040. That is the equivalent of replacing the entire existing global grid, equating to 100 trips to the moon and back.

Mass expansion of the electricity grid pressurizes supply chains and this could pose challenges to grid development in the coming years. It should also be recognized that these supply chain risks pertain to all materials used in the construction of grids, including petroleum-derived products.

Often commentators highlight the risks for critical minerals while assuming a safe and secure supply of petroleum-derived products. As OPEC has repeatedly highlighted, security of supply in crude oil, with all the consequence knock-on effects for petroleum-products, can only be achieved with adequate and timely oil industry investments. To put it simply: calls to halt new investments in oil projects jeopardizes the production of oil products essential for the smooth functioning and expansion of the electricity grid.

OPEC Member Countries have clear national electrification plans, which is part of a shared belief that all sources of energy will be necessary to meet future demand growth, reduce emissions, tackle energy poverty and ensure energy security. We believe oil will continue to be a vital component of future energy pathways and this is exemplified by the fact petroleum products are essential for the functioning of other sectors, such as electricity.

Hopefully, the notion that energy sources must be pitted against each other can be dispelled and, instead, policymakers can be clear-headed about energy realities and energy interconnectedness.



Pictures are courtesy of Shutterstock.

Haitham Al Ghais, OPEC Secretary General (r), met with Hon. Alexandre Silveira, Minister of Energy and Mines of the Federative Republic of Brazil.

OPEC Secretary General undertakes official visit to Brazil

*OPEC Secretary General **Haitham Al Ghais** built on last year's historic first visit of an OPEC Secretary General to the Federative Republic of Brazil by conducting an official visit in mid-August 2024. During his visit to South America's largest oil producer and economy, Al Ghais met with a number of high-level officials, including the Minister of Energy and Mines, **Alexandre Silveira**, the Minister of Foreign Affairs, **Mauro Vieira**, and the President of the Senate, **Rodrigo Pacheco**. Topics of discussion included global energy markets, contemporary energy issues and the oil industry's vital role in maintaining energy security and eradicating energy poverty.*

The OPEC delegation with the Hon. Alexandre Silveira, Minister of Energy and Mines of the Federative Republic of Brazil, and his staff.

The Secretary General began his official visit on 12 August 2024 with a meeting with Minister of Energy and Mines Silveira. During the meeting, Al Ghais underlined OPEC's support for Brazil's G20 Presidency, particularly in addressing global challenges concerning energy security, eradicating energy poverty and reducing emissions.

The Secretary General also had an official meeting with Minister of Foreign Affairs Vieira, where they discussed global energy issues, Brazil's hosting of COP30 in 2025, fostering just, inclusive and equitable energy transitions and strengthening cooperation and dialogue between Brazil and OPEC.

Furthermore, Al Ghais praised Brazil and its authorities for their multilateral efforts in energy markets, reaffirmed the readiness of OPEC and its Member Countries to support Brazil in meeting its strategic goals, and underlined the importance of ongoing dialogue under the Charter of Cooperation.

The Secretary General also met with Senate President Pacheco, where he praised Brazil's proactive approach in multiple international forums and recognized Brazil's leading position as a major oil and energy producer on the global stage.

In addition, the Secretary General emphasized the vital contribution of the oil industry in meeting the world's energy needs and eradicating energy poverty and highlighted the critical importance of oil in fostering global energy security.

Against this backdrop, Al Ghais underlined that oil would continue to remain essential in promoting sustainable economic growth and driving development worldwide.

Haitham Al Ghais, OPEC Secretary General (l), met with Ambassador Mauro Vieira, Minister of Foreign Affairs of Brazil, at the iconic Itamaraty Palace.

Haitham Al Ghais, OPEC Secretary General (l), held a meeting with the Hon. Rodrigo Pacheco, President of the Senate of the Federative Republic of Brazil.

55th JMMC Meeting highlights commitment to production conformity and continued oil market assessment

The 55th Meeting of the Joint Ministerial Monitoring Committee (JMMC) convened virtually on 1 August 2024.

The JMMC reviewed the crude oil production data for May and June 2024 and noted the overall high conformity of participating OPEC and non-OPEC countries of the Declaration of Cooperation (DoC).

It noted the assurance of the Republic of Iraq, the Republic of Kazakhstan, and the Russian Federation to achieve full conformity, and welcomed the recent submission of compensation plans for overproduced volumes since January 2024.

During the meeting, the OPEC Member Countries that participated in the 2 June 2024 meeting in Riyadh, along with Oman, reiterated that the gradual phase-out of the voluntary reduction of oil production could be paused or reversed, depending on prevailing market conditions.

Previously, these countries had announced the extension of the voluntary reduction of oil production by 2.2 million barrels per day until the end of September 2024 and outlined plans for this reduction to be gradually phased out on a monthly basis until the end of September 2025.

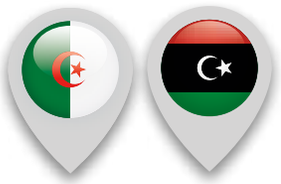
The Committee underscored that it would continue to monitor conformity with the production adjustments decided at the 37th ONOMM on 2 June 2024, including the additional voluntary production adjustments announced by some OPEC and non-OPEC countries. It also pledged to continue assessing market conditions closely.

Moreover, the Committee reiterated that it retained the authority to convene additional meetings and request an OPEC and non-OPEC Ministerial Meeting, as outlined during the 37th ONOMM on 2 June 2024.

The next Committee meeting is scheduled to take place on 2 October 2024.

OPEC Secretariat delegates at the 55th JMMC.

Algeria and Libya to partner in the energy sector



The national oil companies of Algeria and Libya — Sonatrach Company and National Oil Corporation (NOC), respectively — signed a Memorandum of Understanding (MoU) in which NOC will provide Sonatrach with drilling and well intervention equipment, as well as training and maintenance services.

The MoU was signed during a visit of NOC representatives to Algeria. Sonatrach stated that the parties discussed developing a plan for work to be carried out based on an agreement protocol signed by both companies in February 2022 and an additional annex from January 2024.

A technical committee formed by the parties will study cooperation opportunities between various branches of the companies in the areas of drilling, well intervention, geophysics, stimulation and construction.

Sonatrach stated that the annex "strengthens the axes of the partnership agreed upon between the two institutions, by including new areas of cooperation, particularly with regard to exploration and [the] development of oil and gas resources, renewable energy projects, oil services, and areas of training, exchange of expertise and transfer of knowledge.

Equatorial Guinea gives VAALCO Energy landmark production-sharing contract

Houston-based VAALCO Energy recently announced the finalization of a milestone production-sharing contract (PSC) for Block P offshore Equatorial Guinea. Approval for the 25-year development and production deal from the Equatorial Guinea government stems back to March 2024.

VAALCO Energy will have a 60% stake in Block P, with GEPetrol, the country's national oil company, and Nigerian business Atlas Petroleum International each holding a 20% share. A final investment decision is close, with VAALCO Energy set to start drilling soon. Commercial production is expected to start at the Venus conventional oil field in 2026 and peak in 2028.

The PSC was praised by the African Energy Chamber, which says the deal is pivotal in reversing production regression in Equatorial Guinea.

The company is planning to grow its crude oil production to 50,000 b/d by 2027, in line with its plans to grow production in mature fields.

VAALCO Energy is hoping to expand in Africa, and in March of this year acquired Swedish offshore exploration company Svenska Petroleum Exploration in a $65 million deal that includes Svenska's 27% interest in a block of the Baobab field offshore Côte d'Ivoire.

Memorandum of Understanding signed between bp and the Government of Iraq

An agreement signed in early August between bp and Iraq will allow the possibility of oil and gas development in the Kirkuk region.

A non-binding Memorandum of Understanding (MoU) regarding a "material integrated redevelopment programme for the Kirkuk region" spans oil and gas investment, power generation and solar, together with wider exploration activities, according to a BP press release from 1 August.

"This MoU builds on bp's strategic and longstanding relationship with Iraq. We see today's signing as an important step towards the potential further development of this critically important area," stated bp Chief Executive Officer Murray Auchincloss.

Auchincloss and Nader Zaki, bp Regional President for the Middle East and North Africa, signed the non-binding MoU together with Iraqi Prime Minister Shia' Al Sudani and Hayan Abdul Ghani, Deputy Prime Minister for Energy Affairs and Minister of Oil.

Stabilization of production and reversal of decline may be achieved through the rehabilitation of existing facilities and the construction of new facilities, including gas expansion projects, along with a drilling programme at the Kirkuk fields, states the press release.

"The integrated redevelopment programme has the potential to bring opportunity and investment into the Kirkuk region, unlocking future downstream growth while also bringing tangible benefits to the local population with job creation and local supply requirements."

'Giant' oil and gas discovery announced by Kuwait Oil Company

مؤسسة البترول الكويتية
وشركاتها
Kuwait Petroleum Corporation
and subsidiaries

Kuwait Oil Company (KOC) announced a major discovery of light oil and associated gas in the offshore Al-Nokhatha field in mid-July.

The field, which is located east of the country's Failaka Island, is estimated to hold approximately 3.2 billion barrels of oil (bn b), according to an article in Oil&Gas.

The find is a major step forward in Kuwait's marine hydrocarbon exploration efforts and covers an estimated area of 96 square kilometres.

The field is currently producing around 2,800 barrels of light oil and seven million cubic feet of associated gas each day. KOC stated that the find suggests further resource enhancement may be possible in the field.

The project began with two-dimensional seismic surveys, as well as geophysical and geological studies identifying optimal drilling sites and preparing for logistical operations. Six exploratory wells will be drilled in the first phase, with further drilling depending on outcomes.

The Ministry announced that the find has increased Kuwait's oil reserves from 101.5 bn to 104.7 bn b.

Kuwait Petroleum Corporation's 2040 vision includes targeting production capacity of 4 million barrels of oil per day (mb/d) by 2035, while the Kuwait Petroleum Corporation (KPC) aims to boost the country's production capacity to over 3 mb/d by 2025.

Heightened security leads to rebound in Nigeria's crude oil output

Strengthened security that has helped curb the theft of crude oil in Nigeria has allowed the country's output to rise to between 1.6 and 1.7 million barrels of oil per day (mb/d), the Chief of Naval Staff, Emmanuel Ikechukwu Ogalla, stated in the first week of August.

This is up from 1.2 mb/d produced in February, he stated, according to a Reuters article. The Navy has blocked channels for the sale of illegally refined petroleum products, said Ogalla.

"We have stepped up surveillance and enforcement in the oil producing areas," the naval chief said.

"Right now, as we speak, the Nigerian Navy has 12 vessels on the sea to protect oil production and stem oil theft. We have arrested over 16 vessels, so far."

The country could produce 6 mb/d of oil with enough investment in its energy sector, stated Nigeria's Minister of Petroleum Sen. Heineken Lokpobiri in May.

Sen. Heineken Lokpobiri, Nigeria's Minister of Petroleum.

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OPEC Member Countries enjoy success at the Paris Olympics

One hundred years after the 1924 Summer Olympics, the world returned to Paris to celebrate more than a century of athletic evolution and success. The three key Olympic values – excellence, respect and friendship – were on full display as the best of the best flocked to the French capital for 19 days of intense and fulfilling competition. All OPEC Member Countries were present in Paris, with IR Iran achieving its second most successful Olympics in history and Algeria matching its 1996 record medal tally. Of the five OPEC gold medals won, IR Iran's three were for wrestling and taekwondo – two sports the country has been prominent in for many years. Both of Algeria's golds were not only national, but continental firsts, as the country celebrated historic milestones in female gymnastics and boxing.

Considering the Organization's current membership, OPEC Member Countries were able to match the total medals won (15) at both Rio 2016 and Tokyo 2020. However, it is the composition of the medals received in Paris that made it one of the best medal tallies in the history of the Summer Olympics, second only to the outstanding 18-medal haul from London in 2012. Over the course of their Olympic history, OPEC Member Countries (in their current composition) have amassed a total of 165 medals, 41 gold, 54 silver and 70 bronze.

OPEC Member Countries at the Olympics

Medals won, all time (1900–2024)

Gold	Silver	Bronze	Total
41	54	70	165

Medals won (Paris 2024)

Gold	Silver	Bronze	Total
5	6	4	15

A chronicle of excellence and triumph

IR Iran

Since making its debut at the 1948 London Olympics, IR Iran has consistently demonstrated its national proclivity for various forms of martial arts, including wrestling and taekwondo, as well as weightlifting. As of 2024, IR Iran has won 27 gold, 29 silver, and 32 bronze Olympic medals for a total of 88.

It was at the 1948 Olympics that Jafar Salmasi, a weightlifter competing in the men's 60 kg weight class, won the country's first Olympic medal, bringing home bronze.

The country's natural aptitude for the sport began to shine through at the 1968 Games in Mexico City when Mohammad Nassiri secured the country's first weightlifting gold in the 56 kg division, supplemented by Parviz Jalayer's silver in the 67.5 kg weight class. However, it was Hossein 'The Iranian Hercules' Rezazadeh who truly put Iranian weightlifting on the map by becoming the country's only two-time Olympic weightlifting champion after his record-breaking performances in both Sydney (2000) and Athens (2004).

IR Iran's rise to wrestling fame began as early as the 1952 Helsinki Games, where the country's athletes secured an impressive five medals (two silver and three bronze), including through Gholamreza Takhti, who would go on to make history alongside fellow wrestler Emam-Ali Habibi by becoming one of the first Iranian gold-medalists four years later in Melbourne. Over the decades, wrestling has remained a consistent source of pride and success for IR Iran, with athletes like Mohammad Nassiri, Rasoul Khadem, Alireza Dabir and Hassan Yazdani achieving Olympic glory.

The introduction of taekwondo to the Olympics in 2000 provided the country with another avenue for success with Hadi Saei going on to become the country's most decorated Olympian to date, earning one bronze and two gold medals at the 2000, 2004 and 2008 Summer Games.

IR Iran's performance in the 2012 London Olympics earned the country its highest tally ever with 13 medals. This impressive haul included seven golds in mainstays weightlifting and wrestling, as well as the country's first ever silver in an athletics discipline with Ehsan Haddadi in the discus.

Reuters

Mohammadhadi Saravi of IR Iran celebrates winning Greco-Roman wrestling gold in the match against rival Artur Aleksanyan of Armenia at the Paris 2024 Olympics.

Tokyo 2020 saw IR Iran win gold in two new sports with Javad Foroughi breaking the Olympic record in the men's 10 metre air pistol and Sajad Ganjzadeh winning the men's +75 kg kumite karate final.

The Paris Games marked the country's second most successful Olympics in history, with three golds, six silvers and three bronzes.

Continuing a history of excellence in martial arts, all four of the country's taekwondo athletes won medals in Paris

Reuters

Saeid Esmaeili Leivesi of IR Iran celebrates victory in the men's Greco-Roman 67 kg final.

Shutterstock

Arian Salimi of IR Iran (second l) celebrates his gold medal after winning the men's +80 kg Taekwondo final at the 2024 Paris Games.


Reuters / Jack Gruber-USA TODAY Sports

Kaylia Nemour of Algeria reacts after winning gold in the uneven bars gymnastics event finals during the 2024 Paris Olympics.

with three reaching the final. Arian Salimi was a standout performer, clinching the men's heavyweight gold. In a thrilling final, Salimi faced Great Britain's Caden Cunningham and emerged victorious despite initially being one round down. He staged a comeback in the following two rounds to clinch IR Iran's third-ever taekwondo gold. Competing in the men's 80 kg category, Mehran Barkhordari earned a silver medal.

Nahid Kiyanichandeh made history by becoming the first Iranian female athlete to win an Olympic silver medal in the 57 kg taekwondo class, and Mobina Nematzadeh won the 49 kg bronze contest in a bout against fellow Member Country athlete Dunya Ali M Abutaleb of Saudi Arabia. In terms of medals, IR Iran won the most overall in taekwondo in Paris, although the sport's country of origin, South Korea, sat atop the table after winning two golds.

IR Iran's largest Parisian triumph came in the men's Greco-Roman and freestyle wrestling events, amassing a cumulative eight medals across both disciplines.

IR Iran's first gold in Paris was earned by Mohammadhadi Saravi who achieved a clutch victory against Armenia's Artur Aleksanyan in the men's Greco-Roman 97 kg final. Having been denied a shot at the top prize by the same opponent during the Tokyo 2020 semifinals, the Iranian was set on reversing the result. Sitting at a score of 1:1 shortly into the second half, a quick takedown from Saravi allowed him to secure a lead of 4:1, as well as the long-awaited Olympic title.

In a similar demonstration of skill and determination, 21-year-old Saeid Esmaeili overcame Ukraine's Parviz Nasibov in the men's Greco-Roman 67 kg gold-medal bout. Trailing by three points at the start of the second half, the young talent executed an exceptional takedown reversal bringing the point count to 2:3. After two more minutes of what was an incredible performance from both combatants, the scoreboard read 6:5 in favour of the Iranian. The third Greco-Roman medal, silver, was earned by Alireza Mohmadipiani.

The three silvers for freestyle wrestling in the 65 kg, 86 kg and 125 kg weight classes were taken home by Rahman Amouzadkhalili, Hassan Yazdanicharati and Amir Hossein Zare, respectively.

Two bronze medals were also secured in heavyweight Greco-Roman and freestyle wrestling by Amin Mirzazadeh and Amirali Azarpira.

Boxer Imane Khelif after winning the women's 66 kg welterweight quarterfinals in Paris. She went on to win gold for Algeria.

Iranian sports were represented in Paris by a total of 41 athletes competing in 14 disciplines. The flag bearers at the opening ceremony were artistic gymnast and Asian Games silver-medalist Mahdi Olfati, and table tennis athlete Neda Shahsavari.

Matching a historic record

Algeria

Since debuting at the 1964 Tokyo Games, Algeria has accumulated a total of 20 Olympic medals, seven golds, four silvers and nine bronzes.

Algeria's first taste of Olympic success came at the 1984 Los Angeles Games, when Mustapha Moussa and Mohamed Zaoui won bronze in their respective boxing weight classes, with the former sharing the podium with boxing legend Evander Holyfield. The 1996 Atlanta Games cemented Algeria's legacy as a promising boxing nation with Hocine Soltani beating Bulgaria's Toncho Tonchev for the gold in the lightweight division.

The country's most celebrated Olympic wins have come in middle-distance running. The 1992 Barcelona Games marked a historic milestone when 1,500-metre runner Hassiba Boulmerka not only became the first Algerian woman to win an Olympic medal, but also the country's first gold-medalist. The tradition of excellence in middle-distance running continued at the 1996 Atlanta, 2000 Sydney, 2012 London and 2016 Rio Games with Noureddine Morcelli, Nouria Merah-Benida and Taoufik Makhloufi adding three more golds and one silver to Algeria's overall tally.

The Paris Games marked the country's most outstanding Olympics performance in almost 20 years with the nation matching it's two gold medal record from 1996. At just 17 years of age, Kaylia Nemour made history by becoming not only the first Algerian, but also the first African to win an Olympic medal of any value in women's artistic gymnastics on the uneven bars.

Following an impeccable routine and flawless dismount the young talent edged out China's Qiu Qiyuan for gold by registering the highest score of the meet across all events — 15.700. What made this achievement even more astounding is that the 2023 Algerian Female Athlete of the Year brought home the gold after recovering from surgery on both her knees in late 2021 and following an almost year-long rehabilitation programme.

