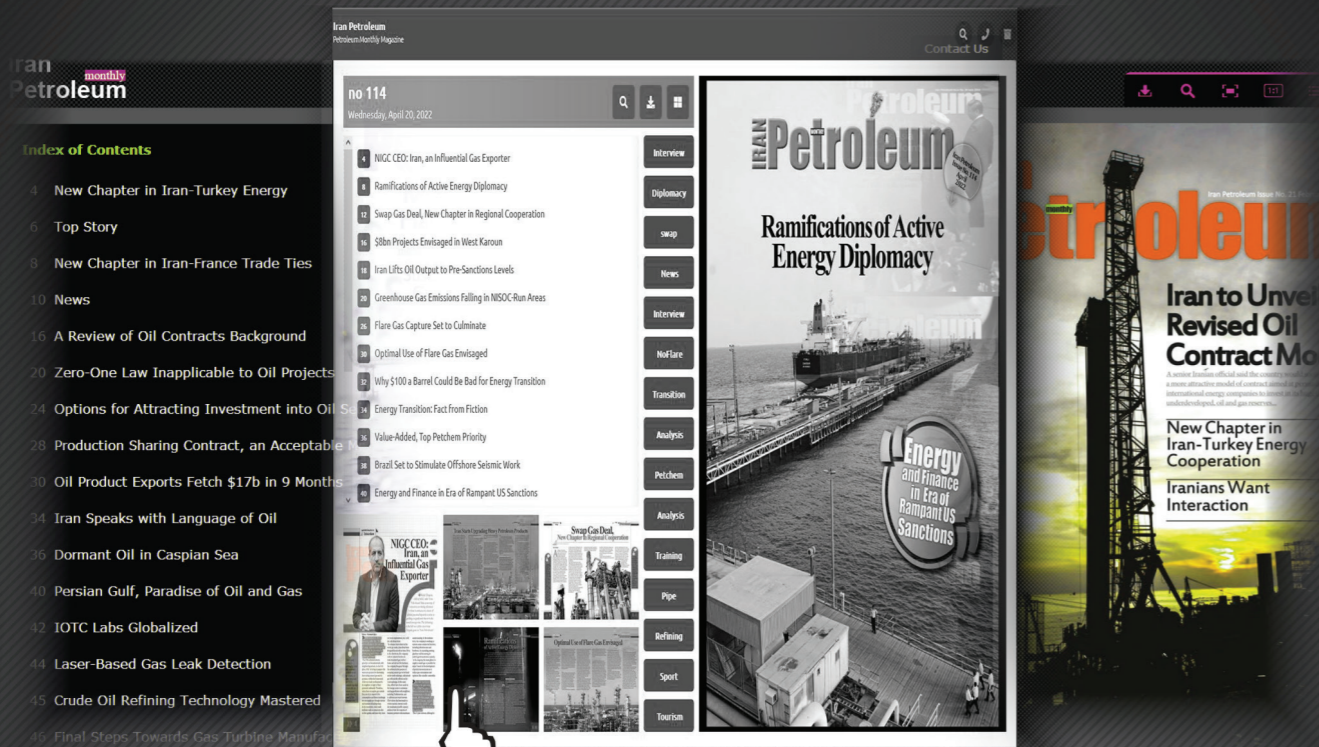
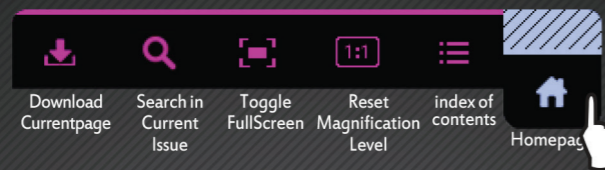


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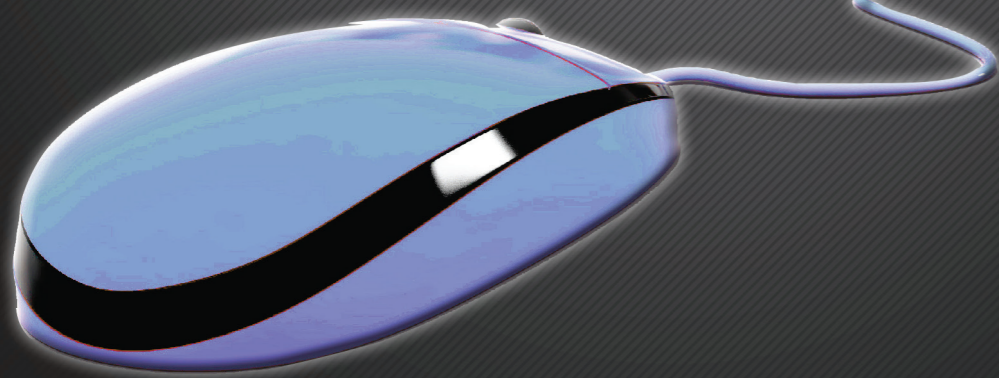
**\$24bn
Petchem
Projects
Envisaged in
7th Plan**

**West Karoun Output
Exceeds 500,000 b/d**



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Shifting From Traditional Contracts to Strategic Partnership

Majid Boujarzadeh
Director General, Public Relations, Iranian Ministry of Petroleum

A key development having transpiring Iran's petroleum industry over recent months has been the shift from traditional agreements to attracting investment into genuine partnership with the private sector and domestic and foreign investment. If institutionalized properly, this change may determine the future of the petroleum industry over the coming decade. Minister of Petroleum Mohsen Paknejad has announced that the country's crude oil output capacity has increased 127,000 b/d on average over the past year. He has said oil production is required to reach 4.580 mb/d under the 7th Five-Year National Economic Development Plan. This objective could not be realized unless extensive investment is attracted, terms and conditions of contracts are diversified while structural barriers in the upstream economy are removed. A May event on investment in the petroleum industry marked a turning point in the new vision. For the first time, NIOC introduced its projects to potential investor and traditional frameworks like buyback and IPC

were gradually set aside. Under new contract types, in lieu of NIOC being the client, it would partner the private sector. That has helped build confidence among local companies, let alone give impetus to foreign companies to eye renewed investment in Iran's market. Striking deals worth upward of \$5 billion in the upstream sector and \$2 billion in the value chain and public-private partnership (PPP) indicates that a new atmosphere is taking shape. In the meantime, under the 14th Administration, the NIOC has been playing a more supporting role through guaranteeing contracts, contributing to financing and enabling SMEs to become influential actors. The Iranian oil market has preserved its attractions to foreign investment; however, it is noteworthy that Iran's petroleum industry is standing at a sensitive point. One the one hand, there is necessity for enhanced production and investment to realize development objectives while on the other, time crunch is felt as the age of oil is on the decline. Changing vision vis-à-vis investment attraction is no longer an option, rather than that it is a strategic obligation.

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Colombia Offshore Energy Hopes Wane
Hopes among foreign energy companies that Colombia's offshore acreage could serve as a key source of future oil and gas supplies are being dashed as many exploration projects lag expectations, with unwelcomed regulation further deflating optimism. These findings were set forth in a Reuters report on August 8. The disappointing finds and regulatory roadblocks are pushing some oil and gas companies to abandon Colombia for neighboring countries like Peru, where incentives for E&P have become clearer. Despite the country's increasing reliance on foreign energy, the government of President Gustavo Petro has defended a ban on fracking and imposed stricter rules for exploration and production of conventional oil and gas, creating delays and limiting opportunities for private investors in the industry.



Tullow Rectifying Water Issues in Ghana
Production from the deepwater Jubilee oil field offshore Ghana was impacted by a higher-than-expected water cut from certain wells during the first half of the year. This impacted riser stability on the field's eastern side, operator Tullow Oil said in an update. However, following the introduction of riser base gas lift in this area, more normal production has been restored and stabilized. The partners have now sanctioned extending riser base gas lift to Jubilee's western flank and expect to implement the system here over the next few years.



NEO NEXT Joins UK North Sea Producers
NEO NEXT Energy and Repsol Resources UK have merged to form NEO NEXT Energy. This will be one of the largest offshore oil and gas producers on the UK Continental Shelf (UKCS), with projected output this year averaging 130,000 bbl/d of oil. John Knight, executive chair of NEO NEXT, said the combination would provide "much more scale and diversity and opportunities for cost consolidation and portfolio high-grading, giving resilience despite the tough conditions in the UK. We will certainly look to be making more value accretive acquisitions." The joint venture is owned 55% by NEO UK and 45% by Repsol E&P Group. It operates or is a partner in various long-established and emerging production hubs in the UK central North Sea.

Sunda in Gas Talks with Philippines
Sunda Energy's recent business update revealed on gas assets in Southeast Asia. Sunda expects up to nine new service contracts to be signed in the near future for oil and gas activities in the Philippines. Last August, the company applied for two petroleum service contracts for offshore license areas in the 1st Conventional Energy Bid Round of the Bangsamoro Autonomous Region of Muslim Mindanao in the Philippines. The two blocks are in the Sulu Sea and are said to contain gas discoveries with upside potential.

Woodside Updates Australia Development Drilling
Woodside Energy has secured environmental approval for development of the XNA-03 well offshore Western Australia via existing infrastructure, the company said in an operations update. This should support sustained gas production to the onshore Pluto LNG complex. Supplies were recently boosted further by startup of the PLA-08 subsea well. At the offshore Scarborough gas-condensate field development, which will export production to Pluto LNG, installation, testing and pre-commissioning of the subsea infrastructure is close to completion.

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2nd Jacket Loaded at SP11 Destination

The second jacket for the SP11 development at Block 118 was loaded at the SP11 destination on August 15. The jacket is a steel structure that will house the wellhead and Christmas tree. It is the largest structure to be loaded at the destination since the start of the SP11 development. The jacket is being loaded onto the vessel 'Sunda' for transport to the destination. The vessel is expected to arrive at the destination on August 18. The jacket is being loaded onto the vessel 'Sunda' for transport to the destination. The vessel is expected to arrive at the destination on August 18. The jacket is being loaded onto the vessel 'Sunda' for transport to the destination. The vessel is expected to arrive at the destination on August 18.

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Oil Markets

Oil prices fell on Monday as investors digested reports that the U.S. economy is cooling. The U.S. economy is cooling, and investors are worried about a recession. This has led to a decline in oil prices. The U.S. economy is cooling, and investors are worried about a recession. This has led to a decline in oil prices. The U.S. economy is cooling, and investors are worried about a recession. This has led to a decline in oil prices.

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West Karoun Output Exceeds 500,000 b/d

Photo: MOJTABA MOHSENI

“ Besides the agreements signed for the development of the Gordan and Pazan gas fields back then, two more agreements are expected to be signed for the gas field development ”

“ When a country does not face restrictions and sanctions, that may be appropriate, but our country is under sanctions and we can rely on domestic companies, therefore considering big contracts would not be logical ”

Upstream Oil Investment Strategy to Change

■ Iran's petroleum industry experienced a turning point in May 2025.
■ National Iranian Oil Co. (NIOC) introduced more than 200 investment opportunities worth \$137 billion, signaling its inclination for partnership with the private sector and foreign investors. Amir Moqiseh, NIOC director of investment and business, tells "Iran Petroleum" that Iran's new oil strategy is translated into sweetening terms of oil contracts, hedging investment risks, ending restrictions enshrined in old contracts and full support for the private sector. The following is the full text of the interview he gave to "Iran Petroleum":

What has been the first and foremost tangible result of introduction of investment opportunities?

In the wake of the event, which marked a turning point in NIOC investment, we have been seeing a warm inclination vis-à-vis the upstream oil sector. It was also accompanied with some decisions, which the Ministry of Petroleum and NIOC had long sought. A case in point was the decisions about the business atmosphere

in the upstream sector. Previously, the upstream business sector was limited to buyback and IPC agreement types, whereupon investors stepped into various sectors and received return on investment within a specific framework. In this method, due to the lack of a transparent and predictable framework, we have a limited number of players. In other words, only investors well familiar with oil and investment literature were engaged. The key event with the May event was that for the first time, we exposed all NIOC projects to public display. The other point was the presence of officials and unveiling of packages of facilities

like the Economic Council's decision on facilitating and encouraging upstream contracts, financing of upstream oil contracts, and NIOC's approach in using public-private partnership (PPP). In the end, the private sector and the audiences concluded that NIOC was shifting away from the principal-agent system to embrace partnership with the private sector, which is promising. Another issue was petrochemical companies' rapturous welcome in the wake of our negotiations in the May event, which was due to modifications in the internal rate of return on investment, financing and facilitation and encouragement by the Economic Council. Besides the agreements signed for the development of the Gordan and Pazan gas fields back then, two more agreements are expected to be signed for the gas field development.

Apart from packages of facilities, what steps have been taken to change the view of the audience and win their confidence?

We have tried at NIOC to make changes tangible for the audience. To that effect, we have changed the frameworks that have taken shape in the past – frameworks that were helpful in the past, but they need to undergo revision now. For instance, NIOC's positions were firm and unchangeable in the past and we were by no means ready to haggle on our principles despite their divergence with the market and business rules; however, during the May

event, we showed that this view has changed. All these changes and updates led to rapturous welcome for upstream and IPC contracts. Another issue was the return of foreign companies with which we could interact under conditions of sanctions. Some of them had suspended their contracts, but we saw them cozying up to us. Our own domestic companies also broadly welcomed this new approach of NIOC.

In light of the necessity of domestic investment and the breadth of the upstream market, what solutions have you developed?

NIOC projects are mainly multimillion-dollar ones and we always sought big investors. In fact, our impression was that the upstream sector is reserved to bigwigs. When a country does not face restrictions and sanctions, that may be appropriate,

but our country is under sanctions and we can rely on domestic companies, therefore considering big contracts would not be logical. Therefore, we split the upstream economy and sought to make our contracts smaller in a bid to facilitate the private sector's partnership and make financing feasible in the local capital market. In this regard, we pursue PPP agreements in drilling rigs and crude oil processing units with NISOC, Pars Oil and Gas Co. (POGC) and IOOC, which we hope would result in good results soon.

What challenges exist in the way of domestic investors?

As far as the upstream sector is concerned, we should keep in mind the fact that due to the weakness of economics of contract, we do not have economically powerful companies in the upstream sector. In other words, these companies are not financially able to invest in



What agreements have since been signed and how much investment has been attracted?

In the upstream sector, we absorbed about \$5 billion in investment, the bulk of which having been struck with the steel industry and petrochemical holdings. In the value chain supply

and PPP contracts, we have \$2 billion worth of agreements, some of which have already been signed, and some are near finalization and they are all BOO. For instance, two offshore rig contracts were signed between Hamid Bovard, CEO of NIOC, and a consortium led by Bank Shahr to add two offshore rigs

to national offshore drilling fleet. In addition, Iranian Offshore Oil Co. (IOOC) is signing deals for two more offshore rigs. National Iranian South Oil Co. (NISOC) is set to cut deals for 20 onshore drilling rigs under BOO framework. Negotiations have been held for adding 500,000 b/d to the crude oil processing

capacity of skid-mounted facilities. In continuation of the May event, we have undertaken more measures and we are trying to provide various business modules. For instance, we have reached agreement with National Iranian Tax Administration (INTA) to issue transparent tax instructions for the

upstream oil sector. We have also held talks with Social Security Organization (SSO) regarding insurance instructions. We are also working out mechanisms to encourage investors to invest in the upstream sector, particularly high-risk domains. In short, we are trying to broaden the business space.

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In the wake of the 12-Day Imposed War, NIOC is contributing to investment by local companies in a bid to reinforce them economically
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The petroleum industry faces an expiry date. Part of this industry pertains to valuable underground resources and another part is associated with its marketing and monetizing
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multibillion-dollar projects. The companies that have such capacity are affiliated with other institutions like banks. In fact, we do not have any companies in the upstream sector to have earned revenue via oil business. Of course, the bulk of this challenge is directed at the economic aspects of our contracts due to the absence of precise calculations in the past and low profits for companies. However, with a new approach that has taken shape at the Ministry of Petroleum for further sweetening the terms of contracts, we would in the midterm see oil business companies gain power. However, to reach that point, existing companies need assistance and reinforcement. NIOC is best-placed to handle this job, both financially and in terms of prestige.

What can NIOC do in overcoming challenges in the way of investment in upstream projects?