The country's second gold was brought home by boxer Imane Khelif following a decisive victory in the women's welterweight final against China's Yang Liu. After making her Olympic debut in 2020 and conceding

The Nigerian olympic football team, 16 August 1996.

the quarterfinal to eventual two-time Olympic gold-medalist Kellie Harington of Ireland, Khelif kept her mind fixed on the prospect of Olympic glory. Four years later, with three international gold medals under her belt (2022 African Championships, 2022 Mediterranean and 2023 Arab Games), she realized her dream.

Algeria's third and final medal in 2024, bronze, was earned in athletics by Djamel Sedjati, the current national record holder for the men's 800 metres, after an exhilarating performance saw him place just behind gold-medalist Emmanuel Wanyonyi of Kenya.

Algeria's delegation at the Paris games consisted of 45 athletes in 15 different sports. The flag bearers for the country at the opening ceremony were national triple jump record holder Yasser Mohammed Triki, and African Games gold-medalist judoka Amina Belkadi.

Nigeria

Since making its Olympic debut at the 1952 Helsinki Games, Nigeria has earned a total of 27 medals across a range of disciplines, with a specific focus on athletics and football.

Nigeria's first Olympic medal came at the 1964 Tokyo Games, when Nojim Maiyegun won bronze for light middleweight boxing. The sport has continued to be a source of Olympic success for the country, with Isaac Ikhouria and Peter Konyegwachie securing silvers at the 1972 and 1984 Games, respectively.

The 1996 Atlanta Games marked Nigeria's most impressive Olympic triumph to date, with two golds, one silver and three bronzes. Chioma Ajunwa made history by placing first in the women's long jump, becoming the country's first Olympic gold-medalist.

Reuters

Venezuela's Yulimar Rojas celebrates with her medal after winning the Women's Triple Jump Final during the World Athletics Championship in Budapest, Hungary, in 2023.

Wikimedia Commons

Rubén Limardo at the Masters Épée in 2012.

The men's football team also captured the world's attention in 1996 with their remarkable journey to Olympic glory. The team, led by coach Jo Bonfrère, knocked out favourites Brazil and Argentina to clinch Nigeria's first-ever Olympic gold medal in a team sport. This victory was celebrated across the continent and remains one of Nigeria's most significant sporting achievements. The national team also won silver in 2008 in Beijing.

The country has also excelled in athletics over the years, particularly in sprint events. The women's 4x100 metres relay team won a silver medal at the 1992 Barcelona Games, and Blessing Okagbare secured bronze in the women's long jump in Beijing in 2008.

The 2000 Sydney Games saw Nigeria add more medals to its tally, with the women's 4x400 metres relay team earning silver and the men's squad securing gold after the disqualification of the original first place holders — the US.

The country had 88 Olympic hopefuls competing in Paris, with track and field athlete Tobi Amusan and badminton player Anuoluwapo Juwon Opeyori chosen as the flag bearers for the opening ceremony.

Venezuela

Since debuting at the 1948 London Games, Venezuela has gradually built its reputation on the international stage, earning a total of 19 medals across various disciplines, including boxing, athletics, fencing, weightlifting, and track cycling.

The nation's first Olympic medal came in the 1952 Helsinki Games, when Asnoldo Devonish secured bronze in the men's triple jump, signaling the start of Venezuela's presence in athletics.

Boxing has been a particularly fruitful sport for Venezuela, contributing several medals to its Olympic tally. In the 1968 Mexico City Games, Francisco 'Morochito' Rodríguez made history by winning the country's first gold medal, competing in the light flyweight division. The 1976, 1980, 2004 and 2016 Games saw Pedro Gamarro, Bernardo Piñango, Ismael José Díaz and Yoel Finol earn silver medals in various boxing categories.

Fencing has also been a source of Olympic glory for Venezuela. In 1968, Omar Catarí won a bronze medal in the men's individual foil. The country returned to the fencing spotlight at the 2012 London Games, when Rubén Limardo secured the nation's first gold in 44 years thanks to his performance in the men's individual épée, underscoring the potential of Venezuelan athletes beyond the boxing ring.

After earning silver in the women's triple jump at the 2016 Rio Games, Yulimar Rojas brought Venezuela's Olympic journey full circle in Tokyo 2020 by winning gold by over half a metre. In doing so, she set a new world record of 15.67 metres to firmly establish herself as one of the sport's all-time greats.

The country has also seen success in weightlifting, with Keydomar Vallenilla and Julio Mayora earning silver medals in two different categories in the 2020 Tokyo Games.

Despite suffering an injury which did not allow her to defend her title in Paris, Yuliman Rojas was nominated as one of Venezuela's Paris 2024 flag bearers alongside Julio Mayora during the opening ceremony.

Sheikh Ahmad Al-Maktoum of the United Arab Emirates celebrates as he holds aloft his national flag after he won the men's double trap final of the 2004 Olympic Games in Athens, 17 August 2004.

UAE

The UAE's Olympic chronical currently encompasses eleven consecutive Summer Games and two medals – one gold and one bronze.

Sheikh Ahmed Al-Maktoum's historic victory in the double trap event at the 2004 Summer Olympic Games was a moment of national triumph and pride. Al Maktoum displayed remarkable focus and precision in Athens, dominating the competition from the outset and consistently hitting target after target. The tension in the air was palpable as he approached his final shots, but the athlete remained unfazed, ultimately securing

Alamy / Henri Szwarc

Prince Abdullah Al Saud wins a bronze medal in the Equestrian Jumping Team event for Saudi Arabia at the London Olympics, 6 August 2012.

the UAE's first-ever Olympic gold medal and equaling the then Olympic record of 189.

Sergiu Toma's experience at the 2016 Rio Olympics was a testament to the judoka's unwavering determination. Competing in the +81 kg category, his journey began with a number of confident wins against strong competitors from Brazil and the US. In the quarterfinals, Toma's grit shone through as he secured a victory against the 2015 world champion — Japan's Tkanori Nagase. Although he narrowly missed the finals due to a loss to eventual gold-medalist Khasan Khalmurzaev of Russia, Toma clinched the bronze medal with a masterfully executed ippon, cementing his legacy as the second athlete in history to bring Olympic glory to the UAE.

A total of fourteen Olympians from the UAE participated in the Paris Games, competing in athletics, cycling, equestrian disciplines, judo and swimming. The country's flag bearers at the opening ceremony were 2018 Youth Olympic silver-medalist in equestrian events, Omar Abdul Aziz Al Marzooqi, and national cycling champion Safia Al Sayegh.

Saudi Arabia

Saudi Arabia's medal tally currently stands at two silvers and two bronzes across three disciplines – showjumping, athletics and karate.

The Kingdom's two first Olympic medals came during the 2000 Sydney Games with silver secured by Hadi Soua'an Al-Somaily in the 400-metre hurdles race (three hundredths of a second separating him from the top prize) and Khaled Al-Eid who overcame many favourites and made history by placing third in

Reuters

Anthony Obame Mylann of Gabon and Mahama Cho of Britain shake hands after the match at the 2016 Rio Games.

the individual showjumping event. The 2012 London Olympics were marked by a similar showjumping triumph, with a team comprised of Prince Abdullah bin Mutaibbin Abdullah Al Saud, Ramzy Al Duhami, Kamal Bahamdan and Abdullah Waleed Al Sharbatly overcoming equestrian powerhouses to bring home the bronze.

Saudi Arabia's fourth Olympic medal was earned through the historic performance of 23-year-old Tarek Hamdi in karate at the 2020 Tokyo Games, where he managed to overcome rivals from the US, Canada and Japan to face IR Iran's Sajjad Ganjzadeh in the men's kumite +75 kg final. After securing a four-point lead shortly after the start of the match, the Kingdom's first Olympic gold was within reach, however, a penalty would see Hamdi stand on the second-highest pedestal.

The national team in Paris consisted of eight athletes competing for a shot at athletic, equestrian, swimming or taekwondo glory, while the nation's flag bearers at the opening ceremony were Ramzy Al Duhami and Dunya Ali M Abutaleb, a talented taekwondo athlete who broke new ground for Saudi women in the sport by reaching the bronze-medal bout in Paris.

Gabon

The 2012 London Games marked Gabon's Olympic triumph with Anthony Obame performing in the men's heavyweight taekwondo final against Italy's Carlo Molfetta and a shot at gold. Three rounds in, the scoreboard read nine points each, and it was decided that the winner would be identified using a tiebreaker round. After another two minutes of intense combat, the judges favoured the Italian, but Obame's silver was an astounding performance.

Paris 2024 saw five Gabonese athletes compete for a spot on the podium in athletics, judo, swimming and taekwondo. Runner Wissy Frank Hoye Yenda Moukoula and swimmer Noelie Annette Lacour, who went on to set a personal best of 27.68 seconds in the 50 metre freestyle, were chosen as the team's flag bearers.

Kuwait

Over the course of its Olympic history, Kuwait has won a total of three bronze medals — all in shooting disciplines. Two belong to Fehaid Al-Deehani who

Khaled Almudhaf of Kuwait in action at the 2024 Paris Games.

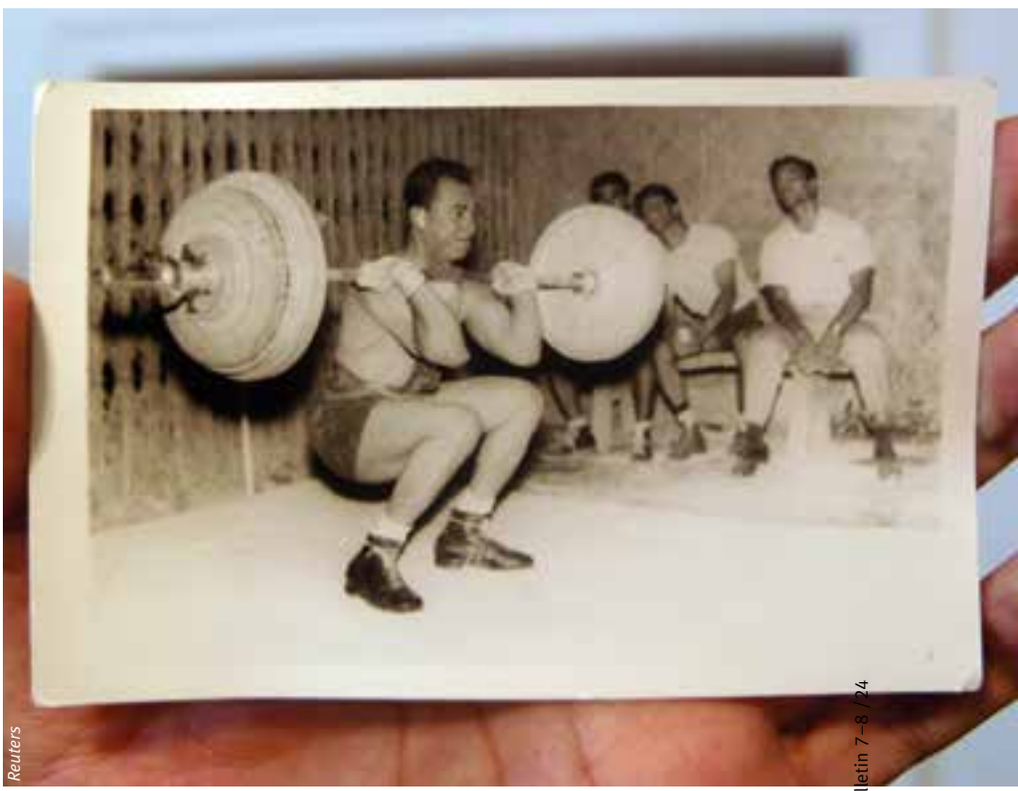
reached the podium in 2000 and 2012 for his outstanding performances in the double trap and trap shooting competitions, respectively. The third bronze was brought home from the Tokyo 2020 Games by Abdullah Al-Rashidi in skeet shooting.

The country sent nine participants to the Paris Games to compete in athletics, fencing, rowing, sailing, shooting and swimming, with fencer Yousef Alshamlan and rower Soaad Alfaqaan chosen as the team's flag bearers for the opening ceremony.

Iraq

Iraq first participated at the Olympic Games in 1948 and the country's only medal-winning Olympian so far is weightlifter Abdul Wahid Aziz, who took bronze in the lightweight division at the 1960 Summer Olympics in Rome.

The country delegated 22 athletes to the Paris Games to compete in athletics, football, judo, swimming and weightlifting. The nation's flag bearer for the opening ceremony was Junior World Record holder for the heavyweight weightlifting snatch Ali Ammar Yusur Rubaiawi.



A family photo of Iraq's only Olympic medallist, the late great Abdul Wahid Aziz.

The Congo delegation at the opening ceremony of the 2024 Paris Games.

Athletes from Equatorial Guinea greet spectators during the opening ceremony at the 2024 Paris Games.

The Libyan delegation at the opening ceremony of the 2024 Paris Games.

Congo

Congo first participated in the Tokyo Summer Olympics in 1964 and has taken part in almost every edition of the Games since. In Paris, the country's four-person-team competed in athletics, swimming and table tennis.

Congo's flag bearers during the opening ceremony were Freddy Mayala, a talented young swimmer who set a new personal best of 27.52 seconds in the 50 metres freestyle, and Natacha Ngoye Akamabi, a second-time flag bearer and All-African and Francophone Games medal-winning sprinter.

Equatorial Guinea

Paris marked Equatorial Guinea's eleventh consecutive participation in the Summer Olympics, with the first being the 1984 Los Angeles Games. This year, the country nominated three athletes to participate in athletics and swimming.

The country's flag bearers during the opening ceremony were Higinio Ndong Obama, a young swimmer who also managed to set a personal best of 28.42 seconds in the 50 metres freestyle heat, and the team's 100 metres sprinter — Sefora Ada Eto.

Libya

Libya's first Olympic appearance was in 1968 in Mexico City. At the Paris Games, the country sent six athletes to participate in athletics, rowing, shooting, swimming and weightlifting.

The flag bearers for the opening ceremony were Ahmed Abuzriba, a 2023 All-African Games silver and bronze medal-winning weightlifter, and the team's 100 metres backstroke athlete, Mek Almukhtar.

OPEC

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At the vanguard of

The dramatic skylight atrium of the 60-floor National Bank of Kuwait headquarters, which is the second-tallest building in Kuwait City. (Picture credit: Foster + Partners)

world architecture

Every few years, the OPEC Bulletin *does a survey of new architectural projects being unveiled in OPEC's Member Countries. In this issue, the Bulletin's* Scott Laury *reports on the latest innovations to hit the market.*

There continues to be a beehive of activity in the Member Countries as far as new and inventive architectural projects are concerned.

These efforts are seen as an important means of helping bolster tourism while also modernizing urban infrastructure. Many of these projects continue to have a global impact, winning top architectural awards and attracting significant attention from the world media.

In this issue, we cover four magnificent projects that have either been unveiled or will soon be inaugurated. Three of them are in OPEC Member Countries — Kuwait, Saudi Arabia and the United Arab Emirates (UAE) — and the fourth is in Oman, which participates in the Declaration of Cooperation (DoC) and Charter of Cooperation (CoC) between OPEC and non-OPEC nations.

The Bank's design features a highly stylized, modernistic interior.

Foster + Partners

National Bank of Kuwait (Kuwait City, Kuwait)

Kuwait City's already impressive urban landscape recently got a major enhancement in the form of the newly designed headquarters of the National Bank of Kuwait. The project was completed in July 2022.

Rising 300 metres high and with 60 floors, the skyscraper is the second-tallest building in the city after the nearby 412-metre-high Al Hamra Tower.

Its cylindrical, space-shuttle-like form sets it apart amongst its neighbouring structures in the city's Sharq financial district. The building's curved shape opens to the north to minimize sun exposure and provide enhanced energy efficiency.

Symbolically, the design is meant to evoke the lines of a traditional dhow sailing boat, a nod to Kuwait's maritime and pearl diving roots, as well as its heritage as a global trading hub.

Concrete fins are integrated along the building's sunny side, helping to provide structural support, as well as necessary shading from sunlight.

The building's main entrance features an elegant lobby with a dramatic 18-metre high wall of windows. Above it are so-called sky lobbies designed to host meetings and receptions.

On the 18th floor, there is a luxury restaurant with double-height windows and, on the floor above it, a state-of-the-art health club. The 38th floor has a ballroom and an auditorium, while the boardroom is on the 48th floor, and the chairman's club is at the penthouse level.

"The new headquarters for the National Bank of Kuwait (NBK) represents the coming together of an innovative environmental strategy and a diverse programme as a distinctive landmark that stands out on the Kuwaiti skyline," said Stefan Behling, Head of Studio for global architecture firm Foster + Partners, who designed the project. "The building incorporates a sustainable, functional, and iconic design that signifies NBK's unique presence and identity in the city."

The NBK released the following statement on its website outlining the significance of the new headquarters building for Kuwait.

"NBK's management is proud of the completion of the new headquarters, not because it is a high-rise and outstanding building, but because it symbolizes

The skyscraper combines sustainable features and structural innovation to provide energy efficiency while shielding offices from Kuwait's climate.

Foster + Partners

a long history of excellence. It is also a continuation of the sincere efforts started seven decades ago by Kuwaiti merchant families who anticipated the future by establishing a national banking entity that was always an active contributor in promoting national growth and prosperity."

King Abdullah Financial District Metro Station (Riyadh, Saudi Arabia)

Since 1990, the population of Saudi Arabia's capital Riyadh is estimated to have tripled to reach today's 7.8 million people, and it is expected to rise to approximately 8.5 million in the next decade.

To address this rapid population growth and enhance mobility, the city's municipal authorities are planning to open a new metropolitan transit system (metro) that will improve mobility and lessen congestion in the city centre.

Expected to open in 2025, the new metro is poised to serve approximately 3.6 million passengers per day by 2030.

One of the key central hubs will be the King Abdullah Financial District Metro Station, which will connect three metro lines and a new monorail system.

Due to its centralized location in Riyadh's financial district, the city decided to make it the cornerstone of the entire metro project. In so doing, it selected the prestigious architectural firm started by the late Zaha Hadid to design it.

The project ended up being Hadid's last before her untimely passing. She collaborated closely with Patrik Schumacher on the project, and he went on to become the chief architect of Zaha Hadid Architects (ZHA).

The station features a sinuous S-shape design, with a curvy facade that evokes movement and symbolizes the ever-changing state of nature.

The lattice exterior is designed to minimize exposure to the hot Saudi sun and thereby makes the facility more energy efficient.

The station is envisioned to be a highly dynamic public space, connecting passengers through a web of pathways and sky bridges to metro lines, railways, road transport and pedestrian paths.

A rendering of the futuristic King Abdullah Financial District Metro Station in Riyadh.

The Metro's ornate, latticed façade is designed to minimize sun exposure and optimize energy efficiency.

The innovative Atlantis The Royal in Dubai.

Shutterstock

"Predicted rail, car and pedestrian traffic across the site has been modelled, mapped and structured to optimize internal circulation and avoid congestion," said ZHA in a statement released at the time of the project's completion. "The resulting configuration is a three-dimensional lattice defined by a sequence of sine waves, which act as the spine for the building's circulation."