Currently, we focus on NIOC using its standing in the capital and money market to find legal and structured solutions for supporting small and medium enterprises so that they would gain assets through agreements signed therewith. Normally, our assumption is that the investor would provide full financing, after which the capital would return. In the wake of the 12-Day Imposed War, NIOC is contributing to investment by local companies in a bid to reinforce them economically. We have also told agent banks that we are ready to guarantee investment contracts. We recently did so for two private firms. We plan an event in this domain to reduce uncertainty and bolstering hope among investors in the upstream sector. In fact, assuming the persistence of sanctions, we intend to make maximum use of local potential through a more effective role by NIOC. We have so far seen good cooperation on the part of the Central Bank of Iran (CBI) and Securities and Exchange Organization (SEO). We will soon unveil new instruments, as well. We also intend to proceed with the

project company mechanism for investing in crude oil sales, in collaboration with SEO and an investor. National Financing Council is set to adopt a decision for the Petroleum Industry Guarantee Fund. Such big steps indicate that NIOC, banks and National Development Fund of Iran (NDFI) are offering full-throated support to private firms to boost their economic basis. In parallel, we are modifying the terms of contracts to facilitate their terms. We intend to make them regional and logic. Some risks pertain to state interference with contracts, for whose removal, the Council of Ministers are reviewing a PPP bylaw that would hedge risks which the private sector cannot manage. That would give assurance to the private sector and investors. Throughout the contract, the capital and the profit considered at the beginning would not be harmed.

Apart from sanctions and political restrictions, what perspective do we need to adopt not to lag behind the world?

Our measures show that we have mobilized NIOC's capacities to make maximum use of local potential under the present circumstances and we will definitely do so. However, one reality should not be ignored. All global estimates indicate that the oil boom period is limited and it would be unacceptable to imagine that we can use oil resources for an unlimited period. There may be disagreements on the year when oil would expire, but the very principle of expiry is agreed upon. Under such conditions, the top priority for the country and NIOC should be to transform the underground wealth into surface wealth. In fact, gone is time when we could maintain oil for future generations. Therefore, we should focus our efforts on speeding up oil extraction and sales to use oil revenue as a generative wealth. For this purpose, we need to adopt courageous and audacious decisions.

Will such alternative wealth be sustainable?

Most world nations are moving in such direction. We should seek how Saudi Arabia, Kuwait or Qatar are using their resources or why oil companies in neighboring countries have changed their names to energy firms. We need to find out how these companies change their missions and approaches. For instance, Qatar Petroleum has become QatarEnergy. Saudi Aramco is also set to step into renewables. In fact, these countries have made forecasts for alternatives to oil in the long-term to contribute to global energy supply. The path is clear, but we need to accept in the first step that the time for using oil resources is limited and there is no time for trial and error in development and exploitation of oil resources. We need to acknowledge that as old as an oil company may be, it had better seek assistance from the private sector in some domains like field development.

How attractive can the Iran market be for foreign investors?

Despite all of its bottlenecks, the Iran market continues to attract foreign investors, particularly because we have created new attractiveness in contracts and projects. However, some new risks need to be removed because we have already shown our foreign partners in buyback deals that we remain committed to our obligations. Therefore, we do not face any tough way to bring foreign investors onboard, but as buyback contracts have shifted from short-term to long-term we need to give assurances for political and security stability.

Should sanctions be lifted and economic overture occur, what would be the challenge to the petroleum industry and, if any, what would be the solution?

Under the present circumstances, in addition

to the necessity of removing sanctions and injecting new resources, we need to make serious modifications into the governance and management system. We ought to guarantee support to managers who assume responsibilities in a bid to spare them any risk in decision-making. Therefore, in my view, removal of sanctions and giving assurances to managers would enable them to make decisions in favor of national interests. That would not mean giving freedom of action to managers for abuse of authority, rather than that we want them to make the best decision at sensitive junctures in favor of the country. The petroleum industry faces an expiry date. Part of this industry pertains to valuable underground resources and another part is associated with its marketing and monetizing. This wealth could not be renewed. In some cases, much more restrictive than external sanctions are internal bureaucracy and unsettling conditions.



West Karoun Output Exceeds 500,000 b/d



The West Karoun region has gained fame over recent years for being the most important center of Iran's petroleum industry development. Located along Iran-Iraq border, West Karoun is home to a group of massive oil fields with hundreds of billions of barrels in potential reserves. West Karoun owes its significance not only to its massive reserves and to its role in national energy supply; rather, its geopolitical position in regional and global energy equations. The Iranian Ministry of Petroleum has adopted numerous plans for increased output, using cutting edge technologies and attracting investment into this zone.

While many regional oil producers have relied on international firms to proceed with their projects, sanctions-stricken Iran has experienced a different path. West Karoun development symbolizes a combination of local capabilities, technological cooperation and initiative in project management. Of course, this path has not been without challenges as it faces numerous barriers varying from financial shortages to environmental problems and administrative red tape. Nasrollah Zarei, CEO of Petroleum Engineering and Development Co. (PEDEC), said oil production capacity in West Karoun has exceeded 500,000 b/d, owing to implementation of modern processing and drilling projects and coordinated use of local capacities and drilling and operation technologies by subsidiaries of the Ministry of Petroleum. He reiterated that development of the Azadegan, Yadavaran, Sepehr and Jofair fields was continuing in full swing, noting that Iran has largely overcome restrictions caused by sanctions and foreign investment shortages.

In this report, we review the most important measures undertaken by PEDEC over the past year, prioritized

CTEP, Missing Link

As one of the largest oil fields in Iran, the South Azadegan oil field had long needed a central treatment/export plant (CTEP) to launch wells drilled there. Zarei said: "In one case, to make up for shortages, we set up a prefabricated unit, but the main link of development was CTEP." As soon as the first train of CTEP came online this year, there would be no longer any restriction to output hike. Not only will this unit free up the capacity of completed wells, but it will also facilitate gathering, compression and transmission of associated petroleum gas. Under plan, 200 mcf/d of processed gas would be transferred from CTEP to NGL 3200 to compensate for capacity shortages. The objective is to reach the full capacity of 500 mcf/d in the processing of West Karoun fields at NGK 3200 by September 2025. That would not only help lift oil output, but it will also prevent gas flaring to generate value-added for the country.



projects in West Karoun, technologies used there, local manufacturing of equipment and challenges lying ahead and finally investment attractiveness to domestic and foreign actors.

Output Hike

Development of West Karoun fields, jointly owned with Iraq, have grown into a priority in Iran's petroleum industry. The North Azadegan, South Azadegan, Yadavaran, North Yaran, South Yaran, Azar and Sohrab fields are some of this massive oil body stretching along the border with Iraq. Estimates show that these fields hold

more than 67 billion barrels of oil in place. Recovering only a portion of these reserves could elevate Iran's status in global oil market.

Based on plans mapped out over the past five years, the Ministry of Petroleum expects to increase the West Karoun production capacity to upward of 1 mb/d. Such output capacity has partly been achieved as production from these fields has significantly grown over recent years. Operation of new projects at South Azadegan and gradual development of Yadavaran, particularly in partnership with local contractors and universities, has made great contribution to this increase.

Ever since the 14th Administration took office, development of joint fields at West Karoun has been prioritized. Merely in the second half of last calendar year (to March 2025), an 80,000 b/d hike was achieved. From August 2024 to August this year, over 93,000 b/d has been added to the national oil output capacity. Against the backdrop of international restrictions, this figure is specifically indicative of Iranian petroleum industry racing ahead. One key measure has been the establishment of prefabricated desalination units at Cheshmeh Khosh and Dehloran fields. Working in parallel, these units process up to 30,000 b/d of crude oil. Their main advantage is the pace of installation and operation in less than one year, which is a record in Iran's petroleum industry. Most fields in Ilam Province carry their oil to these units to be processed before being transmitted to consumer points.

South Azadegan Phase 1

South Azadegan is among the largest jointly owned oil fields in Iran. Drilling operations in Phase 1 of South Azadegan are nearly over. Of a total 206 wells drilled in this field, only three were eliminated due to changes in reservoir studies and five others were allocated to wastewater

injection and field studies. Thus far, 182 wells have been delivered to Arvandan Oil and Gas Production Co. (AOGPC). Production from Phase 1 has reached 165,000 b/d. Completion of remaining wells, requiring acidizing, bringing-in and final testing, would be finished soon. In other words, after years of investment, South Azadegan has reached a point to play a central role in Iran's energy security.

Hoveyzeh Marshes

One key aspect of development in West Karoun is environmental concerns. South Azadegan and Yadavaran are both next to the Hoveyzeh Marshes that represent a natural habitat in Iran. The drying-up of parts of this wetland over recent years has given rise to concerns on the impacts of oil development on the environment. The Ministry of Petroleum has announced in the new projects it would take into account environmental concerns. Building access roads with minimum destruction, management of wastes and recycling of water in the drilling process are among measures aimed at minimizing damage. However, environmental experts keep laying emphasis on the necessity of stricter supervision and application of clean technologies. Zarei noted that oil installations impact on less than 0.5% of the total 120,000 ha of wetlands. He said that the oil fields located in the Hoveyzeh Marshes have so far earned the country \$40 billion, and about another \$42 billion expected over five years. This data indicates the high significance of these fields although managing development and the environment at the same time poses a serious challenge.

Modern Technologies

One key challenge associated

with West Karoun fields is to increase the rate of recovery, which in certain cases is estimated at below 10%. To deal with this problem, the Ministry of Petroleum concentrates on enhanced oil recovery / improved oil recovery (EOR/IOR) technologies. Water and gas injection, horizontal and radial drilling, hydraulic fracturing and modern drilling technologies are among measures under way at these fields. Application of sophisticated technologies to West Karoun development has been a turning point over the past one year.

For the first time, radial drilling was used in the Aban field. Using this type of drilling, secondary branches are created from a main well to reach the main reservoir. It can help significantly increase well productivity and improve the ratio of oil to water. Cooperation with Russian contractors in this sector has opened a new way for technology to be transferred into Iran.

Furthermore, hydraulic fracturing using acid has been planned for the first time in West Karoun. This operation is planned to be implemented in the Sepehr and Jofair fields by December. If successful, it can be used as a new model for improving recovery in other carbonated fields in Iran.

Injecting water from the Arvandroud River into West Karoun fields is also under way. After final confirmation, it can largely help boost recovery from reservoirs with low recovery.

Projects Under Way

Referring to projects under way by PEDEC, Zarei said: "In the Yadavaran project, drilling of 24 wells started with 4 rigs, which is expected to raise the field's output by 42,000 b/d. This project is set to come online by March 2027.

Negotiations are under way with a Chinese partner and a local company for the second and third phases." "With full operation of the second phase, the production capacity of the Yadavaran field would exceed 165,000 b/d. In the Azar field, as you know, the first phase has become operational while the second phase is under development upon the Economic Council approval," he said. "Regarding the Changouleh field, contract for its development was signed with OIEC in June 2024, and construction is under way. The contract for the second phase development of the Masjid Soleiman oil field, the oldest oil field in Iran, was signed with Sina Energy Development Co. in March 2024, and the project is under way. At the Sohrab oil field, a well is producing while development drilling operations are set to begin as a new drilling rig is installed."

Drilling Fleet Needs Expansion

Currently, 16 drilling rigs are operational in West Karoun. It is not a small figure when compared with regional nations, but given growing domestic need, it is necessary to add to these rigs. PEDEC has suggested IPC contracts and new supporting policies for meeting these needs partly. If confirmed, next calendar year would see a significant increase in the number of rigs.

Domestic Manufacturing

One of the key achievements of recent years has been the growth in local manufacturing in oil projects. At South Azadegan's CTEP project, more than 85% of equipment is homegrown. Moreover, contracts have been signed with the domestic manufacturers of flexible and nonmetallic pipes in Yazd and Shiraz. These pipes are specifically destined for sensitive areas like

the Hoveyzeh wetlands as they can resolve the corrosion problem.

Zarei said although Iran's petroleum industry has managed to race ahead despite sanctions, access to state-of-the-art technologies could accelerate the current pace.

Attractive Investment

West Karoun is highly attractive to foreign investors. The massive capacity of reservoirs, geographical position and proximity to Iraqi border have made this area a potential investment hub in the petroleum industry. Although sanctions keep international companies from investing in Iran, some Asian and regional companies are highly interested in these projects. New oil contracts have been designed over recent years with a view to attract investment and transfer technology into West Karoun fields. The

new contracts are yet to become operational; however, the prospect of future cooperation is replete with hope if sanctions are lifted. In economic terms, development of West Karoun can increase oil production while creating jobs massively in the region and make downstream industries more prosperous. Refineries and petrochemical plants in Khuzestan and neighboring provinces can benefit from the advantages of enhanced oil supply by West Karoun. One key point in Zarei's remarks is his emphasis on the economic attractiveness of Iranian oil projects for investors. He said the rate of return on investment in Iran is much more than in regional markets. "Although Iran's petroleum industry has never been closed to foreign contractors, Iran is ready to reconsider processes to launch new cooperation," he said.

West Karoun Future

Despite sanctions, shortage of foreign investment and environmental challenges, West Karoun has reached the point where it is producing more than 500,000 b/d of oil. This achievement shows success of the strategy of concentration on joint fields and reliance on domestic potential. However, the way lying ahead needs much more investment, application of modern technologies and further interaction with the world; otherwise, enhancing recovery and preserving production capacity in the long-term would be difficult.

Sitting atop one of the largest hydrocarbon reservoirs in the world, Iran may continue to play a key role in international energy security. Development of West Karoun is not merely a national project; rather, it is part of a bigger future energy deal in the Middle East and the world.



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As the first step in the Caspian Sea energy sector was taken with the establishment of this company, it was necessary first to begin exploration activities
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Three Caspian vessels were tasked with supporting this platform. In late 1990s, the AKSSDU was installed on the Sardar-e Jangal structure and two wells were drilled
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Iran Set to Unlock Caspian Sea Energy Gate

■ The CEO of Khazar Exploration and Production Co. (KEPCO) Mohammad Hossein Daneshfar, in a message on the sidelines of the 29th Oil Show in May, announced resumption of exploration activities in shallow waters of the Caspian Sea after a 28-year hiatus. News of resumption of these activities came after Minister of Petroleum Mohsen Paknejad on May 9 instructed the relevant company to resume exploration drilling in the shallow parts of the Caspian Sea by installation of the North Drilling Co. (NDC)'s drilling rig in the Roudsar structure. A well was last drilled in the shallow portion of the Caspian Sea in 1997. Daneshfar told "Iran Petroleum" drilling in the deep portions of the Caspian Sea had come to a halt in 2014, which is now expected to resume after Amirkabir Semisubmersible Drilling Unit (AKSSDU) has been repaired. The following is the full text of the interview he gave to "Iran Petroleum":



🔍 **Hydrocarbon resources and exploration of oil and gas reserves in the Caspian Sea are paid less attention than the resources in southern Iran. Could you tell us first about the history of studies and exploration operations in the Caspian Sea and KEPCO's responsibility?**

KEPCO is a subsidiary of National Iranian Oil Co. (NIOC), which

was established in late 1990s. Two major studies were defined since the establishment of this company. As the first step in the Caspian Sea energy sector was taken with the establishment of this company, it was necessary first to begin exploration activities. Alongside these exploration activities, some seismic and drilling data was purchased from neighboring countries. Therefore, 28 and 35 prioritized hydrocarbon structures were identified in two phases, the

AKSSDU was built and supporting vessels were installed on the Sardar-e-Jangal structure at the depth of about 700 meters, and two wells were spudded to facilitate access to oil in the Iranian portion of the Caspian Sea. KEPCO's geographical domain of action covers the southern part of the Caspian Sea and the three northern provinces of Gilan, Mazandaran and Golestan. KEPCO is tasked with exploration, development, production, storage, processing and transfer of crude oil and gas. Of course, in the years leading to the Islamic Revolution, some seismic tests had been implemented and some wells drilled. There were also portions where no 2D seismic testing had been done, which were completed by the NIOC Directorate of Exploration. All this old information and whatever achieved in new seismic testing was compiled by the South Caspian Study Group (SCSG). The study group comprised an international consortium. Based on the results of these studies, 28 potential structures were identified. In the following years, these studies were completed and their data updated, leading finally to the identification of 35 hydrocarbon structures in South Caspian. Based on these studies, exploration, development and production structures were prioritized. Since based on the said studies, the bulk of exploration potential of hydrocarbon resources was identified in the deeper parts of South Caspian,

construction of a semi-submersible platform started, which was completed in late 1990s. A decade later, the AKSSDU was built in Sadra Yard. Three Caspian vessels were tasked with supporting this platform. In late 1990s, the AKSSDU was installed on the Sardar-e Jangal structure and two wells were drilled. In the end, oil was struck in the Caspian Sea for the first time, after which it became clear there was greater potential for development and production in this sector. 3D seismic testing was considered in four blocks.