The snake-like latticed exterior was inspired by traditional mashrabiya screens, which can be found in the Middle East and North Africa, and the overall design is said to have been symbolically influenced by the rippling effect of desert winds.

"The overall composition echoes patterns generated by desert winds in the sand, where multiple frequencies and reverberations generate complex repetition in natural formations," ZHA added.

The King Abdullah Financial District is one of several major projects being spearheaded in Saudi Arabia as part of the Kingdom's ambitious Vision 2030 plan.

Atlantis The Royal (Dubai, United Arab Emirates)

In our last architecture round-up published in the November-December 2022 issue, we covered two major projects in the United Arab Emirates — the futuristic corporate headquarters of the Beeah Group in Sharjah and the stunning Opus luxury hotel in Dubai.

Now, in this issue, we provide an overview of the ultra-modern hotel resort called Atlantis The Royal, which is located in Dubai.

The mega-project, which has garnered significant attention in the world of architecture, broke ground in 2016 and opened its doors on 10 February 2023.

With its dramatic coastal location on the outer rim of the Palm Jumeirah, the hotel soars to a height of 185 metres, offering breathtaking views over the Gulf.

The resort comprises a luxury hotel with 795 room, 17 restaurants, a full range of amenities and is said to uniquely feature the world's largest jellyfish aquarium.

The multi-use resort offers stunning Gulf-side vistas.

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The highly unorthodox hotel design features what looks to be a series of building blocks stacked up, one on top of the other, with a connecting sky bridge in between.

Some architectural pundits have termed it a 'side-scraper'. The aforementioned Opus hotel, located in Dubai's Burg Khalifa business district, also features two towers connected by an internal bridge, but it has a more fluid and undulating design.

The voids between the cubes in the Atlantis are a design element intended to provide transparency and help enhance the connection of the structure to the city, the sky and the sea.

The Atlantis was opened with great fanfare, featuring a headline performance by world-renowned pop star Beyoncé.

This was followed by a massive fireworks display and an after-party performance by Swedish House Mafia.

For those in attendance, it was surely a night to remember, and a fitting way to inaugurate Dubai's latest architectural marvel.

During a visit to tour the hotel site in January 2023, His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, emphasized the importance of the project for tourism and the economy.

"We have ambitious growth targets for the sector over the next ten years. The UAE and Dubai seek to build on their deep partnerships with the private sector to strengthen the country's status as the world's most popular destination for international tourists," he said. "As part of our efforts to create a fertile ground for investors, we are keen to foster new growth opportunities in the tourism sector. Our steadfast commitment to building an exceptionally safe and stable environment and a world-class infrastructure over the last few decades has created the foundations for a remarkable future."

Across Ages Museum (Nizwa, Oman)

The Across Ages Museum presents the rich culture and history of Oman, which participates in the DoC and CoC between OPEC and non-OPEC nations.

The Museum was inaugurated in March 2023 by His Majesty Sultan Haitham bin Tarik. It is in Nizwa, one of the Sultanate's oldest cities, roughly 180 kilometre from the capital Muscat. Nizwa is an oasis city and borders the scenic Al Hajar Mountains.

The highly geometric design elements are inspired by the surrounding desert, canyons and mountain landscapes and feature dramatic, pointed triangular spires that appear to jut upward and outward from the desert floor, creating a visually stunning juxtaposition to the surrounding mountains and desert topography.

Inside, the Museum hosts galleries, a library, an auditorium, as well as spaces dedicated to educational, social and research activities.

Its collections are organized into two main sectors, which are called History Hall and Renaissance Hall. Together, they chronicle Oman's rich history from the first settlers to the present day. A special exhibit highlights the tremendous progress and development Oman has experienced since the 1970s.

These exhibits offer user-friendly, immersive technologies to help enhance visitors' experiences.

The Museum has been awarded a spot on the World's Most Beautiful Museums List for 2024 by the prestigious Prix Versailles. The latter, which will celebrate its 10th anniversary in 2024, has selected seven museums worldwide, which are recognized for their "creativity, heritage reflection and sustainability".

These museums will compete for three coveted awards: the Prix Versailles, the Interior Award and the Exterior Award. Winners will be announced at the UNESCO headquarters in late November 2024.

The other museums selected are the A4 Art Museum in Chengdu, China; the Grand Egyptian Museum in Giza, Egypt; the Smritivan Earthquake Museum in Bhuj, India; the Simose Art Museum in Otake, Japan; the Paleis Het Loo in Apeldoorn, Netherlands and the Polish History Museum in Warsaw, Poland.


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Oman's unique, geometrically designed Across Ages Museum at sunset.

The Museum's design is inspired by the surrounding desert, canyons and rugged mountain landscapes.

Exploring oil industry history through petroleum museums

The oil industry is, paradoxically, both global and local in nature. On the one hand, the ubiquity of petroleum and petroleum derived products in daily life means that the oil industry has played a role in the history of every country, yet no two countries have had exactly the same experience with oil. The character that the industry can assume reflects national, even regional dimensions. One country may be renowned for its upstream sector, another for its pronounced downstream sector. Its identity may be more shaped by its status as a consuming nation rather than a producing nation. Some locales are particularly associated with a scientific discovery, an invention, or an innovation. Some countries were prominent producers during the oil industry's earliest decades, whereas others are relative newcomers. This rich diversity of experience offers interesting insights into the development of a global industry and also reflects the national character and identity of individual countries.

Oil museums offer a window into the fusion of both the local and global. Four museums in northern Europe showcase fascinating aspects of this paradigm:

1) Unique rock formations in shale oil production at the Kohtla-Järve Museum of Oil Shale, Estonia.
2) A refinery preserved as it was in the nineteenth century at the Oljeön in Sweden.
3) The discovery of the diesel engine and its application to marine transportation at DieselHouse, Denmark.
4) The development of the offshore industry at the Museum of the Petroleum Industry, Norway.

The OPEC Bulletin files this report.

Period photo of the oil shale region in Estonia.

Kohtla-Järve Museum of Oil Shale, ESTONIA

Oil shale and shale oil

Across Europe, there are regions closely associated with a particular industry that has done much to shape its local character, identity and indeed landscape. Ida-Viru County, one of Estonia's 15 counties, fits this description. Situated in the most north-eastern part of the country, it is associated with mining, particularly oil shale mining.

A word of caution to the reader: the terminology here can be confusing. Oil shale is different to what is sometimes referred to as shale oil, which is also known as tight oil, unconventional oil, or oil that is derived from fracking. Oil shale is a sedimentary rock that is categorized as a 'fossil fuel' and is rich in kerogen. When heated at a high temperature, kerogen can be broken down and releases hydrocarbons. When it reaches its 'oil window,' oil shale produces the liquid known as shale oil, which is similar to petroleum and can be refined into different substances, including diesel and gasoline. Oil shale is found in about 33 countries across more than 60 fields.

Oil shales are classified by their mineral content and depositional history. Kukersite is an oil shale formed from marine environments, mostly deposits of algae and plankton, and is found in the Baltic Oil Shale Basin in Estonia and Russia. Estonia is ranked tenth in the world for oil shale reserves.

Oil shale in Estonian history

In 1788, there was the first recorded mention of 'burning land or stone' in Kohtla, Estonia. News of the find was relayed to St Petersburg, which was then the capital of the Russian Empire, of which Estonia was a part of at that time. Based on several studies by geologists, oil shale proved uncompetitive with coal and sank somewhat into oblivion for a period.

In the second half of the 19th century, a German paleontologist based in the Baltics called Friedrich Schmidt further researched the potential of 'burning stone.' He discovered a layer of rock and named it the Kukrus Deposit, after Kukruse Manor, where he had studied rock composition, hence the name kukersite. Interest in the potential of oil shale ballooned during the coal crisis of 1916 caused by the First World War. Kukersite's main value was for the chemical industry. In January 1917, a proposal was made to Tsar Nicholas II to invest 1.2 million rubles in the construction of the Pavandu/Kohtla mine.

Following the Tartu Peace Treaty between newly independent Estonia and Soviet Russia in 1920, Russian scientists gave development plans for the Kohtla mine to Estonia. The main challenge that remained was to develop the necessary technology to convert the oil shale into shale oil. Despite setbacks, in 1924, the first large oil factory was completed in Kohtla.

Old city of Tallinn, Estonia.

Museum of Oil Shale, Estonia.

Estonian Oil Shale Mining Museum.

The underground railway line at the Estonian Oil Shale Mining Museum.

Exterior of the Estonian Oil Shale Mining Museum.

The products deemed particularly lucrative that could be derived from oil shale included petrol, bitumen, various engine oils, iron lacquer, insecticides, and roof varnish. A petrol factory was established in 1932, but due to the high cost of oil shale extraction, it was not primarily used for domestic consumption. To boost domestic consumption further, the Kunda and Aseri cement factories used oil shale, with all Estonian locomotives and Estonian warships also being converted to oil shale heating.

In the 1920s, oil shale's demand increased for marine boilers as its chemical composition meant it was ideally suited to this usage. Demand from the German navy was particularly acute in the 1930s, as Germany was keen to switch from oil to synthetic oil given the likelihood of a future war.

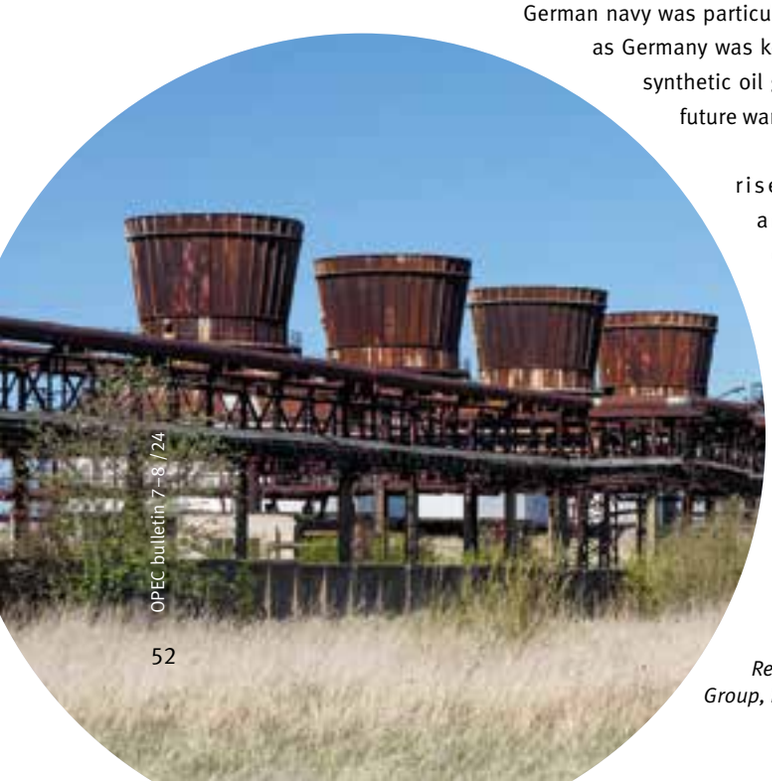
Concurrent with this rise in demand came an improvement in conditions for workers and the establishment of settlements in the area, such as Kivioli, Kohtla-Nõmme and Silamae, which developed along with new factories. The Estonian state also created research centres that focused on oil shale, such as the Tallinn University of Technology and the Natural Resources Institute.

During the Soviet era, the oil shale industries were nationalized, and Estonian specialists assisted in the development of oil shale industries in Russia. New guidelines for the development of the oil shale industry in Estonia were signed in June 1945. Under this decree, the Estonian oil shale factories became subordinate to the Ministry of Petroleum of the USSR. A shale oil gas plant was built in Kohtla-Järve. To transport the gas, the world's first shale gas pipeline was bult in Leningrad between 1947 and 1948.

The development of Kohtla-Järve as a mining town

Growth in the oil shale sector led to an expansion of the workforce. In 1939, the area consisting of the Kiviõli, Kohlta and Järve settlements had a population of 10,000. Towards the end of the war, prisoners of war (POWs) were used to keep the mines operational. In 1945, the region had 28,000 workers. In 1949, German POWs were allowed to return home. This necessitated finding new labour for the shale industry.

Working conditions were arduous in the oil shale district, with high staff turnover. Women and minors were sometimes used to plug labour gaps. The ever-growing population also saw Kohtla-Järve receive city



Refinery Viru Chemistry Group, Kohtla Järve, Estonia.

Samples of oil shale rock from across the world.

Mining equipment and vehicles.

status in 1946, while standards of living improved throughout the 1950s. By 1988, the population of Kohtla-Järve grew to 79,000 people.

A significant event occurred with the construction of the Baltic Thermal Power Plant. This meant that the technology for producing electricity from oil shale was viable. Estonia achieved energy independence because of these developments. Oil shale chemistry research also became a critical factor for regional and national development. Scientists and engineers from the Tallinn Polytechnic Institute, the Tallinn Mining Secondary Vocational School, the Kohtla-Järve Chemical and Mining Secondary Vocational School and Sillamäe Mining Secondary Vocational School, were constantly testing and refining technologies related to oil shale. The UN's first symposium on developing the utilization of oil shale resources was held in Tallinn between 28 August and 4 September 1968.

During the postwar era, production rose dramatically. In 1980, 31.4 million tonnes of oil shale were mined from eleven open-pit and underground mines. Production has declined in recent years. In 2004, Estonia became a member of the EU, and also joined the Nord Pool spot market and the Nordic power exchange. Oil shale still plays a significant role in electricity and heat generation; however, natural gas, wind and solar are increasingly prevalent for electricity generation.

Kohtla-Järve Museum of Oil Shale

Kohtla-Järve Museum of Oil Shale collects documents and artefacts and showcases the history of the oil shale industry and its impact on the region. The Museum was established in March 1966 and remains a unique institution for studying the history of the industry. The Museum has changed locations several times, and now contains 30,000 archival documents and over 900 works of art that celebrate cultural depictions of the industry. Information is offered in English, Estonian and Russian.

The Museum has a range of exhibitions that explore the geology of the oil industry, local history, the impact of the industry on the region and the interconnectedness of industry and regional identity. It chronicles life and leisure activities of workers, with interesting facts about living conditions.

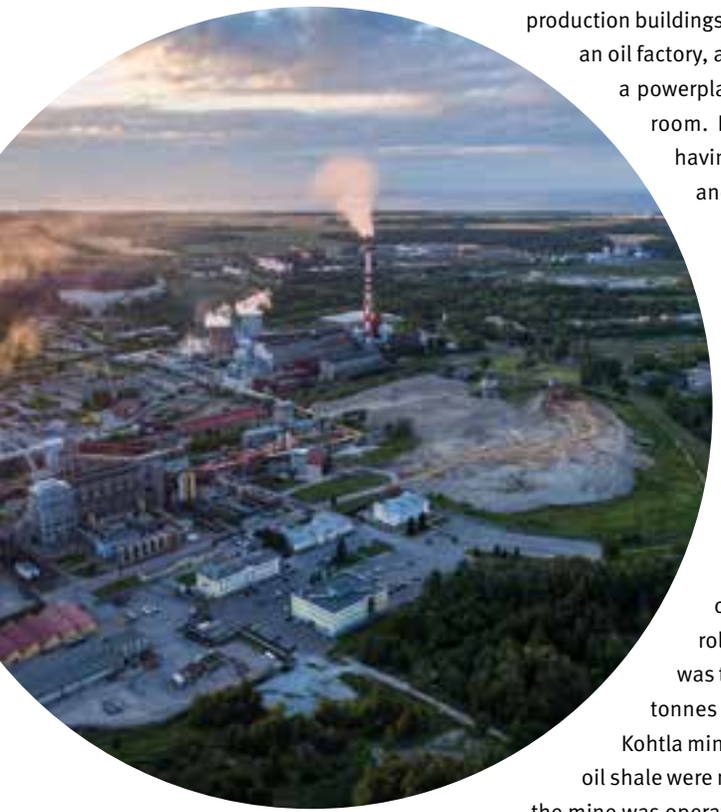
A region transformed

The Museum poses interesting questions about the industry's future, particularly as it relates to its environmental and ecological footprint. Large ocean-going vessels can use oil shale to navigate the seas but the efficiency of this and competitiveness with diesel leaves open questions. Tourism now is intended to be developed in the region. Between 1922 and 1967, as a result of oil shale production, 6.2 million tonnes

of industrial waste gathered on the Kiviõli Ash Hill. In 2013, this was successfully redeveloped and opened as an adventure tourism and ski resort. Mountain biking, buggy trails, excavators for children, electric motorboats, make the area a delight for visitors young and old. A formerly closed off quarry area was rebuilt as the Aidu Watersports centre, which opened in 2020 and organizes world class sporting competitions.

Estonian Oil Shale Mining Museum

In addition to the Museum of Oil Shale, the region is home to the Estonian Mining Museum. It is based on a mine that began production in 1937. The original mine was 17 square kilometers, but eventually saw six production buildings built on the territory, including an oil factory, a milling building, a laboratory, a powerplant, a workshop and a storage room. Its most notable feature was having simultaneous underground and surface mining features.



Oil refinery, Kohtla-Järve city, Estonia, Ida-Virumaa.

Discarded stone was disposed of nearby, making an indelible mark on the landscape. Conditions for workers were dangerous. Shafts ran for a depth of up to 37 meters, depending on the oil shale layers. In the earliest years of the mines, much of the work was done by hand before machines came to play a more prominent role. The golden era for the mine was the 1970s. In 1976, 1.5 million tonnes of oil shale were mined in the Kohtla mine. In total, 50 million tonnes of oil shale were mined here during the 64 years the mine was operational.

The mine stopped operations in April 2001 and became the Kohtla Mining Park. In its first year it welcomed 27,000 visitors. In 2015, a technology museum was established in the old enrichment factory and in 2016 the Mining Park Museum was renamed the Estonian Mining Museum.

Visitors can travel one kilometer on an underground train, explore the working face of the mine, and the typical lunch of a mid-20th century miner can even be purchased and consumed in an authentic miner's canteen. Buildings where oil-bearing shale was separated from other stones are also located on site. The collection of mining equipment and vehicles is fascinating, with an 'esku', a 50 tonne heavy bucket used on a very large mechanical excavator being a particular highlight. The Museum includes 1,000 meters of mining shafts, 100 units of mining equipment, and hosts 25,000 visitors a year. Activities in the vicinity include a roller-skating rink, a winter centre and several hiking trails.

Future Energy Pathways

Estonia's energy situation is unique, and yet many of the challenges that may arise as a result of policies aimed at expediting the energy transition are similar to those faced in other areas in the world. Estonia is the only country in the world where oil shale has historically supplied most of its energy. As recently as 2018, it accounted for 73% of the country's primary energy supply. However, oil shale's carbon intensity, which is higher than coal, greatly hikes the country's per-capita carbon emissions.