🔍 **After initial exploration, what plans did KEPCO envisage?**

Identifying prioritized structures of the Caspian Sea and planning for continued drilling in them were among plans that were developed in the wake of initial exploration. Furthermore, seismic plans were drawn up for some portions of South Caspian, which we had information about. The Block 13 of South Caspian is a case in point. That led to onshore seismic operations east of the Caspian Sea, as well as the shallow and TZ zone bordering Golestan Province. In parallel with these measures, we started work in the shallow portion, too. An agreement had been signed with NDC for drilling an exploration well in Block 18. A drilling rig was installed in the Roudsar structure. After a 28-year hiatus, drilling resumed in the shallow portion of the Caspian Sea. Roudsar

was one of the 28 and 35 structures identified previously. In parallel with drilling in shallow waters, we focused on the deep portion. As a semi-submersible platform had remained non-operational since 2016, it needed overhaul. We handled its overhaul and we hope to resume exploration operations in the deep portions after overhaul.

🔍 **What has been the result of activity in the shallow portion of the Caspian Sea?**

Over recent years, wells had been spudded in the shallow portion of the Caspian Sea, the last of which dating from 28 years. Finally, after a 28-year hiatus in drilling in the shallow portion of the Caspian Sea, NDC's Sea Breeze 1 drilling rig was installed on the Roudsar structure in coincidence with the 29th Tehran Oil Show, and drilling began. We are currently waiting for the results of this exploration well to see if they have been successful. The following drillings aimed at development and production would continue in this structure.

🔍 **How is the AKSSDU overhaul planned?**

To overhaul the AKSSDU, 15 packages have been defined and presented. We have received proposals, based on which we are gradually assigning them in various sectors to be able to push ahead with overhaul within the timeframe. After bringing the AKSSDU online, we

🔍 **Given the resumption of exploration in the Caspian Sea, what are the prioritized projects and the vision of the company for the upcoming five years?**

Most structures had undergone only 2D seismic testing, full data was not available about the drilled wells in neighboring countries, and necessary exploration

wells had been spudded in the South Caspian structures, the studies conducted in the Caspian Sea are of low certainty. However, what has been achieved from the studies indicates that a massive volume of hydrocarbon reserves may exist in the Caspian Sea structures. As in the Sardar-e Jangal field, the existence of oil with an API gravity of 39 has been proven, it seems

that based on our data, we may proceed with exploration work in the remaining structures and add to the hydrocarbon reserves in place, as well as recoverable hydrocarbons. One of our priorities over five years would be to repair the AKSSDU, without which nothing can be done in the Caspian Sea. Therefore, it is necessary to finish overhauling this platform so

that by drilling exploration wells the status of a number of deep structures of the Caspian Sea would be decided. 3D seismic testing has been suggested for some of these structures, which we are trying to bring to conclusion in the deep portion to complete available information and reduce uncertainties. In the shallow portion, continued activities depend

on the results of exploration wells in Roudsar. We are currently at the end of the Block 13 seismic testing project, i.e. data processing. Therefore, based on the results of this seismic testing, if any structure is identified in the shallow portion of the Caspian Sea, we can make plannings for onshore drilling or drilling in the shallow portion of this block.

“
for the purpose of completing information and reducing uncertainties on current seismic data, 3D seismic operations have been envisaged in some of Caspian Sea blocks.”

“
During the event held in May to introduce opportunities for investment, this type of contract was discussed, which would definitely be attractive to foreign investors”

can concentrate on the prioritized structures of the deep portion of the Caspian Sea and resumption of exploration operations in this sector.

🔗 **Can you explain us the latest measures taken in the Sardar-e Jangal field and exploration blocks?**

In the Sardar-e Jangal field, some opportunities have been highlighted for development. We also need complementary data like long-term test of drilled wells, as well as drilling to explore deeper reservoirs in this field, which lies within the framework of our five-year plan. In other exploration blocks, all our activities in the deep portion depend on overhauling the AKSSDU. In the shallow portion the Roudsar, an exploration well is being drilled. After the

end of drilling and conducting tests, we can express our views on this structure. In other blocks of the shallow portion, seismic testing projects are under way, the results of which can help identify new structures. As it was said, for the purpose of completing information and reducing uncertainties on current seismic data, 3D seismic operations have been envisaged in some of Caspian Sea blocks, which is noted in the five-year plan of KEPCO.

🔗 **Apart from what has been clearly said, what is your specific plan for production from the hydrocarbon fields discovered in South Caspian?**

Exploration, development and operation in the deep portion of the Caspian Sea require high investment and sophisticated technology. We are trying to attract investment in development. For instance, development of the Sardar-e Jangal field is estimated to need \$7 billion in investment. Since this field was introduced to the NIOC Investment Opportunities Seminar, we hope that local investors and international companies would express their readiness for developing this field.

🔗 **What are your plans to transform KEPCO into an energy hub in northern Iran?**

When we talk about an energy hub, it means that pieces of a puzzle should be placed together to reach the final form. If we can embark on development and production in this sector, we can undoubtedly

set up a hub. If we take into consideration gas imports or exports, it partly pertains to oil or gas production and partly to gas imports from neighboring nations. All these issues are not in control of KEPCO. However, what is clear is that if we can move toward production in the Caspian Sea, particularly gas production, we may take effective steps in supplying gas to Northern provinces that experienced pressure fall-off during peak consumption. As far as the deep portion is concerned, we need to attract technology and investment, after which we would decide on storage and transmission of oil and gas from this portion based on plans. It is noteworthy that Iran has good infrastructure for transmitting crude oil and petroleum products. We may benefit from this capacity to expand cooperation with neighbors of Iran in the Caspian Sea.

🔗 **Is KEPCO self-reliant in terms of manufacturing specific equipment for the deep portion of the sea or does it need international cooperation?**

Currently, we are currently using some equipment and drilling tools supplied by domestic companies for deep waters. For instance, in previous drillings, we concluded that the drilling mud used in South Caspian should be different from others. That is why we drew up a project last calendar year to adapt the drilling mud with the geological layers of South Caspian. We also focused on adaptation of drilling bits. There is also equipment that we may replace with local products, including pumps or diesel. However, generally speaking, I would like to note that Iran’s onshore drilling industry has more than 100 years of experience. We have also more than 50 years of experience in shallow-water drilling of the Persian Gulf. The maximum depth of water in these operational zones reaches 90 meters. But in the Casian Sea, the wells drilled in Sardar-e Jangal are 600-700 meters deep. Therefore, we needed specific equipment that we

could not manufacture before. Therefore, the main sections of the semi-submersible platform construction in Sadra Yard were done with items mainly imported from abroad. What mattered was to be able to use equipment in the country. However, after some time, in terms of development and control of semi-submersible platforms, we made achievements to get local companies manufacture some parts. The key point is that we should expand our activities in the Caspian Sea and move on a broader basis to focus entirely on full local production. The fact is that if we intend to go toward development and production in the deep portions of the Caspian Sea, we should focus in parallel on developing infrastructure. The AKSSDU alone cannot be of help to us, and similar platforms need to be built so that activity in the Caspian Sea would pick up speed, which would also bring in necessary technology.

🔗 **What is the status of our cooperation and interaction with Caspian Sea littoral states?**

We have had negotiations with neighboring countries since the past that are still ongoing. These negotiations cover a variety of issues, including provision of services and equipment, joint technical and research cooperation, as well as development.