Estonia has ambitions to cease electricity production from oil shale by 2035, phase out oil shale in energy production by 2040 and reach climate neutrality by 2050. The EU is offering support for the region that will be greatly impacted by this — Ida-Viru. The EU's Territorial Just Transition Plan saw Estonia receive €354 million in EU grants for the phasing out of oil shale. The Plan involves reskilling and upskilling around 11,000 local workers and jobseekers and seeks to provide labour market mobility solutions for oil shale workers. At the launch of the plan, the President of the European Commission, Ursula von der Leyen, said: "Europe is investing in accelerating the transition to clean energy. And we are making sure no one is left behind. Estonia's Just Transition Plan is providing investments from the EU to support industrial change in the Ida-Viru region. This is an investment in the future of the region, to bring new jobs and new skills for workers, to succeed in the economy of tomorrow."

How this region fares under such plans will provide significant insights into how other regions heavily dependent on a particular industry will be affected by energy transitions plans. The Museum of Oil Shale and the Estonian Mining Museum have done terrific work in chronicling the industry's past, which can help inform future policies.

Oljeön, SWEDEN

An interest in petroleum museums can lead one to unexpected places. Boarding a small jetty called the Petrolia on Lake Åmänningen in Ängelsberg, Fagersta Municipality, Västmanland County, Sweden, to go to the 'Island of Oil' (Oljeön), is certainly one of the most unusual destinations associated with the history of petroleum. Yet few places in the world have a refinery preserved from the nineteenth century, complete with accoutrements and equipment of that era. It is an unusual story but one with fascinating insights into those early and pioneering decades at the dawn of the petroleum era.

August Ålund

The early history of the oil industry was replete with memorable characters with an implacable appetite for learning and experimentation. One such figure was August Ålund, from Vittinge, Sweden, who in the 1870s became obsessed with experimenting on crude oil to check its properties and chemical potential. At that time, Sweden was in the midst of a revolution with regard to lighting. In another part of Europe, in 1853, pharmacist Ignacy Łukasiewicz had distilled kerosene from crude oil and used it to illuminate a pharmacy and an operating theater in a hospital in Lwów.

This was a truly life-altering find. As a New York chemist in 1864 attested, "Kerosene, has in one sense, increased the length of life among the agricultural population. Those who, on account of the dearness or inefficiency of whale oil, were accustomed to go to bed soon after sunset and spend almost half their time asleep, now occupy a portion of the night in reading and other amusements." Demand for kerosene for lighting spurred oil rushes in many parts of the globe in the second half of the nineteenth century.

Ålund believed in the money-making potential of the technology. He also recognized, at the time, the limitations of Sweden's refinery sector. There was one in Södertälje, but it had limited capacity. Ålund was also an experimentalist when it came to refining methods. Against the perceived wisdom of the age, he used super-heated steam to separate high density oils, with 'fatty

View of 'Oil Island' from the train station. The jetty called 'Petrolia' can be seen in the foreground.

The oil refinery, maintained like it was in the nineteenth century.

Equipment of the era.

Stockholm, the capital of Sweden.

oils' being used for lubricants and machine oil, which became more lucrative than kerosene.

Ålund began to consider possible locations for his refinery. He looked for a lake, where boats would have easy access and could berth next to the factory. There was an island on Lake Åmänningen that seemed suitable and was also close to where a railway terminus was being built, which would later become Ängelsberg. Ålund purchased the island, which was approximately 13 acres, for 500 Swedish crowns and an annual fee of two crowns. Construction on the factory began immediately.

Engelsbergs Oljefabriks Aktiebolag

Ålund set up a company, entitled Engelsbergs Oljefabriks Aktiebolag, which built the refinery in 1875 and 1876. It was intended to produce lamp oil, paraffin, lubricants, machine oil and other suitable products. In accordance with Swedish stipulations on safety measures for factory maintenance and production techniques, the distillation unit was separated from the furnaces. With the safety features in place, King Oscar II granted Ålund permission to produce 1,000 barrels of oil per year.

Local people were then hired to assist in production at the refinery. Factory workers, engineers, carpenters, kerosene washers and a warehouse manager were all recruited. Boats loaded with barrels from Pennsylvania sailed up the Strömsholm Canal. The canal was deep enough to accommodate boats of 200 tonnes. The boats berthed at what was now named Oljeön. The barrels were transferred to an oil cellar.

Ålund's priority remained ensuring that all substances from crude oil were used and before long the refinery was producing kerosene, gas oil, lamp oil, machine oil, paraffin and oil for shoe polish or treating leather. The products became omnipresent throughout Sweden and in a fine act of commercialization the logo of the Engelsbergs Oljefabriks Aktiebolag became synonymous with the products. The logo depicts a boy scout standing in front of a scenic landscape,

The interior of the refinery.

The author outside the workers' hut.

with a Swedish flag in his hand, and the Oljeön in the background became widely recognized throughout the country. Ålund's vision had come to fruition. The community would enjoy a boom as a result of the profits of the Oljeön.

Ålund passed away in 1882, but output continued to boom after his death. By 1889, production exceeded 200 tonnes per year, equating to approximately 1,500 barrels of oil, and profits remained robust. There were about 200 employees on Oljeön, in addition to a few seasonal workers, and the island included accommodation for the workers.

Fortunes change

Towards the end of the nineteenth century, several events coalesced that would change the fortunes of the industry at the Oljeön. A protective customs duty, which had previously benefited the industry, was abolished. Crude oil could no longer be imported for processing at a duty-free rate. Competition also intensified. The fatal blow came in the form of an accident whereby an oil tanker berthed in Gäddviken caught fire, with 12 people being killed. Production was severely reduced to producing a small amount of oils for treating leather. The island was sold to a new company called 'The Oil Factory of Engelsberg Ltd' in 1906. For a few decades, a small amount of production of leather oils and grease was produced and sold. In 1927, it was decided to close the factory.

Preserving history

The businessman and industrialist Consul-General Axel Ax:son Johnson took over as the new owner of the Oljeön, hailing from one of Sweden's most famous family-businesses. He had a keen interest in industrial heritage and technology. He acquired the ironworks in Engelsberg, which is now a UNESCO World Heritage site, and the Oljeön was of similar great personal interest. In the 1970s, Sweden's Central Board of National Antiquities declared the factory on Oljeön and surrounding buildings as listed buildings. Extensive restorative work has taken place over subsequent decades to preserve many aspects and retain the nineteenth century feel of the site.

The Oljeön offers a glimpse of those early formative years of the oil industry, before the birth of the automobile era. Very few refineries from this period survive. This makes the Oljeön truly one of a kind. Its beautiful setting amid scenic Swedish lakes and forests also makes it well worth a visit.

The old oil refinery at Oljeön island in Ängelsberg.

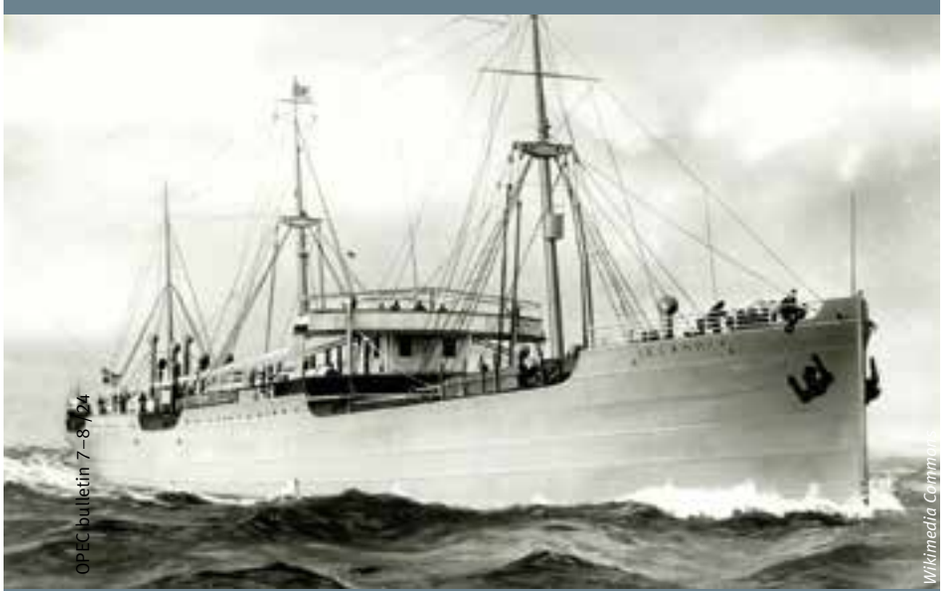
Equipment used in the 19th century as part of the refining process.

Cannister with the Engelsbergs Oljefabriks Aktiebolag logo.

The famous Engelsbergs Oljefabriks Aktiebolag logo.

Exterior of DieselHouse.

B&W 2000 is 24.6 meters long, 12.5 meters high and weighs 1,400 tons.



The MS Selandia, an early diesel-powered ocean-going vessel constructed in 1911 in Copenhagen, Denmark. Photo by an unknown photographer.

Wikimedia Comm

DieselHouse, DENMARK

An innovation or discovery can set off chain reactions with mass unforeseen consequences. Rudolf Diesel's invention of the diesel engine ranks high in that regard. It would lead to the first use of a diesel engine in a marine vessel – a development closely associated with the city of Copenhagen, Denmark. DieselHouse in the Danish capital is a museum dedicated to tracing the history and role of the diesel engine, particularly in marine history.

Converting to oil

Dan Yergin's 'The Prize' remains the seminal work on the history of the oil industry. Its opening page begins with one of the critical reasons why 'Black Gold' replaced 'King Coal' as the dominant fuel of the twentieth century, and remains an integral factor in all aspects of civilization in our current age. It was the decision by the British First Lord of the Admiralty, Winston Churchill, to convert the Royal Navy from coal to oil. Yergin states that "One of the most important and contentious questions he [Churchill] faced was seemingly technical in nature, but would in fact have vast implications for the twentieth century."

The navy's conversion was debated intensely throughout the 1910s and took place against the backdrop of a naval arms race between Germany and Britain for supremacy at sea. Every advantage in the capabilities of their respective navies was coveted.

Oil's advantages over coal were multiple, allowing for higher speeds for battleships, as well as greater haste in getting up to speed. It facilitated a greater radius of action. As Yergin wrote, "It permitted refueling at sea (at least on calm seas), without occupying a quarter of the ship's manpower in the effort, as was the case with coal. Moreover, it greatly reduced the stress, time, exhaustion and discomfort that went with coaling and cut the required number of stokers by more than half."

Several factors influenced Churchill's decision to convert to oil, including a visit to the MS Selandia in February 1912. This ship was revolutionary in many pioneering ways. Her revolutionary nature can be seen

from a first glimpse of a photo – unlike other powered vessels of the age, the MS Selandia did not have a funnel; instead, exhaust from her engines escaped through exhaust ports in the mast-aft. This was because she was the most advanced ocean-going diesel motor ship of her time.

That is the focus of a unique and fascinating petroleum museum in Copenhagen: DieselHouse. The MS Selandia was built in Copenhagen by the outstanding Danish engineering firm, Burmeister and Wain (B&W). DieselHouse opened in 2006 in the former machine hall of the HC Ørsted power station in Copenhagen's southern docklands, as a collaboration between the MAN Diesel company and the city museum.

DieselHouse celebrates and explains the role of the diesel engine, particularly the marine diesel engine, over the course of a century of development. B&W gained the Danish rights for the engine patented by Rudolf Diesel in 1895. Diesel's engine has been described by the historian Keith Fischer in the following way, "Rudolf Diesel's new type of internal combustion engine was more of a workhorse than the greyhound-like petrol engine, and diesel engines began to be used for their reliable output of power for mechanical work and electricity generation. While petrol engines were good for propelling small motorboats, the heavyweight diesel engine appeared more suited for larger marine vessels. Diesel engines were fueled by heavier grades of oil than the more volatile and explosive petrol, so they began to be adopted for powering submarines."

From Rudolf Diesel's pursuit of efficiency to the MS Selandia

There are many themes running through the displays at DieselHouse, but one relates to engineering discovery in pursuit of efficiency gains. Just as James Watt's invention of the Watt steam engine in the late 18th century heralded the replacement of animals and humans undertaking heavy work with steam power, the 19th century saw scientists and engineers exploring how to improve on this efficiency. Rudolf Diesel undertook experiments in this regard in the 1890s to explore how the efficiency losses from the steam engine's operation principle could be overcome.

Diesel was born in 1858 in Paris to German parents. As early as 14, he knew he wanted to become an engineer. He received a scholarship to the Royal Bavarian Polytechnic of Munich, which he accepted against his parent's wishes. His great passion was research into thermal efficiency, particularly fuel efficiency. In his letters describing his work, he wrote of "fighting the steam engine." His goal was to "create an engine which will leave the steam engine [in] the dark." This was an era when steam engines were only about 10% efficient and wasted most of their fuel's energy.

In 1890, Diesel moved to Berlin. Two years later, he was granted a patent on an engine he developed to address the low combustion efficiency deficiency of steam engines, achieving about 34%. Over the next decade, Diesel entered into licensing agreements for his internal combustion engine (ICE) with several manufacturers in the western world. One such agreement was with B&W for the Danish patent.

B&W set to work almost immediately about applying the diesel engine for commercial purposes. In 1904, the first B&W engine for use on land was put into operation — now on display at DieselHouse. In 1910, B&W tested a reversible engine for use on land. In the same year, Rudolf Diesel visited Copenhagen and commended Danish engineers for tweaking his invention to enable its practical use in a sea-faring vessel. Preparation was beginning for the MS Selandia, the most sophisticated ocean-going motorized ship of her age.

The MS Selandia caused a sensation when it was launched. The world's media was fascinated by an ocean-faring motor ship of this scale, size and luxury. Commentators present for the maiden voyage wrote of its beautiful and noiseless experience. It was the beginning of the use of the diesel engine in commercial shipping, something that would have profound implications for the rest of the century.

Copenhagen, Denmark.

Diesel fuel: critical role for modern civilization

One of the most intriguing displays at DieselHouse is an exhibition on the ways the diesel engine has affected

The engine known as Holeby No. 1.

The logo of Burmeister and Wain (B&W), a large Danish shipyard and leading diesel engine producer, founded in 1865.

modern civilization. With the efficiency gains of a diesel engine, larger and larger ships could transport more goods, creating enormous economies of scale. This essentially underpins the modern trading system. The larger the ship, the bigger the loading capacity, thereby making it cheaper to transport individual goods. The diesel engine's compact design allows more room for goods onboard. Further developments in modern shipping saw the tanker vessel tonnage double eight times from 1948 to 1960.

A display board in the museum notes, "The diesel engine is the core of the many indispensable machines in demanding businesses such as agriculture, forestry, mining and entrepreneuring." The display goes on to outline the role of diesel-powered machines such as tractors, trucks, agricultural equipment and mining equipment.

Another display board notes, "The diesel engine was important for the distribution of electric power in the beginning of the 20th century. The engine's reliability and flexibility make it the preferred power source in small rural power stations and in small Danish towns." This changed in Denmark with the emergence of the high-voltage system grid from the 1920s onwards. There are, however, small islands in Denmark like Anholt and Christiansø that still have diesel-driven AC power stations.

Engines on display

DieselHouse has a range of engines on display, ranging from steam to larger industrial diesel engines, outlining the evolution of engine design. The B&W No. 1, DM140, was an engine produced by the company in 1904 that was used to supply lighting for factories and contains a publishing shaft to pull machines. It remains fully functional and is operational for the public once a week. The Museum's pièce de résistance is the B&W 2000, commissioned in 1933 and used for power generation. It stands 12.4 meters tall and is 24.5 meters long, weighing 1,400 tonnes. On days the Museum is open, the machine is turned on, showing the majesty and strength of the machine, which generated electric power for Copenhagen for 30 years. For more than 30 years, it also held the crown as the world's largest diesel engine.

As DieselHouse's website states, "B&W 2000 is an eight cylindret, double-acting, longitudinally flushed two-stroke engine." Its big advantage over boiler-driven steam turbines was that it can deliver power to the generator in just a few minutes and supply power in case of an emergency. It was taken out of daily use in the late 1960s and disconnected from the grid in 2004. It is a spectacular sight when the engine is demonstrated to the public and the author was fortunate enough to see this mechanical marvel in action.

Displays in DieselHouse showcasing equipment used in ship manufacturing.

Conditions for workers are also chronicled in the exhibition.

How does a diesel engine work?

The diesel engine is a combustion engine powered by self-igniting fuel. In a two-stroke diesel engine, air is pressurized, causing the temperature and pressure to rise as molecules are compressed. The temperature then rises so much that the diesel oil self-ignites. With combustion, the temperature and pressure in the cylinder rise further, so that the piston is pressed back and provides mechanical support to the crankshaft. Diesel engines are used both as a stationary power machine and for propelling ships, locomotives and cars.

In several aspects, the diesel engine differs from the petrol/gasoline engine. In the petrol engine, spark plugs in the compression chamber are necessary to ignite the fuel/air mixture, which is known as the Otto cycle. In a diesel engine, there is a significantly higher compression ratio. This is necessary to facilitate the sufficiently high temperature to self-ignite the fuel.

A further floor of DieselHouse showcases photographs and other artefacts, shedding light on the history of B&W, industrial relations in Denmark and workers' conditions. It is a fascinating insight into the long evolution of the world's trading system and the technology and modes of transportation that support it. Small wonder DieselHouse prides itself in being 'an experience centre for diesel technology'.

Railway station in Copenhagen.

Museum of the Petroleum Industry, NORWAY

The emergence of the oil industry in Norway has been one of the most momentous developments for the energy sector in European history. A large museum in Stavanger, the Museum of the Petroleum Industry, explores this key chapter in the industry's history. One of the world's few purpose-built oil museums, it showcases the technology of oil exploration and pumping, conditions for workers and the transformative effects of the industry on Norwegian society.

Remote chances of oil being discovered in the North Sea

The late 1950s saw two events that were significant for the development of the oil industry in the North Sea. On 24 February 1958, the first UN conference took place on the law of the sea. This sought to develop a legal regime for the world's oceans. Prompted by this, the Geological Survey of Norway (NGU) was commissioned to assess the likelihood of finding raw materials on or beneath the country's continental shelf. The NGU wrote, "The chance of finding coal, oil or sulphur on the continental shelf off the Norwegian coast can be discounted."

In August 1959, Shell and Esso discovered a vast gas field in Groningen, the Netherlands. This proved to be one of the world's largest gas fields. Realizing commonalities between the geology of the Netherlands and the North Sea, oil companies began to explore adjacent waters. In 1962, the first seismic investigations by Norwegian scientists were conduced on the continental shelf, which noted the sedimentary rock that had the potential to contain both oil and gas.

In 1963, Norway declared its sovereignty over offshore submarine mineral resources, with the Government having the right to grant permits to companies for exploring or exploiting such deposits. In 1965, on the basis of the Law of the Sea, Norway and the UK formally agreed to divide the North Sea down the middle between them.

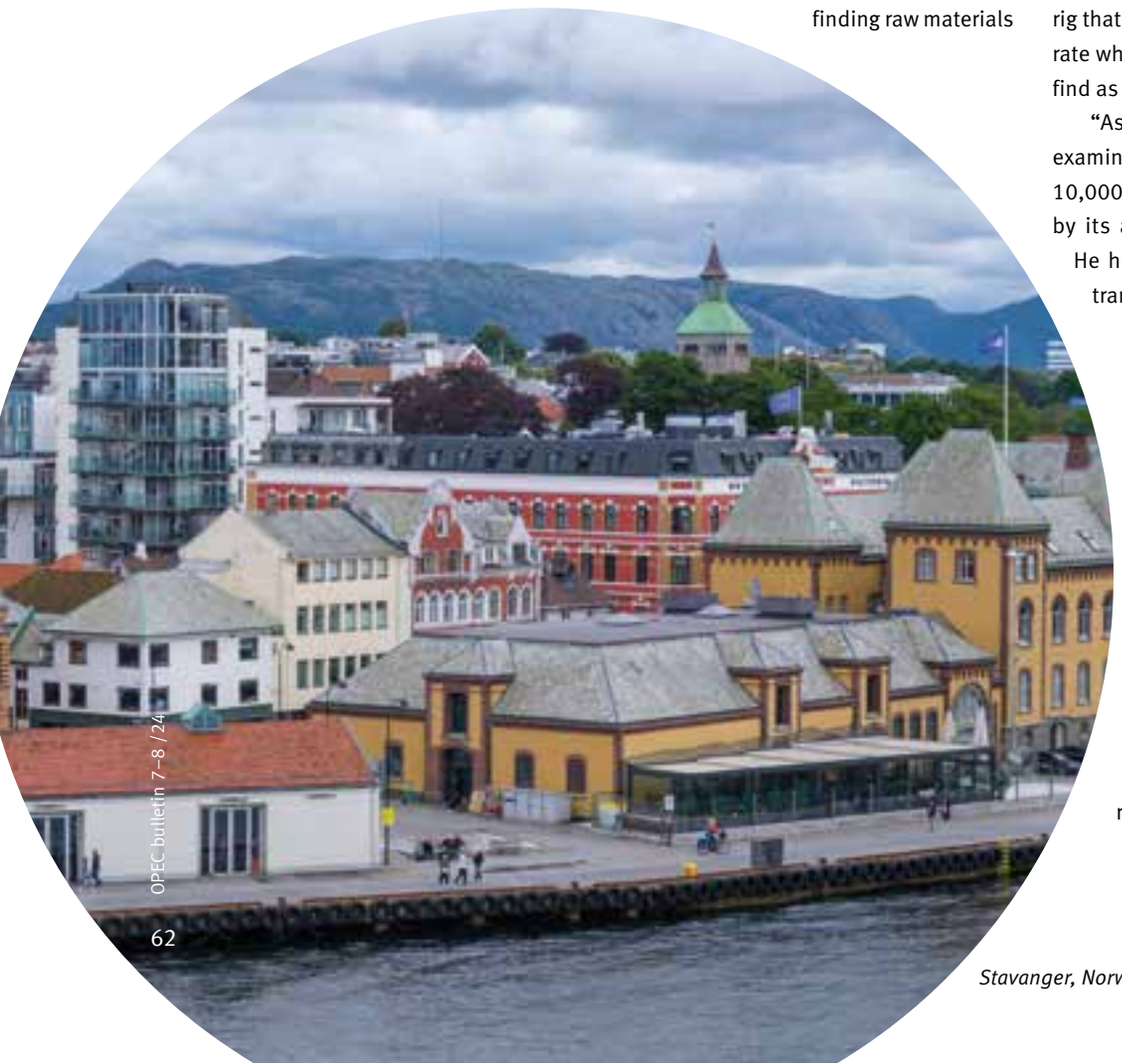
One company involved in exploring the North Sea was Phillips Petroleum from Bartlesville, Oklahoma. After a succession of dry holes, the company was on the verge of terminating its exploration progamme. In late 1969, it decided to give it one last go. Phillipps had one rig that it had on charter, for which it had to pay a daily rate whether it drilled or not. Dan Yergin describes the find as follows:

"As the drilling superintendent on the Ocean Viking examined an oil sample brought up from a depth of 10,000 feet beneath the seabed, he was quite amazed by its appearance, which bespoke high quality….. He held up the oil; it had a golden sheen, almost transparent, but definitely almost like gold."

The date of this find has gone down as 25 October 1969, in Block 2/4 in the Ekofisk field. This was the 38th well to be drilled in the Norwegian North Sea, and it would change the country forever.

Ten commandments for the oil industry

In a forward-looking move, Norway developed guidelines that would secure "national management and control of all activities on the Norwegian continental shelf." These became known as the ten commandments and read as follows:



Stavanger, Norway.

Exterior of the Norwegian Petroleum Museum.

Museum displays.

A scale model of a rig.

1. National supervision and control must be ensured for all operations on the Norwegian continental shelf (NCS).
2. Petroleum discoveries must be exploited in a way which makes Norway as independent as possible of others for its supplies of crude oil.
3. New industry will be developed linked to petroleum.
4. The development of an oil industry must take necessary account of existing industrial activities and the protection of nature and the environment.
5. Flaring of exploitable gas on the NCS must not be accepted except during brief periods of testing.
6. Petroleum from the NCS must as a general rule be landed in Norway, except in those cases where socio-political considerations dictate a different solution.
7. The state must become involved at all appropriate levels and contribute to a coordination of Norwegian interests in Norway's petroleum industry as well as the creation of an integrated oil community which sets its sights both nationally and internationally.
8. A state oil company will be established which can look after the government's commercial interests and pursue appropriate collaboration with domestic and foreign oil interests.
9. A pattern of activities must be selected north of the 62nd parallel which reflects the special socio-political conditions prevailing in that part of the country.
10. Large Norwegian petroleum discoveries could present new tasks for Norway's foreign policy.

In 1972, Statoil, the Norwegian State Oil Company came into being. This is now known as Equinor. Experts from other parts of the world were hired as Norway developed its industry, including some nationals from OPEC Member Countries. The city of Stavanger was transformed as it became the centre of the industry, with Statoil and the Norwegian Petroleum Directorate establishing their headquarters in the city.

Expansion of the industry ensued in subsequent decades, ensuring that Norway now produces oil and gas from 62 offshore fields. The Norwegian Oil Fund, its sovereign wealth fund, is worth approximately $1.6 trillion in assets. About 300,000 people are employed in the industry in Norway.

Worker conditions on offshore rigs

The Museum of the Petroleum Industry is an interactive monument to the remarkable story of the industry in

View from the Norwegian Petroleum Museum.

Norway. It was opened in 1999, and when seen from the sea, it is designed to look like a small oil platform. The Museum displays artefacts, films, audio-visual material and other documents that demonstrate the journey the industry and the country has been on over the last six decades.

One of its many interesting themes is the difficult conditions for workers in the offshore industry. As the industry evolved, drilling rigs had to work at unprecedented water depths, and sometimes drill a further four miles under the seabed. All of this equipment and the workers manning it had to function in some of the most inhospitable sea conditions in the world and horrendous weather conditions. The weather can change dramatically, three or four times a day. Waves can reach fifty feet and storms can brew within hours. Many of the displays in the Museum showcase these conditions for workers.

The biggest industrial disaster in Norway's history occurred in March 1980 and is known as the Kielland disaster. A floating accommodation platform capsized in the North Sea oil field. More than 120 people were killed. It led to new regulations being introduced for safety and work regulations offshore, and had a deep impact on the Norwegian national psyche. Artefacts recovered from the disaster are a key part of the Museum.

Purpose built museum

A tour of the Museum begins with a short film called 'Oil Kid', which provides an overview of the history of the industry and its impact on ordinary lives for many Norwegians. This is followed by several displays that document the key timeline of events in the history of the industry. An interesting display outlines the geological formation of oil and its prevalence on the Norwegian continental shelf. There is also a fascinating display on the importance of oil for the Norwegian economy.

For the technologically inclined, visitors can explore displays on drilling parts designed to penetrate different types of rock. Pipelines are covered by another segment. Insightful links are made about the transferability of Norway's long tradition of maritime exploration to the oil industry. The technological evolution of offshore platforms is displayed in an engaging and innovative manner. Various displays cover the issue of safety, as well as the vehicles that are essential for the smooth functioning of the industry, namely lifeboats, helicopters and remotely operated vehicles. There is an activity area for children, a restaurant and a large collection of documents, making this one of the largest and most extensive oil museums in the world. What is particularly impressive about this Museum is the depth of information covered; with something both for industry specialists and complete oil novices.

Importance of industrial heritage

The history of industrialization is an essential part of humanity's shared heritage. This is particularly the case with the oil industry, where technological progress or engineering breakthroughs in one part of the globe can have ramifications and legacies in other regions. In their respective ways, the oil museums scattered across Estonia, Sweden, Denmark and Norway, inform visitors about the ongoing interaction between industry and society, and the evolution of the oil industry in Europe over the course of a century and a half. Preserving that history contributes to future generations appreciating the story of energy and can inform discussions on future energy pathways. Fundamentally, the history of oil is global in scope. It is certainly an exciting and dynamic story; one worth telling.

Offshore worker's equipment.

After solid Copa showing, Venezuela shifts focus to World Cup 2026

Venezuela finished the ***Copa America 2024*** *atop its group, advancing to the quarter-finals where it lost a hard-fought battle with Canada that was decided in a penalty shootout. Despite this temporary set-back, the Vinotinto continue to rise in stature and are setting their eyes on the next World Cup tournament, which will take place in 2026. The* OPEC Bulletin*'s* ***Scott Laury*** *provides this recap of the Copa America and an overview of Venezuela's road to reaching the next World Cup.*

Team Venezuela posing for a team photograph before the Copa America quarter-final against Canada.

The 2024 Copa America was held from 20 June to 14 July, celebrating its 48th anniversary as South America's most preeminent football championship.

The event was organized by the Confederación Sudamericana de Fútbol (CONMEBOL) and co-hosted by the Confederation of North, Central America and Caribbean Association Football (CONCACAF) in the United States (US).

Themed by organizers as 'Rocking the Continent' or 'Vibra el Continente' in Spanish, the tournament featured 16 teams — ten from CONMEBOL and six from CONCACAF — competing at 14 venues around the US.

Argentina, which beat Colombia 1–0 in the final, will advance to compete in next year's CONMEBOL-UEFA Cup of Champions, also familiarly called the Finalissima, against Euro 2024 winners Spain.

These will be followed by the 2026 FIFA World Cup, which will be jointly hosted by Canada, Mexico and the US from 11 June to 19 July 2026. Venezuela is determined to qualify for their first-ever World Cup.

Copa 2024 group stage

During the group stage, Venezuela competed against Group B opponents, Ecuador, Jamaica and Mexico.

The first match took place on 22 June with Venezuela taking on Ecuador at Levi's Stadium in Santa Clara, California. Jhonder Cádiz and Eduard Bello scored second-half goals to propel the Vinotinto to a 2–1 victory.

Riding the momentum of the Ecuador victory was a key factor in Venezuela's next match, where it triumphed over CONCACAF powerhouse Mexico on 26 June.

This important match-up took place in front of a raucous crowd at Los Angeles' SoFi Stadium. In a close and hard-fought battle, veteran player, Salomón Rondón, scored a penalty in the 57th minute to secure a 1–0 win for the Vintotinto, helping them advance to the quarter-finals.

"I'm happy that we were able to give some joy to the people in Venezuela, we played for that, but we need to remain calm and with our feet on the ground," Venezuelan coach, Fernando Batista, said jubilantly after the match. "We are going to enjoy this tonight, but tomorrow we are going to be focused on Jamaica."

In their last match of group play, the Vinotinto looked strong in a 3–0 victory over Jamaica. Eduard Bello was the first to score in the 49th minute, heading in a beautifully executed cross from Jon Aramburu. This was Bello's second goal of the tournament.

Venezuela's forward Eduard Bello in action against Ecuador.

The second goal came in the 56th minute as Salomón Rondón scored using his left foot following a pass from Yangel Herrera. This was the captain's second goal of the tournament.

Finally, Eric Ramírez put the icing on the cake with an impressive goal in 85th minute following a skillful through-pass from Kervin Andrade.

GROUP B
Final standings

1. VENEZUELA
2. ECUADOR
3. MEXICO
4. JAMAICA

Quarter-final match

The fact that Venezuela ended up undefeated in group play allowed it to forego having to face tournament favourite and Copa America defending champion Argentina in the quarter-finals.

Instead, they took on Canada, which finished as runner-up in Group A.

The match was held on 5 July at AT&T Stadium in Arlington, Texas. Canada got on the board first with a goal in the 13th minute from Jacob Shaffelburg. Venezuela continued to fight and equalized with what was arguably the goal of the tournament.

In the 64th minute, Venezuelan defender Jon Aramburu cleared a ball from the team's penalty box and sent it long to Rondón who fought Moïse Bombito for possession near midfield.

Forward Salomón Rondón, gains control of the ball during the match against Mexico.

Venezuela's Jon Aramburu battles Canadian Alphonso Davies for control of the ball during the quarter-final.

Rondón gained control of the ball and seeing that Canada's goalkeeper was out too far, launched a spectacular long shot over the goalkeeper's head and into the net, tying the match at 1–1.

The match ended a 1–1 draw in regulation time, which sent the teams directly into a penalty shootout. This was in accordance with CONMEBOL rules, which does not call for overtime periods, unlike other international tournaments.

Ismaël Koné of Canada scored in the sixth round of the shootout after a key third save by Canadian goalkeeper Maxime Crépeau, securing a 4–3 win on penalties. Canada then advanced to the semifinal match against Argentina, which they lost 0–2.

World Cup aspirations

Venezuela has made its intentions clear to the world: it intends to qualify for the next World Cup, a potential first in the nation's history.

This goal was reiterated in remarks by team coach Fernando Batista after the penalty shootout concluded.

"I think that we need to continue working and to set an objective for ourselves," Batista stated in Spanish with an English interpreter after the match. "This is a long process. We have a huge dream that we're going for. All Venezuelans want to qualify for the World Cup, and the Copa America gave us the possibility of strengthening our squad."

The road ahead to qualification will not be easy by any means, but Venezuela's recent successes on the global football stage have raised hopes for success.

There is no doubt, a World Cup qualification would provide a perfect launching pad to move the sport to the next level in Venezuela and globally in an otherwise baseball-crazed Caribbean nation.

The road to qualification

According to the Federation Internationale de Football Association (FIFA), the Vinotinto have a good chance to qualify.

Its website states that the country "certainly looks to be well placed after winning two and drawing

Eric Ramírez of Venezuela shoots a goal in the match against Jamaica.

three of their last five qualifiers. That run, which has included victories over Paraguay (1–0) and Chile (3–0), has taken them up to fourth in the South American standings and increased expectations of an end to that long, agonizing wait."

CONMEBOL qualifying for the 2026 World Cup began on 7 September 2023 and is scheduled to end in September 2025. Venezuela will take on other teams in the South American federation, whose members include Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru and Uruguay.

In a note of optimism, coach Batista said that the team is ready for the long ride to qualification, and that the passion of the Venezuelan fan base will help them achieve their goal in the months to come.

"We have had to show belief, be competitive, and play as equals, while also taking the necessary precautions that each game requires," the coach said. "Today we are doing well, but we are keeping our feet on the ground, because we are only 30 or 40 per cent through [the qualifying campaign]. This start is exciting though. All the Venezuelan people are happy."

Mano, tengo fe!

An expression of Venezuela's team spirit and optimism was developed through a meme on social media after Venezuela tied Brazil 1–1 in a World Cup qualifier on 12 October 2023.

The draw was a huge achievement, putting an end to Brazil's historic 15-game World Cup home qualifier winning streak, and massively energizing the Vintotinto and its supporters.

The meme shows an image of Hollywood actor Vin Diesel sporting a Venezuelan football jersey and a confident and positive gaze. With an outstretched arm, he appears to be shouting out the expression: 'Mano, tengo fe', or 'Brother I believe' in Spanish.

The meme went viral, and now it can be heard wherever the team plays. It also continues to be written across some of the mega-banners flown in the fan sections.

The country is starting to believe.

Vamos Venezuela!!!

All photographs are credited to Reuters.

Arch of Septimius Severus at Leptis Magna.

Leptis Magna:
A Libyan legend

Leptis Magna was a prominent city of the Carthaginian Empire and Roman Libya, located at the mouth of the Wadi Lebda. With its towering columns, prominent harbour, cobbled streets, storehouses, shops and residential districts, it is often described as one of most beautiful cities of the Roman Empire. It is a Libyan legend and today stands as one of the best-preserved Roman sites in the Mediterranean.

Leptis Magna is one of Libya's crown jewels in terms of its ancient ruins and historical sites. A truly mesmeric place, it is a must visit UNESCO World Heritage Site on the country's Mediterranean coast that has been called by some as the 'Rome of Africa'.

The city is believed to have been originally founded by the Phoenicians in the 7th century BC, before later being settled by the Carthaginians towards the end of the 6th century BC. After the defeat of Carthage in 146 BC, it became part of the Roman Empire. Under Emperor Trajan's reign (98–117 AD), the city was designated Leptis — receiving the rank of 'colonia' — and its inhabitants were granted full rights of citizenship.

The emperor Septimius Severus (reign 193–211 AD), who was born at Leptis, then conferred upon it legal freedom from property and land taxes and became a great patron of the city. Under his direction an ambitious building programme was initiated, including the creation of a new forum and the rebuilding of the docks and harbour, with Leptis said to become second only to Carthage as the most important city in Roman North Africa.

Wikimedia Commons

Etching of a portrait bust of Roman emperor Septimius Severus.

The remnants of the marketplace at Leptis Magna.

Roman instability and decline

With the crumbling away of the Roman Empire in the centuries that followed, Leptis Magna began to decline, and by the middle of the fourth century, it is said that large parts of the city had been abandoned and fallen into ruin.

In 439, Leptis Magna and the rest of the cities of the region called Tripolitania fell under the control of the Vandals when their king, Gaiseric, captured Carthage from the Romans and made it his capital. It is said that Gaiseric ordered the city's walls demolished so as to dissuade its people from rebelling against Vandal rule.

The amphitheatre.

Mosaic depicting arena fighting from the 1st century, found in the Villa Dar Buc Ammera.

20th century

In the centuries that followed, Leptis Magna largely lay buried by sand. It was not until the 1920s that excavations of the site began, when the Libyan Antiquities Service, and others, began work to preserve and study the site.

In the period since, teams of archaeologists have uncovered one of the best preserved Roman cities. This includes arches of Antoninus Pius, Marcus Aurelius, Septimius Severus, Tiberius and Trajan, the Basilica of Severus, temples and villas, baths, churches, and a host of statues.

The collonaded streets are a wonder to behold, the marketplace offers up insights into a world of trading long ago, and the relatively intact amphitheatre is believed to have been able to accommodate over 15,000 people. Not far from the city is the Villa Dar Buc Ammera, which contains large mosaics dedicated to the fights in the arena of Leptis Magna.

Stepping back in time

Leptis Magna not only captivates with its historical significance, it also mesmerizes with its breathtaking natural landscapes and vistas, and its backdrop of the Mediterranean coastline.

There is also an on-site museum at Leptis Magna, which offers insights into the history of this once great city and its remarkably well-preserved Roman architecture.

All pictures, unless otherwise credited, are courtesy of Shutterstock.

Detailed stone head seen among the ruins.

OPEC Secretary General's diary

In the course of his official duties, ***Haitham Al Ghais****, OPEC Secretary General, visits, receives and holds talks with numerous dignitaries. The following records some of those events.*

25 June: Al Ghais (l) held a bilateral meeting with Andrés Rebolledo-Smitmans, Executive Secretary of OLADE at the OPEC Secretariat in Vienna.