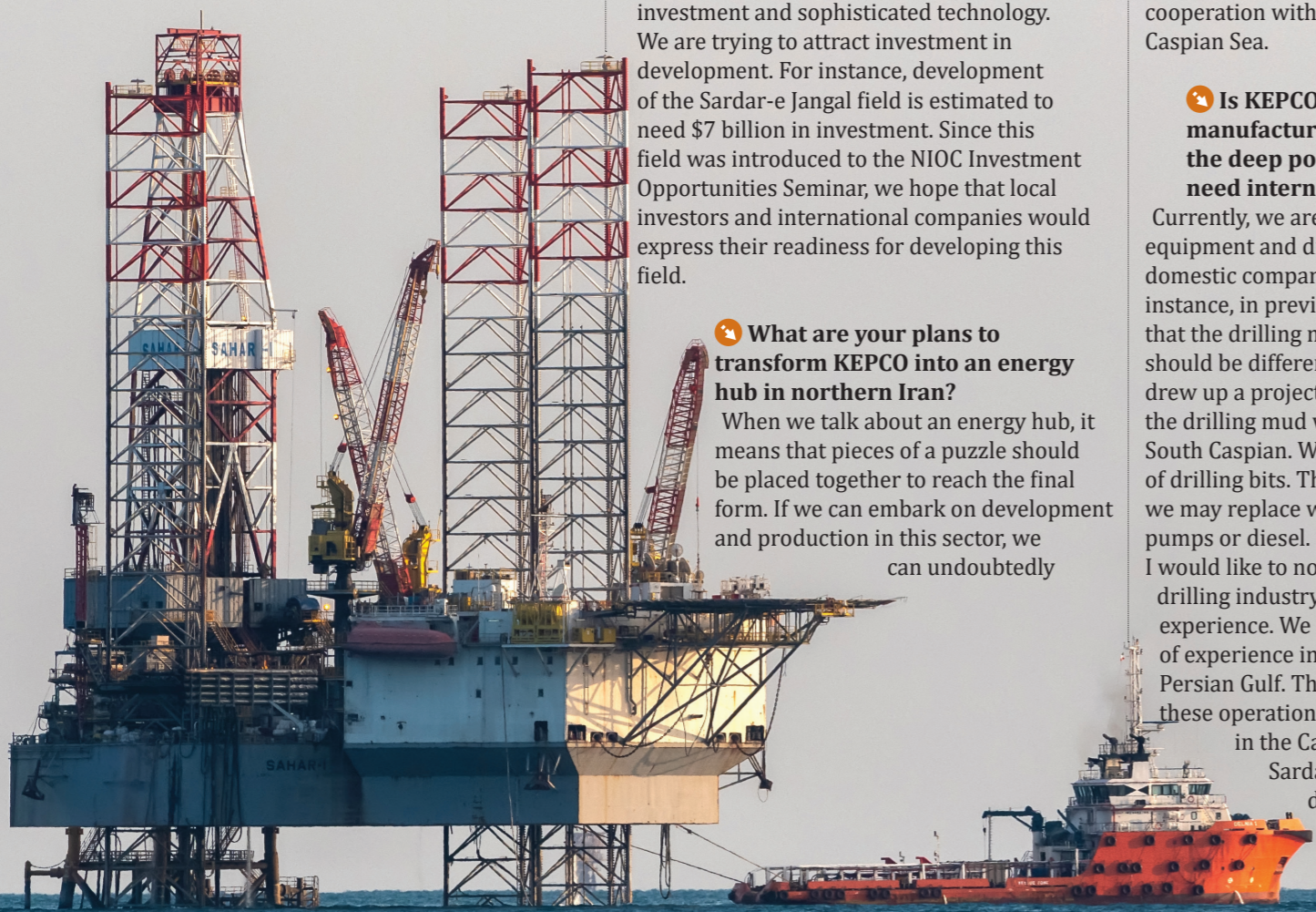
🔗 **How do you assess the Caspian Sea’s hydrocarbon reserves?**

Our Persian Gulf fields are mainly in the second half of their lifespan, some of which being in the phase of secondary recovery. Some gas fields also need development. But regarding the Caspian Sea, the identified structures are rich in hydrocarbon reserves. Despite high uncertainty, we may undoubtedly speak about the volume of reserves in the Caspian Sea after drilling exploration wells and completing seismic operations. However, given the growing trend of energy consumption in the country, increased gas imbalance and the status of fields in southern Iran, it is necessary to move toward

development and production in the north in coming years. In any case, based on the studies carried out so far, the hydrocarbon potential in the Iranian sector might be to the extent to justify any amount of investment.

🔗 **How attractive can exploration and developments in the Caspian Sea be for foreign investors?**

Given the geographical position of the Caspian Sea, which is connected to major consumer markets in both east and west while on the other hand, the existing infrastructure, particularly hydrocarbon transmission pipelines, has pushed to bold relief the specific attractiveness of exploration and development activities of hydrocarbon reserves in this region. Due to growing need for technology and big volume of investment in the Caspian Sea, the model of investment in this zone should be different. In previous years, extensive studies have been carried out to choose the best model of contracting for development in the Caspian Sea. The IPC and buyback contractual framework have been compared. Furthermore, the contract models used in neighboring countries were studied and the best model for Caspian Sea fields is production-sharing agreement (PSA). During the event held in May to introduce opportunities for investment, this type of contract was discussed, which would definitely be attractive to foreign investors. In light of the attractiveness of the PSA model, I think that international overture would favor exploration, development and production in the Caspian Sea. At the event, we introduced 13 investment opportunities associated with field development, exploration and logistics for would-be investors in the Caspian Sea. A number of MoUs have been signed with local and foreign companies about development. We should move to the next phase after carrying out further studies. We had also meetings with several investors about supplying logistic needs, and we received proposals that are under review, after which we would take the next steps about the type of contract.



2nd Jacket Loaded at SP11 Destination

The second wellhead jacket for Phase 11 development of the massive South Pars gas field has been loaded from Khorramshahr Yard where the 2,000-tonne installation was built. Construction of the jacket lasted less than 15 months by Iranians. After installation in its location, Platform 11A, new wells could be drilled with a view to increasing gas recovery capacity. Mohammad Reza Rajaei, SP11 development project manager, said loading this structure would be a turning point in the history of South Pars development and a proof of Iran's determination to enhance recovery from the field it shares with Qatar.

The loading of the 76-meter-tall structure on the 7,000-tonne Mahdis-1 barge was done on the last day of August. It would be transported to Iran-Qatar shared border before being installed at its location.

Productivity Hike

Rajaei said in designing this jacket, for the first time in South Pars offshore structures, design optimization and weight reduction have been used, which would boost productivity and reduce costs.

The SP11 development project

involves two blocks: 11A and 11B. Block 11B was prioritized and it was inaugurated in 2013 by drilling four wells. Gas recovery from this phase has doubled from 10 mcm/d in 2023 to 20

mcm/d now. In parallel with drilling operations at Block 11B, construction of jacket 11A was put on the agenda.

Built over 15 months at SADRA Yard, it is a four-legged structure that would allow for the drilling of 15 wells. It measures 20mx24m on the top drive and 33mx38m on seabed. The structure weighs totally 4,100 tonnes. More than 13,000 meters of welding was needed.

11A Drilling due in Winter

Hamid Reza Saqafi, CEO of Petropars, said installation of this jacket would be done in October so that operations for spudding the first 6 wells would begin in winter.

Referring to the capability of Iranian contractors in implementing offshore projects at South Pars, he said construction of the top drive for SP11 had begun over the past one year, which is now 20% completed. The top drive is expected

to be ready in two years, after which with the completion of 6 wells, gas recovery from the second platform of SP11 would begin. He estimates gas recovery of 28 mcm/d from this platform by March 2030.

"This structure is a clear symbol of domestic capability in implementing massive offshore projects that would raise Iran's share of shared reserves," Rajaei said.

Phase 11 is estimated to hold about 21 bcf of gas in place.

When the 14th

Administration took office last year, 11A was merely 10% completed, which reached 20% in August. He added that 11B was 71% completed in August 2024, which is now 83% completed.

Loading the second jacket and development of 11a would not complement the last link in the South Pars development. It would also send a clear message to the regional energy market. Despite sanctions and foreign companies' pullout, Iran is able to boost its recovery capacity by relying on its own contactors and outdo Qatar in recovery from this reservoir.

SP11 Development Contract

The first agreement for the development of SP11 was signed in 2015 between National Iranian Oil Co. (NIOC) and a consortium of France's Total (forerunner to TotalEnergies), China's CNPC and Iran's Petropars under IPC framework. The project involved drilling 30 wells and building two platforms for the production of 56 mcm/d of gas. After sanctions were back in place, foreign partners pulled out. In October 2019, the project was awarded to Petropars.

South Pars is central to gas production in Iran with its gas production capacity currently exceeding 700 mcm/d in Iran. South Pars covers about 9,700 sq km, 3,700 sq km of which belonging to Iran and the rest going to Qatar.

Loading the wellhead jacket and the presence of entirely Iranian service workers on SP11 indicates Iran's ability to proceed with South Pars development without relying on foreign companies. In addition to technical aspects, this project reflects Iran's determination to enhance recovery and relative advantage in the region. Jacket installation would allow for drilling new wells. Iran is expected to improve its gas recovery by autumn 2017 as this phase is expected to supply 28 mcm/d by then. Furthermore, continued efforts for compression in order to prevent the balance tilting in Qatar's favor show Iran's resolve in maintaining its share of this massive energy riches, upgrading its domestic energy security and strengthening its effective presence in regional and global markets.

Iran Oil Output Capacity Up 127,000 b/d

Minister of Petroleum Mohsen Paknejad has said there is necessary expertise on how to skirt around sanctions in the Iranian petroleum industry.