1 July: Al Ghais welcomed Birame Soulèye Diop, Minister of Energy, Petroleum and Mining of the Republic of Senegal to the OPEC Secretariat.

3 July: Al Ghais (l) received Debora Lepre, Ambassador and Permanent Representative, Permanent Mission of Italy to the International Organizations in Vienna.

31 July: Al Ghais (r) met with Claudia Salerno Caldera, the newly appointed Ambassador of the Bolivarian Republic of Venezuela to the Republic of Austria, and Permanent Representative to the UN Vienna.

Visits to the Secretariat

Students and professional groups wanting to know more about OPEC visit the Secretariat regularly in order to receive briefings from the Public Relations and Information Department (PRID). PRID also visits schools under the Secretariat's outreach programme to present on the Organization and the oil industry. Here we feature some snapshots of such visits.

12 June Students from the Europäische Akademie Nordrhein-Westfalen, Germany.

21 June Students from VWI-ESTIEM Karlsruhe e.V., Germany.

24 June Students from HLA Baden, Austria.

24 June Students from HTL Wien West, Austria.

28 June Delegates from Latin America participate in a tour organized by the Konrad Adenauer Stiftung.

4 July Students from the Andrássy University Budapest, Hungary.

10 July Members of the German Armed Forces.

16 July Students from the Vienna University of Economics and Business.

17 July Delegates from the Europäische Akademie Bayern, Germany.

7 August Students from the Indiana University Northwest (IUN), USA.

Resolving the trillion dollar question

Climate Solutions Week

The OPEC Fund *launches the Climate Solutions Week as a new platform for development partners to take the next step in fighting global warming.*

A global crisis requires a global response. The OPEC Fund launched its first Climate Solutions Week in April with a series of high-profile remarks by senior representatives of development institutions. President Abdulhamid Alkhalifa urged partners to focus their efforts: "Although the international community has raised ambitions and targets, delivery remains far from what is needed," he warned.

How to close the climate finance gap has indeed become the trillion dollar question of our times. "The climate crisis is the world's most pressing challenge," said Fatou Haidara, Deputy to the Director General of the United Nations Industrial Development Organization (UNIDO). According to expert estimates, US$8 trillion ($ tn) are currently needed every year, a staggering amount that is set to rise to $10 tn by 2030.

Rafael Mariano Grossi, Director General, International Atomic Energy Agency (IAEA).

Urgent action is needed to avoid further damage and reverse trends such as rising global temperatures. "Humanity is currently facing a triple environmental crisis that seriously threatens our survival on earth," said Gabon's Minister of Environment, Climate and Human-Wildlife Conflict, Arcadie Svetlana Minguengui Ndomba epse N'zoma. "This crisis is characterized by a loss of biodiversity, pollution and climate change."

One response to these challenges is technology. Rafael Mariano Grossi, Director General of the International Atomic Energy Agency (IAEA), said: "We need intelligent and integrated cooperation, where we can align different technologies so that they can be deployed in the most effective and meaningful way." As an example he mentioned recent activities by the IAEA to fight soil degradation in Africa.

The continent's fate is a telling example that climate change is also a question of fairness and equity. Africa accounts for the smallest share of global greenhouse gas emissions at just 3.8 per cent, yet is worst affected by the impact of climate change and has the fewest resources to tackle the crisis: "We need an approach that involves shared responsibility, a firm commitment to equity and environmental justice, the enhancement of natural capital and taking into account our specific characteristics as a developing country," Minister Minguengui Ndomba epse N'zoma warned.

But Africa is not only facing huge challenges. "Africa has the highest potential in terms of renewable sources of energy," said Francesco La Camera, Director-General of the International Renewable Energy Agency. He reported huge momentum towards renewables, which last year accounted for 87 per cent of all newly installed capacity. However, distribution remains unequal: Only 14 per cent of new renewable facilities were added in developing countries.

Austria's Minister for Climate Action, Leonore Gewessler, joined the calls for urgent action: "History will judge us," she reminded participants. She hailed the outcomes of the UN climate change conference COP28 in Dubai and the "transition away from fossil fuels." While she lauded the commitment of producers of traditional forms of energy carriers, she urged more: "You are not in the centre of the energy transition."

Following high-level introductory sessions, the Climate Solutions Week later broke into a series of specific panels and workshops. Participants from, among others, the African Development Bank,

Leonore Gewessler, Austria's Minister for Climate Action.

Asian Development Bank (ADB), UNIDO, World Food Programme, Sustainable Energy for All, Clean Cooking Alliance and International Fund for Agricultural Development, discussed clean cooking and ways to triple renewables by 2030 under the slogan: "Making it happen."

The final two days were dedicated to a joint OPEC Fund/ADB workshop on nature-based solutions. Both institutions launched a Nature Solutions Finance Hub at COP28 in December 2023 to scale up the flow of finance into conserving and protecting nature and biodiversity loss in the Asia & Pacific region. Together with finance and technical partners, ADB aims to catalyze at least $2 billion by 2030 from public and private sources for nature-based solutions.

The Climate Solutions Week also included the presentation of the OPEC Fund's 2023 Award for Development to the Dhaka Ahsania Mission, a non-governmental organization that supports underprivileged women and smallholder farmers in Bangladesh. OPEC Fund President Alkhalifa praised the organization: "Your work is critical in a country where agriculture supports every second livelihood and faces severe challenges from climate change."

The OPEC Fund's inaugural Climate Solutions Week attracted senior representatives from many development institutions.

All pictures are courtesy of the OPEC Fund.

Forthcoming events

SPE Offshore Europe Conference and Exhibition, 2–5 September 2024, Aberdeen, UK. Details: Society of Petroleum Engineers, Part Third Floor East, Portland House, 4 Great Portland Street, London W1W 8QJ, UK. Tel: +44 207 299 33 00; fax: +44 207 299 33 09; e-mail: spelon@spe.org; website: www.offshore-europe.co.uk.

Sustainable Road Transport Europe 2024, 3–4 September 2024, Amsterdam, The Netherlands. Details: Reuters Events, 5 Canada Square, Canary Wharf, London, E14 5AQ, UK. Tel: +44 207 375 75 00; fax: +44 207 375 75 76; website: https://events.reutersevents.com/automotive/sustainabletransport.

Global African Hydrogen Summit, 3–5 September 2024, Windhoek, Namibia. Details: dmg events, 6th floor, Northcliffe House, 2 Derry Street, London W8 5TT, UK. Tel: +44 20 36 15 28 73; fax: +44 20 36 15 06 79; e-mail: conferencemarketing@dmgevents.com; website: www.globalafricanhydrogensummit.com.

40th Annual Asia-Pacific Petroleum Conference (APPEC) 2024, 9–12 September 2024, Singapore. Details: S&P Platts, 20 Canada Square, Canary Wharf, London E14 5LH, UK. Tel: +44 207 17 66 142; fax: +44 207 17 68 512; e-mail: ci.support@spglobal.com; website: https://commodityinsights.spglobal.com/APPEC2024.html?

44th Oxford Energy Seminar, 9–18 September 2024, Oxford, UK. Details: The Oxford Institute for Energy Studies, 57 Woodstock Road, Oxford OX2 6FA, UK. Tel: +44 1865 31 13 77; fax: +44 1865 31 05 27; e-mail: information@oxfordenergy.org; website: www.oxfordenergy.org.

FSPO World Congress, 10–13 September 2024, Singapore. Details: Details: IQPC Ltd., Anchor House, 15–19 Britten Street, London SW3 3QL, UK. Tel: +44 207 36 89 300; fax: +44 207 36 89 301; e-mail: enquire@iqpc.co.uk; website: www.fpsonetwork.com/events-fpsoworldcongress.

Argentina Hydrocarbons 2024, 11–12 September 2024, Buenos Aires, Argentina. Details: Vostock Capital, Unit C, Toronto House, Surrey Quays Rd, London UK SE16 7AJ, UK. Tel: +44 207 394 30 90; e-mail: events@vostockcapital.com; website: www.argentinahydrocarbons.com.

Gastech Exhibition and Conference 2024, 17–20 September 2024, Houston, TX, USA. Details: dmg events, 5th Floor, The Palladium, Cluster C, Jumeirah Lakes Towers, PO Box 33817, Dubai, UAE. Tel +971 4 43 80 355; e-mail: info@dmgevents.com; website: www.gastechevent.com.

11th Downstream Central Asia and Caspian 2024, 18–19 September 2024, Astana, Kazakhstan. Details: Global Business Club, 22 Highbury Grove, Office 320, London N5 2EF, UK. Tel: +44 203 813 46 37; website: https://globuc.com/downstream-centralasia.

3rd International Conference on Oil, Gas and Petroleum, 19–21 September 2024, Rome, Italy. Details: Magnus Group LLC, 150 South Wacker Drive #2400, Chicago, IL 60606, USA. Tel: +1 702 988 23 20; e-mail: oil-gas@magnusconference.com; website: https://oil-gas.magnusconferences.com.

Tanzania Energy Congress, 20–21 September 2024, Dar-es-Salaam, Tanzania. Details: African Energy, 4 Bank Buildings, Station Road, Hastings TN34 1NG, UK. Tel: +44 1424 72 16 67; e-mail: jon@africa-energy.com; website: www.africa-energy.com/events/tanzania-energy-congress.

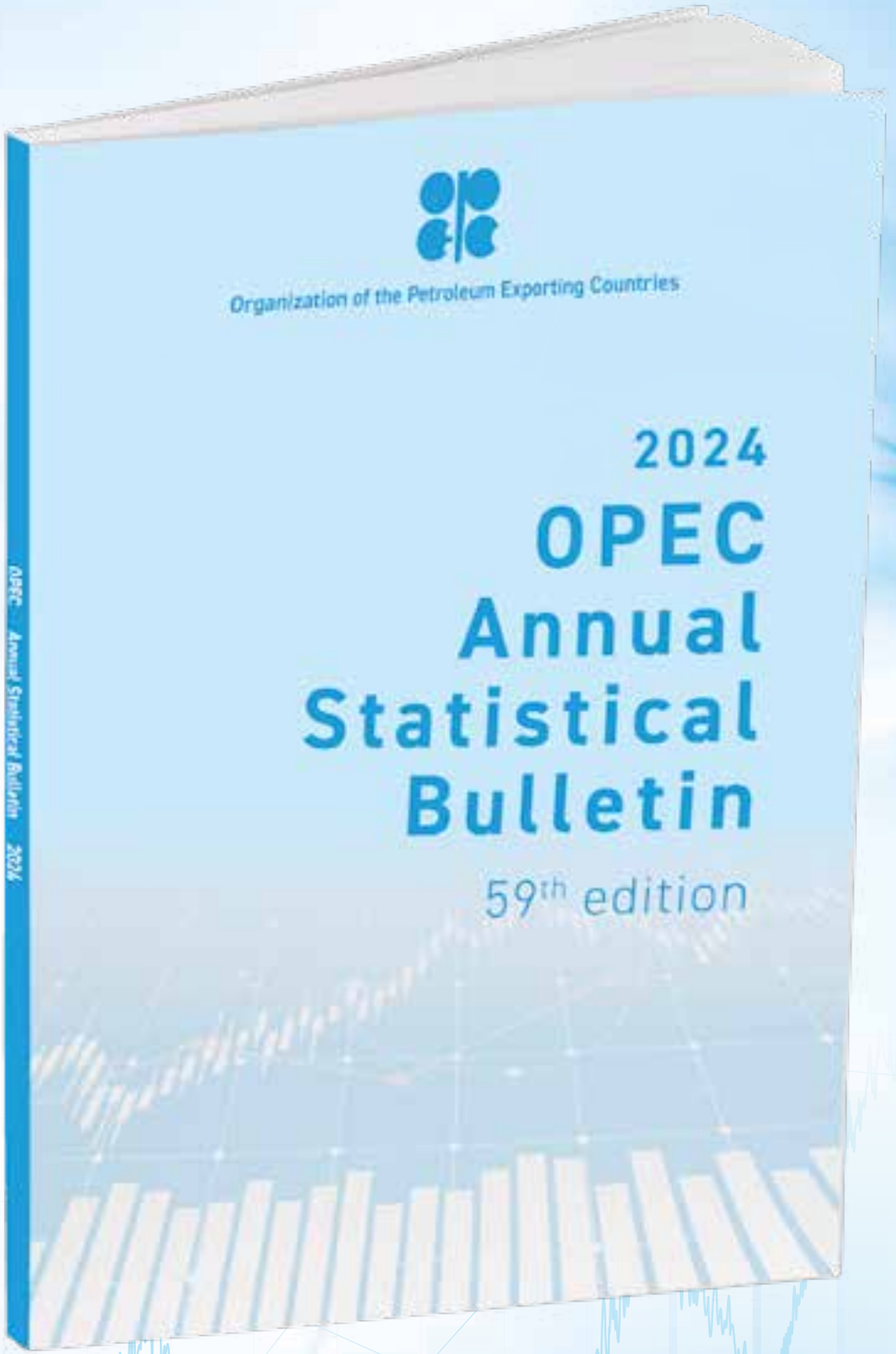
Rio Oil and Gas (ROG.e), 23–26 September 2024, Rio de Janeiro, Brazil. Details: IBP — Brazilian Petroleum and Gas Institute; Avenida Almirante Barrosos, 52–26º andar, Centro, Rio de Janeiro, Brazil. Tel: +55 21 21 12 90 00; website: www.roge.energy.

Downstream Conference, 24–25 September 2024, Warsaw, Poland. Details: Euro Petroleum Consultants Ltd., 44 Oxford Drive, Bermondsey Street, London SE1 2FB, UK. Tel: +44 207 35 78 394; email: christina_romanova@europetro.com; website: https://europetro.com/idw.

Uganda International Oil and Gas Summit, 24–25 September 2024, Kampala, Uganda. Details: Global Event Partners; Suite 1, 7th Floor, 50 Broadway, London SW1H 0DB, UK. Tel: +44 7904 06 09 27; e-mail: contact@gep-events.com; website: https://uiogs.com.

Energy Leadership Summit 2024, 25–26 September 2024, New Delhi, India. Details: ETEnergyworld.com (Times Centre), FC6, Sector 16 A, Film City, Noida, 201301 Uttar Pradesh, India. Tel: +91 79 88 61 98 178; email: anand.kumar1@timesinternet.in; website: https://energy.economictimes.indiatimes.com.

8th Power and Energy Tanzania, 25–27 September 2024, Dar-es-Salaam, Tanzania. Details: Expogroup, Monarch Office Tower, PO Box 333840, Sheikh Zayed Road, Dubai, UAE. Tel: +971 43 05 07 55; fax: +971 4 37 21 42; e-mail: feedback@expogr.com; website: www.expogr.com/tanzania/powerenergy.



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Monetary policies' impact on oil market

July 2024

In the key advanced economies, the consumer price index (CPI) has signalled an easing of inflation. In the US, it declined to 3.3 per cent in May, but remains above the US Federal Reserve's (US Fed) target level of 2 per cent. Similarly, in the Eurozone, the CPI dropped to 2.5 per cent in June. However, CPI levels in key developing countries have shown diverging trends, as can be seen in China, with inflation currently at 0.3 per cent in May while in India the CPI dropped to 4.7 per cent in May.

With this, and amid persistent inflationary pressures, the anticipated shifts towards monetary policy easing have been somewhat cautious. The European Central Bank (ECB) recently cut its three key interest rates by 25 basis points, but the US Fed and the Bank of England (BoE) have opted to keep policy rates unchanged at their most recent meetings.

The divergences in monetary policies are influenced not only by inflation expectations but also by a wide range of factors, including variations in inflation subcomponents, currency vulnerabilities, government debt, differences in business cycles, and the effects of geo-economic developments. Notably, the US Fed's policy decisions tend to have the most direct impact as trade is primarily dollar-denominated.

The Fed's current cautious approach presents a key challenge for the global oil market on two major fronts: the oil supply side and the strength of the US dollar (USD). On the supply side, the current high-interest rate environment increases the cost of capital, especially in the US market. This comes at a time when capital discipline mandates and shareholder activism are already limiting investment in exploration and production. On the USD front, maintaining interest rates at current levels supports the strength of the USD, resulting in higher commodity prices. The US Fed's stance to defer a rate cut could potentially constrain the abilities of other major economies to reduce their policy rates further, thus subjecting their economies to inflationary pressures as they aim to avoid weakening their currencies relative to the USD.

Despite the aforementioned challenges, the global economy remains resilient. The downward trend in global inflationary pressures observed during much of 1H24 is expected to continue into 2H24. The growth seen in the US economy at 1.3 per cent in 1Q24 is a major factor supporting potential rate cuts by the US Fed in the latter half of the year.

Overall, global economic growth for 2024 is forecast at 2.9 per cent. This growth is expected to support a healthy oil demand environment, with demand projected to grow by 2.2 million barrels per day (mb/d), year-on-year (y-o-y), to an average of 104.5 mb/d in 2024, up from 102.2 mb/d seen in 2023. On the supply side, the non-DoC liquids production is forecast to grow by 1.2 mb/d, y-o-y, averaging 53.0 mb/d in 2024, compared to 51.7 mb/d seen in 2023.

MOMR ... oil market highlights

July **2024**

Crude oil price movements – In June, the OPEC Reference Basket (ORB) declined slightly by 37¢, or 0.4 per cent, month-on-month (m-o-m), to average US$83.22 per barrel ($/b). The ICE Brent front-month contract was unchanged, m-o-m, at $83.00/b, while the NYMEX WTI front-month contract slightly increased by 8¢, or 0.1 per cent, m-o-m, to average $78.70/b. The DME Oman front-month contract declined by $1.05, m-o-m, or 1.3 per cent, m-o-m, to settle at $82.69/b. The front-month ICE Brent/NYMEX WTI spread narrowed in June by 8¢, m-o-m, to average $4.30/b. The price structure of ICE Brent and NYMEX WTI strengthened. Money managers turned less bearish about oil, as selling pressure eased.

World economy – The world economic growth forecast is revised up slightly to 2.9 per cent for 2024, but remained unchanged at 2.9 per cent for 2025. For the US, economic growth forecasts for both 2024 and 2025 remain unchanged at 2.2 per cent and 1.9 per cent, respectively. The economic growth forecast for the Eurozone is revised up slightly to stand at 0.7 per cent for 2024, with 2025 unchanged at 1.2 per cent. Japan's economic growth forecast remain unchanged at 0.3 per cent and 0.9 per cent for 2024 and 2025, respectively. China's 2024 economic growth forecast is revised up slightly to 4.9 per cent, while the 2025 forecast remains at 4.6 per cent. India's economic growth forecast is unchanged for both 2024 and 2025, at 6.6 per cent and 6.3 per cent, respectively. Brazil's economic growth forecast is unchanged at 1.8 per cent for 2024 and 1.9 per cent for 2025. Russia's economic growth forecasts for 2024 and 2025 are revised up slightly to 3.1 per cent and 1.5 per cent, respectively.

World oil demand – The 2024 global oil demand growth forecast remains at 2.2 mb/d, unchanged from last month's assessment. The OECD oil demand in 2024 is expected to expand by around 200,000 b/d, while the non-OECD is forecast to grow by around 2.1 mb/d. In 2025, global oil demand is expected to see robust growth of 1.8 mb/d, y-o-y, also unchanged from the previous month's assessment. The OECD oil demand is expected to grow by 100,000 b/d, y-o-y, while the non-OECD demand is forecast to expand by 1.7 mb/d.

World oil supply – Non-Declaration of Cooperation (DoC) liquids supply (i.e., liquids supply from countries not participating in the DoC) is expected to grow by 1.2 mb/d in 2024, unchanged from the previous month's assessment. The main growth drivers are expected to be the US, Canada and Brazil. In 2025, non-DoC liquids supply growth is forecast at 1.1 mb/d, also unchanged from the previous month's assessment. The growth is anticipated to be mainly driven by the US, Brazil, Canada and Norway. Separately, DoC natural gas liquids (NGLs) and non-conventional liquids are forecast to grow by about 100,000 b/d to average 8.3 mb/d in 2024, followed by an increase of about 25 tb/d, reaching 8.4 mb/d in 2025. Crude oil production by the countries participating in the DoC dropped by 125 tb/d in June compared to the previous month, averaging about 40.80 mb/d, as reported by available secondary sources.

Product markets and refining operations – In June, refinery margins continued to retract in the Atlantic basin. This marked the fourth consecutive monthly decline as refiners increased product output, with gasoline leading the losses due to ample availability. This was despite a robust gasoil crack spread performance in the US Gulf Coast (USGC). In contrast, margins in Singapore reversed direction, with gains driven by middle distillates, naphtha and high sulphur fuel oil. The upturn in Southeast Asia reflected the increase in planned and unplanned maintenance within the region.

Tanker market – Dirty spot freight rates showed mixed movements across classes. The very large crude carrier (VLCC) spot freight rates declined, amid lower flows from the Middle East. The Middle East-to-East route freight rates fell by 25 per cent, m-o-m, while the West Africa-to-East route fell by 19 per cent. Meanwhile, Suezmax freight rates rose on monitored routes, with a m-o-m gain of 10 per cent on the USGC to Europe route, amid higher flows out of Houston. Aframax freight rates declined around the Mediterranean, with the intra-Med route down 18 per cent, while the Indonesia-to-East route strengthened by 5 per cent, amid higher flows to Thailand and Malaysia. In the clean tanker market, freight rates were broadly flat East of Suez, while West of Suez rates fell 23 per cent, amid still sluggish product demand in Europe and soft economics for flows to North America.

Crude and refined products trade – In June, US crude imports surged for the third consecutive month to average 7.3 mb/d, according to preliminary data, representing a more than five-year high. For the first time in seven months, US crude exports fell below 4 mb/d, averaging 3.8 mb/d. US product exports jumped by 6 per cent, m-o-m, to average 6.8 mb/d, the second highest on record, amid higher flows to Asia, Latin America and Europe. The latest data for China shows crude imports averaged 11.1 mb/d in May, a m-o-m increase but some 9 per cent lower compared to the same month last year. China's product imports fell from high levels seen in the previous month to average 2.4 mb/d, as independent refiners reduced inflows of refinery feedstocks. India's crude imports in May declined from a two-year high to average 5.1 mb/d, as product consumption was elevated by the election activities. India's product imports tapered slightly to average 1.1 mb/d, amid lower inflows of fuel oil. Japan's crude imports fell to a 34-month low of 2.1 mb/d in May as the weaker yen slowed buying, amid muted demand. Japan's product exports also declined m-o-m, driven by lower outflows of gasoil and fuel oil. Preliminary estimates indicate OECD Europe crude imports fell m-o-m in May, amid refinery maintenance and lacklustre product demand in the region. Product imports into the OECD region were seen to decline in May due to lower inflows of jet fuel and diesel.

Commercial stock movements – Preliminary May 2024 data shows a build in total OECD commercial oil stocks by about 24.7 mb, m-o-m, reaching 2,813 mb. This is about 142 mb below the 2015–19 average. Within the components, crude stocks fell by 5.4 mb, while product stocks rose by 30.1 mb, m-o-m. OECD commercial crude stocks stood at 1,366 mb in May. This is 120 mb less than the 2015–19 average. OECD total product stocks stood at 1,447 mb in May. This is 23 mb below the 2015–19 average. In terms of days of forward cover, OECD commercial oil stocks increased in May by 0.3 days, m-o-m, to stand at 60.6 days. This is 1.4 days less than the 2015–19 average.

Balance of supply and demand – Demand for DoC crude (i.e., crude from countries participating in the DoC) in 2024 is revised down slightly by 100,000 b/d from the previous month's assessment to stand at 43.1 mb/d, which is around 900,000 b/d higher than the estimate for 2023. This revision is mainly due to higher supply historical data. Demand for DoC crude in 2025 is revised down by 100,000 b/d from the previous month's assessment to stand at 43.9 mb/d, which is around 700,000 b/d higher than the estimate for 2024. Again, this revision is due to higher supply historical data.

The feature article and oil market highlights are taken from OPEC's Monthly Oil Market Report (MOMR) for July 2024. Published by the Secretariat's Petroleum Studies Department, the publication may be downloaded in PDF format from our Website (www.opec.org), provided OPEC is credited as the source for any usage. The additional graphs and tables on the following pages reflect the latest data on the OPEC Reference Basket and crude and oil product prices in general.

Crude and product price movements in 1H24

August 2024

Between January and April, oil futures prices rallied, with ICE Brent and NYMEX WTI front-month contracts rising by $9.85 and $10.53, or 12.4 per cent and 14.3 per cent, respectively. In addition to robust physical crude market fundamentals, oil futures prices were further supported by easing speculative selling, higher risk premiums and several unplanned supply outages. Additionally, resilient global economic growth and positive economic indicators from the US and India supported market sentiment. However, uncertainties related to China's economic outlook and the US Fed's monetary policy, along with a strengthening US dollar, limited the upward momentum.

Between May and July, oil prices declined, primarily due to sentiment driven by speculative selloffs, easing geopolitical risk premiums and mixed economic indicators. Market sentiment was further affected by uncertainty surrounding central bank monetary policies, particularly prospects for prolonged high interest rates in the US as a means of addressing ongoing inflation. Additionally, concerns about China's economic performance and demand growth, coupled with a slower-than-expected onset of the driving season, contributed to the downward pressure on prices.

In terms of products, in 1H24, the typical winter-related demand pressures kept wholesale fuel prices range-bound at the beginning of the year. In the US, refinery outages caused by severe winter weather conditions led to higher product prices. Additionally, the onset of the spring maintenance season contributed to upward pressure on prices. Following a seasonal dip in May and June, wholesale product prices, particularly for gasoline, rebounded in July, showing a month-on-month (m-o-m) increase.

In the US Gulf Coast, all products saw solid price increases in July, with gasoline registering the highest price in absolute terms. Summer season-related factors and recent temporary refinery disruptions caused by a hurricane led to reduced product availability. Thisdrove the gasoline 93 wholesale price up by US$3.74 per barrel ($/b), m-o-m, to average $114.48/b, while naphtha and gasoil showed sizeable $6.76/b and $4.49/b monthly gains, respectively.

Similarly, in Rotterdam, prices increased across the barrel with naphtha and high sulphur fuel oil emerging as the strongest performers m-o-m. Tighter naphtha supplies amid lower output and robust residual fuel requirements from Asia and the Middle East supported the upturn.

Regional product prices in Asia increased in July due to refinery outages in Japan, reduced product exports from China and increased demand from South Korea. Atlantic Basin refiners are expected to enter into heavy maintenance in September.

While diesel consumption remains soft due to limited industrial output in the Atlantic Basin and increased LNG-powered truck sales in China, global transport fuels are expected to remain supported.

Despite the slow start to the summer driving season compared to the previous year, transport fuel demand is expected to remain solid due to healthy road and air mobility. Additionally, upcoming heavy refinery maintenance in autumn and weather-related disruptions linked to the hurricane and monsoon seasons might potentially restrict product output and strengthen the product markets, particularly in September.

MOMR … oil market highlights

August **2024**

Crude oil price movements — In July, the OPEC Reference Basket rose by $1.21, or 1.5 per cent, m-o-m, to average US$84.43 per barrel ($/b). ICE Brent front-month contract rose by 88¢, or 1.1 per cent, month-on-month (m-o-m), to stand at $83.88/b. The NYMEX WTI front-month contract rose by $1.78, or 2.3 per cent, m-o-m, to average $80.48/b. DME Oman crude oil futures prices rose in July by 68¢, or 0.8 per cent, m-o-m, to settle at $83.37/b. The front-month ICE Brent/NYMEX WTI spread contracted by 90¢, m-o-m, to stand at $3.40/b. The forward curves of oil futures prices strengthened, with all major crude benchmarks showing steeper backwardation. Money managers closed a large volume of long positions and raised short positions, particularly in the ICE Brent market.

World economy — World economic growth is forecast at 2.9 per cent for 2024 and 2.9 per cent for 2025, both unchanged from last month's assessment. Following a strong growth in 2Q24, the US economic growth forecast for 2024 is revised up to 2.4 per cent, while the 2025 forecast remains unchanged at 1.9 per cent. The strong economic performance exhibited by the US economy in 1H24 has been offset somewhat by weaker economic performance in Japan. Japan's economic growth forecast for 2024 is revised down slightly to 0.2 per cent, while its 2025 forecast remains unchanged at 0.9 per cent. For the Eurozone, the economic growth forecasts remain unchanged for both 2024 and 2025 at 0.7 per cent and 1.2 per cent, respectively. In the non-OECD, China's economic growth forecasts remain at 4.9 per cent in 2024 and 4.6 per cent in 2025. India's economic growth forecasts are unchanged for both 2024 and 2025, at 6.6 per cent and 6.3 per cent, respectively. Brazil's economic growth forecasts are unchanged at 1.8 per cent for 2024 and 1.9 per cent for 2025. Russia's economic growth forecasts remain at 3.1 per cent in 2024 and 1.5 per cent in 2025.

World oil demand — The world oil demand growth forecast for 2024 is revised down slightly by 135,000 b/d from the previous month's assessment. It now stands at a healthy 2.1 mb/d, well above the historical average of 1.4 mb/d seen prior to the COVID-19 pandemic. This slight revision reflects actual data received for 1Q24 and in some cases 2Q24, as well as softening expectations for China's oil demand growth in 2024. Within the main regions, OECD oil demand is expected to grow by around 200,000 b/d in 2024, while non-OECD oil demand is expected to increase by around 1.9 mb/d. In 2025, world oil demand is also revised slightly down by 65,000 b/d, reaching about 1.8 mb/d. OECD demand is expected to expand by about 100,000 b/d in 2025, with OECD Americas contributing the largest increase. Non-OECD demand is set to drive next year's growth, increasing by about 1.7 mb/d, led by contributions from China, the Middle East, Other Asia, and India.

World oil supply — Non-Declaration of Cooperation (Non-DoC) liquids supply (i.e. liquids supply from countries not participating in the DoC) is expected to grow by 1.2 mb/d in 2024, unchanged from the previous month's assessment. The main growth drivers are expected to be the US, Canada and Brazil. The non-DoC liquids supply growth forecast for 2025 is also unchanged at 1.1 mb/d. The growth is anticipated to be mainly driven by the US, Brazil, Canada and Norway. Natural gas liquids (NGLs) and non-conventional liquids from DoC Participating Countries are forecast to grow by about 100,000 b/d to average 8.3 mb/d in 2024, followed by an increase of about 40,000 b/d, reaching 8.4 mb/d in 2025. Crude oil production by the countries participating in the DoC increased by 117,000 b/d in July compared with the previous month, averaging about 40.91 mb/d, as reported by available secondary sources.

Product markets and refining operations — In July, refinery margins in the US Gulf Coast increased, mostly supported by supply-side dynamics, as product inventories showed declines over the month due to weather-related refinery disruptions. This contributed to upward pressure on most US product prices, with the exception of jet/kerosene, boosting refining margins. In Singapore, lower crude oil prices and tighter product supplies in Northeast Asia due to planned and unplanned refinery maintenance supported regional refining economics. In addition, robust power generation demand from the Middle East continued to sustain Asian fuel oil markets, providing further support. Meanwhile, margins in Northwest Europe weakened, with losses seen across the barrel. This reflected strong refinery product output, a softer domestic middle distillate market, and lower European product exports in Rotterdam.

Tanker market — Dirty spot freight rates softened in July, m-o-m. The decline in Suezmax spot rates led losses, followed by Aframax and very large crude carriers. Suezmax spot freight declined, m-o-m, in July, as a lack of activity weighed on sentiment. On the West Africa-to-US Gulf Coast route, Suezmax rates fell 16 per cent, m-o-m, as a US holiday and hurricane outages impacted tanker demand in the Gulf of Mexico. Reduced activities weighed on Aframax spot freight rates. The Cross-Mediterranean (Med) route averaged 15 per cent lower for the month, amid a drop in tanker demand in the region. In the East of Suez, Aframax spot freight rates on the Indonesia-to-East route fell by 11 per cent but remained higher compared to the level of a year ago. In the VLCC market, spot freight rates on the Middle East-to-East route declined by 2 per cent, m-o-m. Rates on the West Africa-to-East route fell by 5 per cent, m-o-m, despite increased departures to India. Rates for clean tankers East of Suez declined by 18 per cent, m-o-m, amid reduced buying from South Korea and sufficient tanker availability. In contrast, West of Suez rates rose 12 per cent, m-o-m, amid higher flows to Europe.

Crude and refined products trade — US crude imports in July remained close to the high levels seen in recent months, averaging 6.9 mb/d, according to preliminary data. Meanwhile, US crude exports moved back above 4 mb/d. US product exports in July partly erased the strong gains seen in the previous month, averaging 6.4 mb/d, amid lower flows to Mexico and China. Preliminary estimates indicate that OECD Europe crude imports remain below levels seen a year ago in June and July. Product imports are estimated to have declined in June, amid losses across all major products, although they partially recovered in July, led by fuel oil. In Japan, crude imports continued to fall in June, according to the latest official data, to average just below 2.1 mb/d. This represented a three-year low. Japan's product imports also declined, amid lower inflows of LPG. China's crude imports in June averaged 11.3 mb/d, about 11 per cent lower than the robust growth seen in the same month last year, when the economy was rebounding after the pandemic. Product imports into China continued to fall from the high levels seen in April, as independent refiners scaled back refinery feedstock purchases. China's product outflows rose by 5 per cent, m-o-m, as higher exports of jet fuel and fuel oil outweighed a drop in diesel outflows. Meanwhile, India's crude imports fell back m-o-m in June from the strong levels seen in the previous two months, averaging 4.5 mb/d, partly following seasonal trends. India's product imports declined by 8 per cent, m-o-m, amid lower inflows of LPG.

Commercial stock movements — Preliminary June 2024 data for total OECD commercial oil stocks shows a draw of about 14.1 mb, m-o-m, to stand at 2,831 mb. This is about 116 mb below the 2015–19 average. Within the components, crude stocks fell by 17.3 mb, m-o-m, while product stocks rose by 3.1 mb. OECD commercial crude stocks stood at 1,365 mb in June. This is 101 mb less than the 2015–19 average. OECD total product stocks stood at 1,467 mb in June. This is 15 mb below the 2015–19 average. In terms of days of forward cover, OECD commercial oil stocks fell by 0.1 days, m-o-m, to stand at 61.2 days in June. This is 0.6 days less than the 2015–19 average.

Balance of supply and demand — Demand for DoC crude (i.e. crude from countries participating in the DoC) is revised down by 100,000 b/d from the previous month's assessment to stand at 43.0 mb/d in 2024, which is around 800,000 b/d higher than the estimate for 2023. Demand for DoC crude in 2025 is revised down by 200,000 b/d from the previous month's assessment to stand at 43.6 mb/d, around 600,000 b/d higher than the estimate for 2024.

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Table 1: OPEC Reference Basket spot crude prices

$/b

	2023						2024							Weeks 27–31/2024 (week ending)				
Crude/Member Country	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	05 Jul	12 Jul	19 Jul	26 Jul	2 Aug
Arab Light — Saudi Arabia	83.45	89.55	96.51	93.39	87.30	81.27	82.14	82.30	85.61	90.64	85.60	85.31	86.19	89.03	87.81	86.61	83.73	81.98
Basrah Medium — Iraq	78.82	85.38	93.14	90.19	83.80	77.64	78.21	79.35	82.13	87.01	81.58	81.96	83.53	86.40	85.19	84.04	81.01	79.17
Bonny Light — Nigeria	79.92	86.52	95.53	94.03	86.18	79.81	80.84	85.65	87.86	93.17	84.16	83.30	85.07	88.10	86.92	85.81	82.22	80.16
Djeno — Congo	72.64	78.69	86.51	83.67	75.60	70.53	72.90	76.45	77.99	82.44	74.37	74.95	77.80	80.83	79.65	78.54	74.95	72.89
Es Sider — Libya	79.69	86.39	94.31	92.12	83.35	77.78	79.66	83.95	85.34	89.34	81.27	81.15	84.35	87.38	86.20	85.09	81.50	79.44
Iran Heavy — IR Iran	81.48	87.58	94.63	91.55	85.00	79.06	80.14	80.34	83.48	88.79	84.13	83.65	84.57	87.35	86.18	85.00	82.14	80.34
Kuwait Export — Kuwait	82.39	88.77	95.70	92.85	86.30	80.11	80.84	81.09	84.43	89.76	85.15	84.91	85.72	88.50	87.33	86.15	83.29	81.49
Merey — Venezuela	63.28	68.48	75.51	72.54	70.74	65.23	66.50	67.27	70.98	74.91	70.55	69.23	67.61	70.36	69.23	68.01	65.17	63.53
Murban — UAE	80.78	87.24	93.86	91.00	83.33	77.68	79.06	80.99	84.52	89.19	84.10	82.51	83.80	86.63	85.44	84.24	81.28	79.86
Rabi Light — Gabon	79.63	85.68	93.50	90.66	82.59	77.52	79.89	83.44	84.98	89.43	81.36	81.94	84.79	87.82	86.64	85.53	81.94	79.88
Saharan Blend — Algeria	80.29	86.69	95.21	93.27	84.80	78.83	81.36	86.00	87.54	90.79	82.07	82.55	85.40	88.43	87.25	86.14	82.55	80.49
Zafiro — Equatorial Guinea	81.45	87.54	95.36	92.52	84.45	79.38	81.66	85.30	86.84	91.29	83.22	83.62	86.35	89.38	88.20	87.09	83.50	81.44
OPEC Reference Basket	**81.06**	**87.33**	**94.60**	**91.78**	**84.92**	**79.00**	**80.04**	**81.23**	**84.22**	**89.12**	**83.59**	**83.22**	**84.43**	**87.29**	**86.09**	**84.91**	**81.89**	**80.11**