“Over the past one year, our crude oil production has increased 127,000 b/d on average,” he said.

Asked about the impact of possible return of UN sanctions on Iran’s oil sales, he said: “We have long been faced with oil sales restrictions. Therefore, we have acquired necessary expertise for getting around

these restrictions in the petroleum industry. Under conditions of sanctions, the petroleum industry can map out ways of selling oil despite restrictions.”

He, however, added that snapback would naturally make Iran’s oil sector adopt new ways. “In the race of these restrictions, our hands are not tied down and we will do our best.”

Asked about the quantitative objectives of oil production until the end of the 14th Administration’s

term in office, he said: “Based on quantitative objectives set forth in the 7th Economic Development Plan, we have to reach 4.58 mb/d, which is equivalent to 4.8 mb/d production capacity. Our plans and investment are aimed at such target.”

Noting that a number of petrochemical projects are ready to come online, he said: “I had promised that one petrochemical project would be inaugurated per month. Except for the month when [war] conditions

caused a halt, we will soon see inauguration of new projects in the petrochemical sector, which would help increase national petrochemical production capacity.” The minister said that the Azadegan oil field’s CTEP facility is ready to become operational to help surge crude oil production capacity.

“Operation of this facility would add up to 80,000 b/d to the country’s crude oil production capacity,” he said.

7th Plan Gas Output Target Set at 1.35 bcm/d

The CEO of National Iranian Oil Co. (NIOC) Hamid Bovard has said the gas production target under the seventh National Economic Development Plan has been set at 1.35 bcm/d. He said gas production record has been smashed seven times in the past one year, while the country is still faced with imbalance. Bovard was speaking on the sidelines of the signing of an MoU for studying development and operation of Halegan and Shahin gas fields between NIOC and Iranian Mines and Mining Industries Development and Renovation Organization (IMIDRO), steel companies and MAPNA. “This is the first of kind that such MoU is being signed thanks to the arrangement made by the 14th Administration and follow-up work by the Ministry of Industry, Mine and Trade. This is definitely a strategic measure for national industry,” he said.

114 Oil and Gas Wells Drilled and Completed

CEO of National Iranian Drilling Co. Mehran Makvandi said 114 onshore and offshore oil and gas wells have been drilled, and completed under the 14th Administration. He said that more than 115,000 meters of drilling had been recorded over this period. Makvandi said it included 29 development/appraisal wells and 85 workover wells. “In a bid to overcome challenges and boost recovery, special measures have been envisioned, leading to 43.5% decline in waiting time and increasing productivity from 68% to 76%. Reiterating support by the Ministry of Petroleum and National Iranian Oil Co. (NIOC), he said: “Drilling services units provided 6,463 cases of technical and engineering services to applicants, which was instrumental in the final completion of development and workover wells and helped maintain and increase production.” Makvandi said as soon as the 14th Administration took office, major objectives like increasing oil and gas production and reducing energy imbalance were placed on the agenda. “Relying on the Iran’s largest drilling fleet and bringing onshore gas wells to production on Kish Island, NIDC managed to play an effective role in reducing gas imbalance.

South Refineries Products Transmission Capacity Up 100%

CEO of Iranian Oil Pipelines and Telecommunications Company (IOPTC) Ali Ahmadipour has said operation of the Bandar Abbas-Rafsanjan oil products pipeline is a symbol of national will. He said that this project has been implemented to increase the transmission capacity of petroleum products from the Bandar Abbas and Persian Gulf Star refineries to central and northern Iran by 100%. He said the pipeline is 455 km long, adding that this project would undoubtedly be instrumental in reducing fuel imbalance and securing transmission of products under the present circumstances. The rated capacity of the pipeline is 300,000 b/d, equivalent or 48 ml/d. “The first phase has now come online with 13 ml/d capacity, which would gradually reach full capacity throughout year,” he added. The Bandar Abbas-Rafsanjan and Sabzab-Shazand oil products pipelines were inaugurated through videoconference by President Masoud Pezeshkian and Minister of Petroleum Mohsen Paknejad.

Gasoil Storage up 1.5bn Liters

CEO of National Iranian Oil Refining and Distribution Co. (NIORDC) Mohammad Sadeq Azimifar said Iran has quitted gasoil imports. “Persistence of this trend will save the country \$1 billion a year in hard currency,” he said. He said that gasoil production had increased 3 ml/d since the start of the current calendar year due to the operation of quality upgrading projects in some refineries and increased feedstock supply to them. “Effective measures were also taken with regards to consumption in fighting fuel smuggling, and gasoil consumption dropped by 5 mb/d. As a result, we do not need to import gasoil,” Azimifar said. He said gasoil storage in Iran has increased about 1.5 billion liters year-on-year, adding: “Power plants’ gasoil storage has also been up 60% from the year before. That would be playing a significant role in preventing power outage in the winter.” Regarding fuel apportionment in the country, Azimifar said fuel portions would be allocated based on the function and at the request of the organ in charge like the Ministry of Industry, Mine and Trade and the Ministry of Road.



Over 2,900 km Pipelines to Come Online

Minister of Petroleum Mohsen Paknejad said expansion of infrastructure and pipelines to carry crude oil and petroleum products had been undertaken by the 14th Administration.

“Based on planning, by the end of the 7th Development Plan, 2,900 km of pipelines to transmit crude oil and petroleum products would have been completed and launched,” he said. Addressing a ceremony to officially launch an 800 km oil and petroleum products pipeline, he said building pipelines was a national priority for sustainable development in

various sectors and national energy supply. “As crude oil and petroleum products are produced across the country and particularly in the south, sustainable transmission and diversifying methods of transmission for supplying fuel to consumers would be vital,” he said. The minister said that more than 70% of the country’s gasoline production is in the south, while northern Iran accounts for more than 80% of consumption. “This issue shows the special significance of sustainable fuel transmission,” he added. Paknejad said carrying products by tank trucks cause air pollution, increase

road crash risks and increase fuel consumption. “Expansion of pipelines would facilitate and accelerate fuel transmission, while it would also leave favorable environmental impacts, particularly reduction in fuel consumption and road accidents. That would also help reduce fuel smuggling,” he said. Paknejad said to achieve these objectives, immediately after taking office, the Ministry of Petroleum focused on the expansion of infrastructure and pipelines for transmission of crude oil and petroleum products as one of its priorities.

Chabahar Receives \$10bn Petchem Investment

The CEO of National Petrochemical Co. (NPC) Hassan Abbaszadeh has said the company welcomes investment in Chabahar Port. "About \$10 billion investment has been made in this port to allow for more than 10 million tonnes of petrochemical production capacity," he said. Addressing the ceremony to launch the first phase of a 1000MW power plant in the Makran Petrochemical Park, he highlighted the major energy challenge in the country and said: "The energy challenge in Iran is rooted in the past decisions and behaviors. Although we are an energy-rich nation, we are faced with energy imbalance due to improper consumption pattern." Underscoring the need for energy efficiency and promoting culture of proper consumption in the country, he said: "Construction and development of solar and renewable power plants would be the main solution for countering this challenge. The first phase of the 1,000MW power plant of the Makran petrochemical park is already generating 183MW, but it would finally supply power to the petrochemical facility." Noting the strong growth of the petrochemical industry in recent years, he said: "So far about \$90 billion has been invested in this sector, supplying a variety of products. But a long way still lies ahead for completing the value chain and obtain higher-value products." Abbaszadeh underlined the significance of Makran, saying: "Due to its proximity to consumer markets and access to transnational waters, it has been chosen as the third petrochemical hub in the country. It has big potential for industrial development."

Pazan, Gordan Gas Fields to Supply 31 mcm/d

The CEO of Bakhtar Petrochemical Group Davoud Reza Rabbani has said 24 wells are set to be drilled for developing the Pazan and Gordan gas fields would bring production from the two reservoirs to at least 31 mcm/d. Referring to the agreements signed for developing the two gas fields, he said: "This 20-year agreement involves drilling 24 wells. The initial production would be 8 mcm/d, which would reach 31.5 mcm/d in the final phase. Gas production throughout the duration of contract is estimated to reach 180 bcm valued at \$27 million. Furthermore, 58 million barrels of condensate worth \$4.6 billion would be produced, and the total revenue from this project would top \$32 billion." The first product supplied by this company in partnership with knowledge-based companies was slurry polyethylene catalyst, Rabbani said. "So far, more than 3 million tonnes of products has been manufactured using this catalyst. Furthermore, the gas phase polyethylene catalyst became operational in 2020, the bulk of which has been exported to Russia." Regarding R&D projects, he said: "Projects are underway to produce various grades of polyethylene and convert polymer waste into higher value-added products. In addition, two industrial projects are being pursued in the field of oxygen and special alcohol production, which will replace the costly processes of the past."