Table 2: Selected spot crude prices

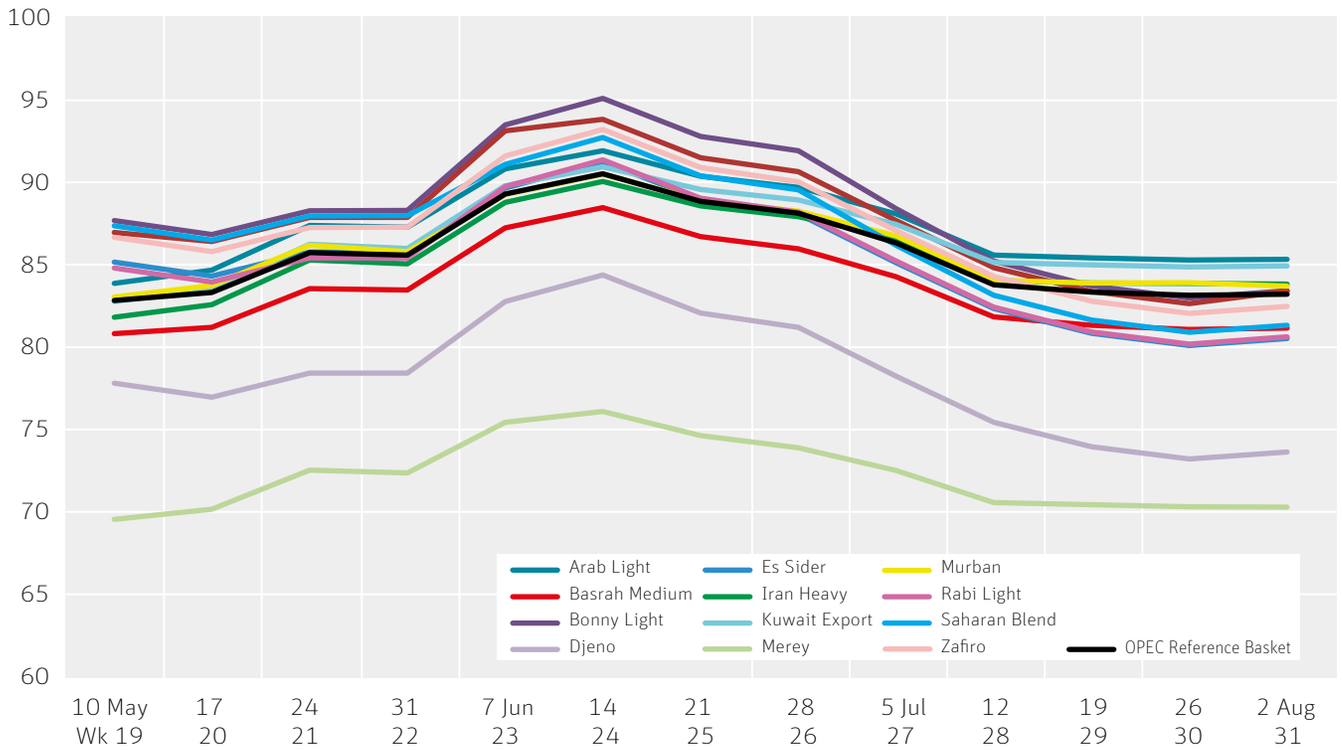
$/b

	2023						2024							Weeks 27–31/2024 (week ending)				
Crude/country	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	05 Jul	12 Jul	19 Jul	26 Jul	2 Aug
Arab Heavy — Saudi Arabia	81.24	87.48	94.43	91.50	84.95	79.26	80.44	80.54	83.88	89.24	84.58	84.15	84.97	87.75	86.58	85.40	82.54	80.74
Brega — Libya	78.94	85.29	93.26	90.82	82.55	77.28	79.36	83.40	85.09	89.19	81.02	80.85	83.80	86.83	85.65	84.54	80.95	78.89
Brent Dtd — North Sea	80.09	86.14	93.96	91.12	83.05	77.98	80.26	83.90	85.44	89.89	81.82	82.40	85.25	88.28	87.10	85.99	82.40	80.34
Dubai — UAE	80.33	86.46	92.93	89.81	83.33	77.31	78.73	80.82	84.21	89.12	84.11	82.61	83.68	86.50	85.33	84.15	81.22	79.66
Ekofisk — North Sea	81.83	88.44	96.84	95.67	86.12	80.21	82.98	87.06	87.99	91.92	83.34	83.87	88.05	91.08	89.90	88.79	85.20	83.04
Iran Light — IR Iran	80.75	87.29	93.92	91.83	82.07	74.13	76.37	80.94	82.36	88.24	81.65	82.37	85.14	88.06	87.24	86.07	82.23	79.77
Isthmus — Mexico	72.56	79.56	87.24	84.04	76.76	70.67	72.34	75.77	78.72	82.92	77.38	76.85	78.59	81.58	80.19	79.45	76.06	73.26
Oman — Oman	80.54	86.49	92.73	89.79	83.17	77.21	78.75	80.86	84.14	89.35	84.06	82.49	83.85	86.58	85.42	84.25	81.46	79.96
Suez Mix — Egypt	80.62	87.16	93.79	91.70	81.94	74.00	76.24	80.81	82.23	88.11	81.52	82.24	85.01	87.93	87.11	85.94	82.10	79.64
Minas — Indonesia	77.47	84.97	91.12	88.25	81.16	76.69	78.06	83.67	90.74	96.43	89.27	87.14	90.57	93.07	91.95	91.23	88.50	86.79
Urals — Russia	61.40	71.34	81.16	78.97	69.00	59.97	62.36	66.45	68.24	73.02	65.43	67.62	72.17	74.73	74.24	72.88	69.34	67.74
WTI — North America	75.85	81.41	89.38	85.57	77.37	72.08	73.87	76.89	80.49	84.59	78.73	79.03	80.83	83.57	82.13	81.69	78.73	75.66

Notes:
Brent for dated cargoes; Urals cif Mediterranean. All others fob loading port.
Sources: Argus; Secretariat's assessments.

Graph 1: Evolution of the OPEC Reference Basket spot crude prices, 2024

$/b



Graph 2: Evolution of selected spot crude prices, 2024

$/b

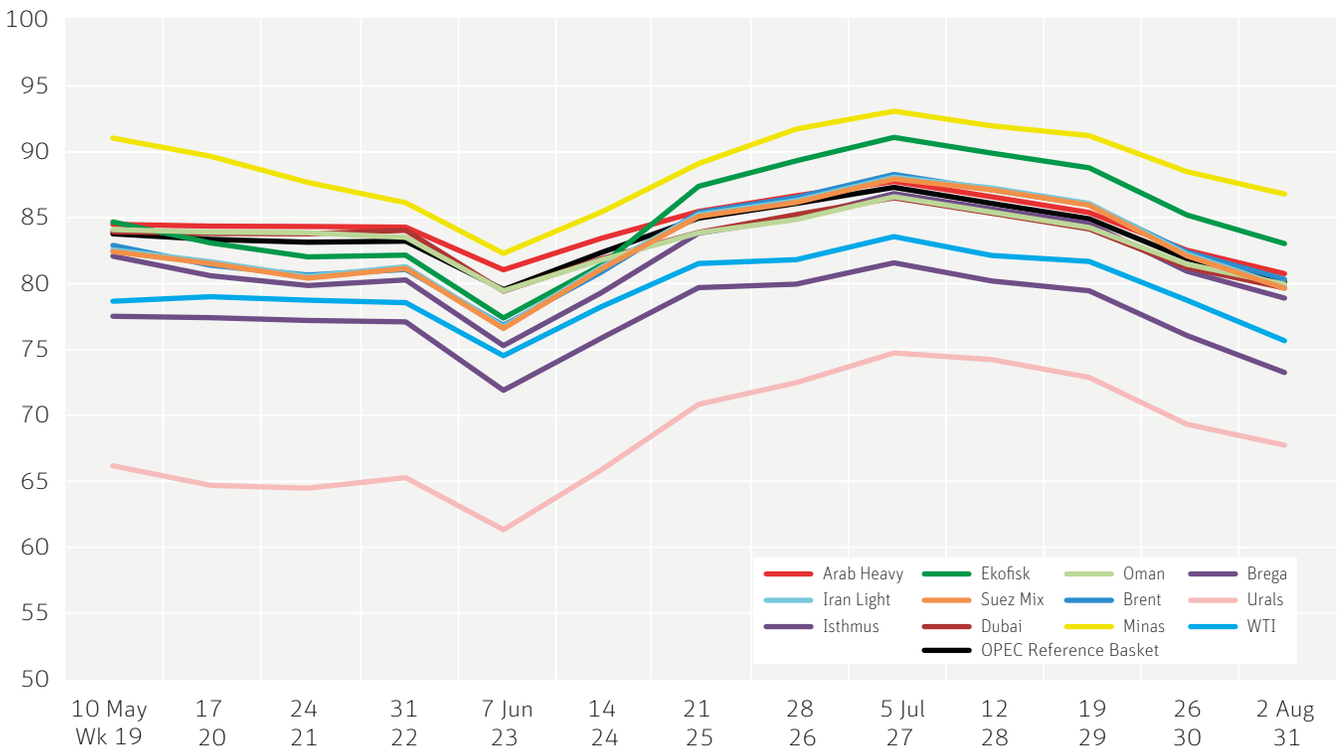


Table and Graph 3: North European market — spot barges, fob Rotterdam

$/b

		naphtha	regular gasoline unleaded	diesel ultra light	jet kero	fuel oil 1 per cent S	fuel oil 3.5 per cent S
2023	July	63.22	131.12	106.27	105.39	75.02	72.49
	August	70.90	142.60	124.12	122.68	83.81	83.88
	September	77.27	140.69	131.21	131.91	88.83	87.55
	October	71.27	123.01	123.34	122.44	80.64	74.96
	November	69.35	119.33	116.72	114.99	75.29	68.93
	December	70.27	112.50	107.26	105.62	70.95	66.05
2024	January	70.61	115.51	110.89	107.60	72.54	65.99
	February	73.32	123.05	114.18	116.23	72.80	69.22
	March	78.43	128.49	109.34	112.12	78.70	71.75
	April	76.24	126.39	108.07	109.15	78.14	74.45
	May	73.05	109.74	102.60	100.68	73.14	72.29
	June	73.24	106.13	102.47	102.03	73.96	73.87
	July	75.92	107.60	103.78	103.06	76.11	75.29

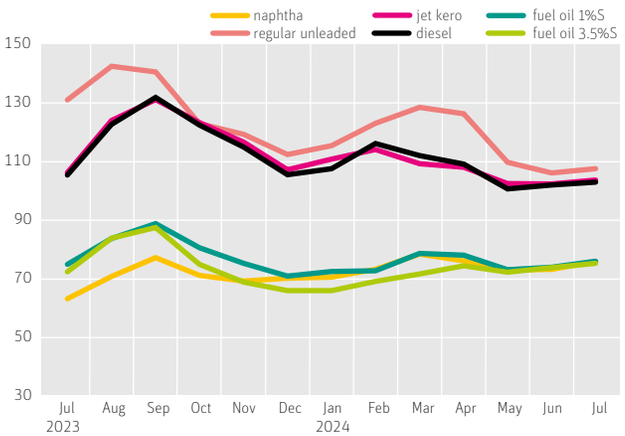


Table and Graph 4: South European market — spot cargoes, fob Italy

$/b

		naphtha	premium gasoline 50ppm	diesel ultra light	fuel oil 1 per cent S	fuel oil 3.5 per cent S
2023	July	61.32	107.81	106.23	78.65	73.28
	August	68.74	117.34	123.03	87.46	80.86
	September	74.24	119.75	131.60	92.29	85.03
	October	69.13	99.59	122.33	85.02	72.85
	November	68.60	98.25	112.32	78.59	65.00
	December	66.91	92.39	105.78	76.45	60.70
2024	January	68.02	94.91	108.66	74.57	64.79
	February	70.10	102.78	116.35	78.55	69.29
	March	74.58	108.77	112.33	84.16	70.33
	April	73.53	113.81	109.99	83.05	74.80
	May	70.21	105.11	102.04	77.64	69.94
	June	71.49	99.62	103.63	78.44	70.84
	July	73.92	101.85	105.00	80.33	74.62

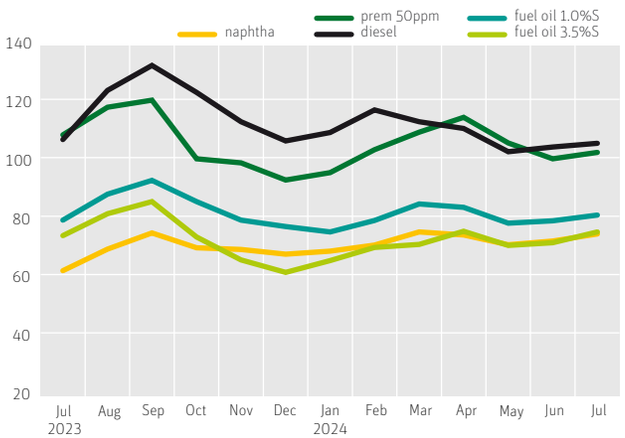
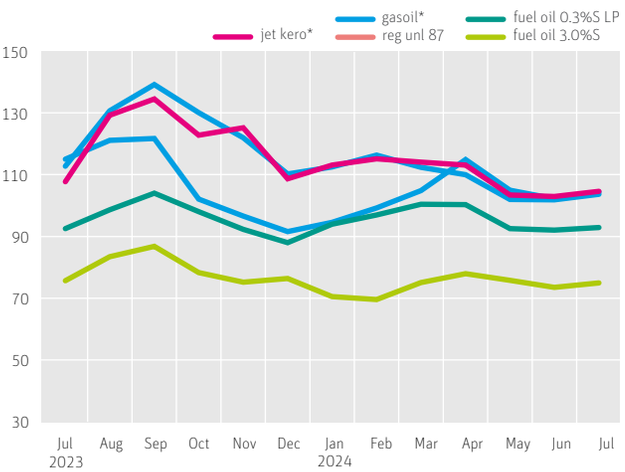


Table and Graph 5: US East Coast market — spot cargoes, New York

$/b, duties and fees included

		regular gasoline unleaded 87	gasoil*	jet kero*	fuel oil 0.3 per cent S	fuel oil 3.0 per cent S
2023	July	115.04	112.69	107.77	92.54	75.62
	August	121.08	130.65	129.26	98.63	83.47
	September	121.76	139.20	134.55	104.00	86.78
	October	102.14	130.11	122.80	98.06	78.27
	November	96.61	121.92	125.19	92.25	75.16
	December	91.58	110.27	108.70	87.98	76.36
2024	January	94.54	112.48	113.07	93.91	70.47
	February	99.18	116.32	115.14	96.99	69.52
	March	104.85	112.36	114.06	100.44	75.05
	April	114.95	110.05	113.05	100.35	77.96
	May	105.01	101.93	103.35	92.55	75.75
	June	102.21	101.89	102.96	92.02	73.51
	July	104.42	103.66	104.57	92.89	74.96



* *FOB barge spot prices.*

Source: Argus. Prices are average of available days.

Table and Graph 6: Singapore market – spot cargoes, fob

$/b

		naphtha	premium gasoline unl 95	premium gasoline unl 92	gasoil	jet kero	fuel oil 180 Cst	fuel oil 380 Cst
2023	July	62.43	98.60	93.13	101.02	99.55	98.85	73.39
	August	70.70	107.23	101.84	117.15	116.01	116.59	82.48
	September	74.73	109.92	104.47	122.44	121.42	122.77	81.18
	October	70.80	98.91	93.71	113.48	112.78	113.58	71.86
	November	69.57	98.00	92.36	103.21	103.06	106.63	68.43
	December	72.69	91.27	87.27	97.38	97.31	101.65	66.95
2024	January	73.03	95.94	91.18	101.16	100.74	101.58	66.95
	February	72.48	100.07	95.58	104.87	103.97	103.26	65.92
	March	76.45	101.52	97.09	102.76	101.43	102.54	71.28
	April	75.58	106.33	102.07	103.50	101.36	102.76	76.70
	May	72.29	95.38	91.10	95.67	94.13	95.45	78.02
	June	72.56	92.98	87.92	97.57	96.74	97.39	77.62
	July	74.77	96.42	92.16	98.97	98.61	98.36	77.61

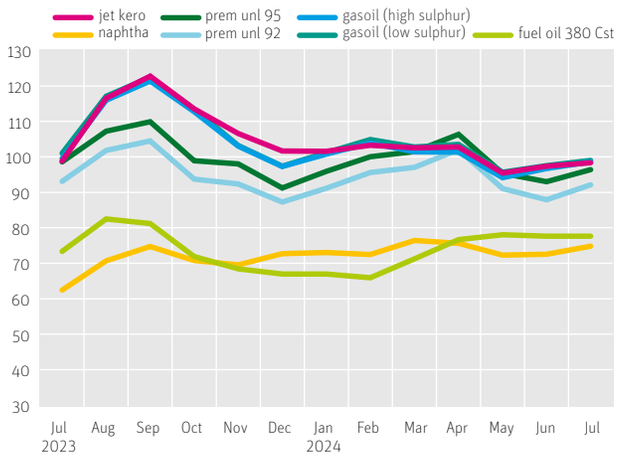
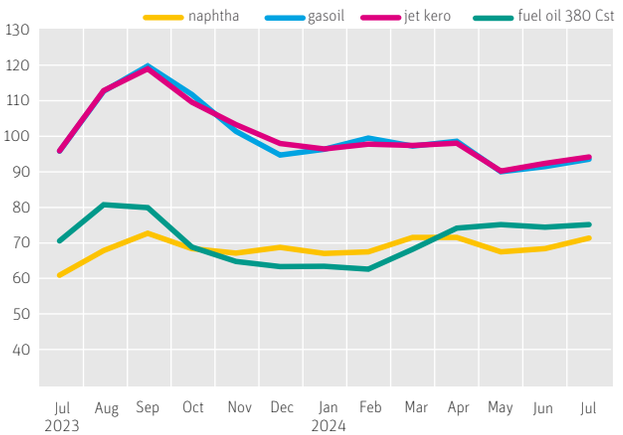


Table and Graph 7: Middle East Gulf market – spot cargoes, fob

$/b

		naphtha	gasoil	jet kero	fuel oil 180 Cst
2023	July	60.85	95.82	95.87	70.51
	August	67.79	112.71	112.89	80.75
	September	72.70	119.81	119.02	79.94
	October	68.37	111.78	109.63	68.86
	November	67.13	101.44	103.27	64.77
	December	68.78	94.69	97.95	63.28
2024	January	66.98	96.33	96.48	63.42
	February	67.43	99.55	97.77	62.58
	March	71.54	97.27	97.39	68.18
	April	71.57	98.57	98.05	74.17
	May	67.49	90.04	90.17	75.17
	June	68.37	91.45	92.34	74.46
	July	71.32	93.55	94.15	75.14



Source: Argus. Prices are average of available days.

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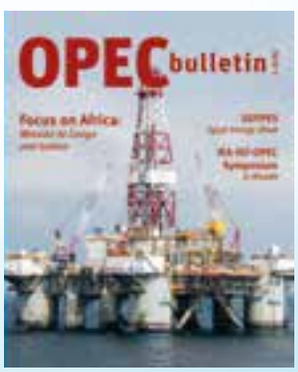

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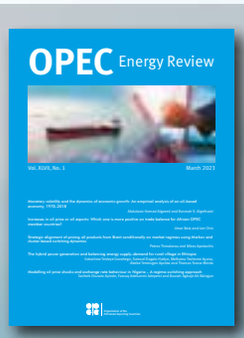

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