Foam-Assisted Lift to Triple Oil Output

The Petroleum University of Technology (PUT), in partnership with Arvandan Oil & Gas Co. (AOGC), has managed to design and manufacture advanced lab equipment and use foam-assisted lift to treble oil production on lab scale. Such breakthrough may bring about a big achievement in operating high water fraction wells. Shahin Kord, faculty member at PUT, said: "Many oil wells using gas lift see a decline in output at the horizontal and directional phase as associated water increases. Foam-assisted gas lift (FAGL) is an effective method in tackling the challenge. By injecting surfactant and forming downhole foam, the density of the fluid column will decline and consequently oil would be transmitted to surface with lower energy." "The route chosen for the implementation of this project includes choosing and testing appropriate foamable materials, modeling and analysis of the sensitivity of parameters effective in FAGL and designing two creative setups. The first step up allowed for examining foamability and the stability of foam and the second one was designed to evaluate the impact of foam on improved production and the ability of surfactants in separating emulsion water from oil at various temperatures and pressures," he said. "The results showed that the optimal choice of foamable material and proper regulation of operational parameters can up to triple lab-scale oil output using common methods."

SP11 Gas Output Totals 357 bcf

Accumulated gas recovery from Phase 11 of the South Pars gas field has increased from 120 bcf to 357 bcf under the 14th Administration, recording a three-fold growth. It was announced at the 22nd gathering of SP11 Management Committee that submitted its latest report on recovery from this phase at SPD 11B and SPD 11A while offering a perspective about the completion of the remaining development phase of South Pars. According to the report, 76,000 person-hours of work has thus far been done in SP11, bringing the accumulated gas output from this phase to 357 bcf. Hamid Reza Saqafi, CEO of Petropars, said the final phases of construction of wellhead jacket of SP11 was completed, adding that planning would begin in coming days to resume loading operations of this offshore structure. Mohammad Reza Chalipa, chief engineer at Pars Oil and Gas Co. (POGC), emphasized the necessity of identifying critical routes and removing existing bottlenecks in this project, saying: "Supply of necessary rigs, construction of offshore platform at SPD 11A, placing order for strategic items and commodities in the drilling sector should be accelerated." SP11 is the last development project among 24 phases of South Pars, which has been awarded to Petropars under an IPC agreement. Touraj Dehqani, the CEO of POGC, also said planning was underway for completing new wells as part of infill wells in South Pars, adding: "Gas recovery from infill wells in this joint field is to increase to more than 15 mcm/d by the end of the current calendar year."

Iran Gas Keep Flowing to Iraq, Turkey

The CEO of National Iranian Gas Co. (NIGC) Saeed Tavakoli has said gas delivery to Iraq and Turkey would continue. He said negotiations on gas imports from Russia were making headway. "The gas grid, without depending on imports, is ready to supply domestic needs in winter," he added. Tavakoli said during cold months, household consumption would be prioritized, adding that gas supply to generative and vital industries would not be cut. "National gas transmission grid is more than 40,000 km long with 350 turbocompressors. The grid stability is preserved by precise management although

numerous scenarios have been implemented to increase resilience and manage crisis," he said. Asked about gas negotiations between Iran and Russia, he said: "Negotiations are 95-99% completed. The essence and type of negotiations has some sort of uncertainty, which depends on a variety of regional, political and energy factors." "Oil is almost formulated, while gas is not so. In oil, price is defined. However, good contacts are underway and we hope to reach conclusion soon," he added. Tavakoli said the process of this agreement may be phase-based. "In phase one, infrastructure studies should be carried

out. Two more issues need deeper negotiations. However, these negotiations are prioritized by NIGC and the idea behind gas imports is to serve generative sectors in the country," he added. He touched on the Nasrabad salt dome storage project whose studies had been implemented earlier, adding: "More storage in the world for hydrocarbon and gas is conducted with gas itself and in depleted reservoirs, but this salt dome enjoys an ideal position near the country's energy hub. We intend €340 million investment in this project, which we hope can proceed on schedule."



“we would give 11.6 mt to the propylene chain, 700,000 tonnes to the methanol chain, 3.3 mt to the ethylene minus polyethylene chain, and 8.6 mt to polyethylene”

“Investment varies depending on gas fields. For instance, the Bakhtar Petrochemical Co. and Petrofarhang Co. consortium agreement is IPC-based that requires \$1.4 billion in investment”

\$24bn Petchem Projects Envisaged in 7th Plan

■ The petrochemical sector is one of the key pillars of Iran's economy and a main contributor to national wealth. That explains the high significance of the 7th Five-Year Economic Development Plan. The petrochemical industry is forecast and planned to experience 8% annual growth under the 7th Plan. Hassan Alimorad, director of planning at National Petrochemical Co. (NPC), said that the perspective defined in the 7th Plan for the petrochemical industry is to reach annual production capacity of 131-million-tonne. He told “Iran Petroleum” that under the 7th Plan, 66 petrochemical projects are envisaged, requiring \$24 billion investment, \$12 billion of which has already been provided. Furthermore, under the 7th Plan, 11.6 mt would be added to the propylene production capacity, 700,000 tonnes to the methanol chain capacity, 3.3 mt to the ethylene minus polyethylene chain, 8.6 mt to the polyethylene output capacity and 3 mt to downstream aromatics output. Below you can find the full text of the interview; Alimorad gave to “Iran Petroleum”:



What is the current perspective of the petrochemical industry in Iran and how much it has grown under the 7th Plan?

Ever since the 14th administration took office, we have been moving in line with the 7th Plan. The goal set for the petrochemical industry under the 7th Plan is to expand the value chain. Under Article 47 of the 7th Plan, we are to reach 131 mt nominal production capacity, which is divided between various branches of the value chain. To break down the figure, we would give 11.6 mt to the

propylene chain, 700,000 tonnes to the methanol chain, 3.3 mt to the ethylene minus polyethylene chain, and 8.6 mt to polyethylene. Owing to our planning, we reached 6.6 mt nominal capacity in the first year of the 7th Plan that coincided with last calendar year. That shows we are not behind the schedule and we forecast to reach the desired capacity by the end of the Plan. Another objective set by this industry in the 7th Plan is national economic growth. As Supreme Leader Ayatollah Seyed Ali Khamenei said, the economic growth rate envisaged under the 7th Plan is 8%. In line with this objective, the petrochemical industry is to grow 8% annually under the 7th Plan that focuses on job creation, reliance on domestic

significant and vital. That is in line with environmental objectives, flare gas capture and gas recovery. We specifically emphasize gas capture in order to help the petrochemical industry make up for feedstock shortages; flare gas capture and methane recovery. One

of the projects currently under way is to build flare gas capture facilities in East Karoun by the Persian Gulf Bidboland refinery. Four flares are set to be turned off completely so that their gas would be used as feedstock for NGL plants at the Bidboland refinery.

capacity and using domestic capital market for financing projects.

How many projects are envisaged under the 7th Plan and how much investment is estimated for them?

Investment varies depending on gas fields. For instance, the Bakhtar Petrochemical Co. and Petrofarhang Co. consortium agreement is IPC-based that requires \$1.4 billion in investment. But, more broadly speaking under the 7th Plan, 66 active petrochemical projects with a nominal capacity of 35 mt and \$26 billion investment are envisaged, which have so far made 60% progress. From these projects, 28 have been chosen that would be monitored exclusively by NPC. These projects need \$24 billion in investment. During the first four months of the current calendar year, about \$12 billion in investment has been made. These projects are prioritized in light of being strategic and their products that are in line with value chain completion. Among these prioritized projects, 15 to 18 would be inaugurated by the end of the current calendar year. Therefore, by realizing the objectives set forth in the 7th Plan and reaching 131 mt production capacity, the petrochemical industry value chain would be developed, and a balance would be achieved between the upstream and downstream development of the petrochemical industry.

How are these projects financed?

Our focus is on domestic capacity.

Therefore, the remaining sum required for investment would be provided by a banking consortium, National Development Fund of Iran (NDFI), the capital market and equities.

How many products would be manufactured for the first time?

We have 15 priority projects, forecast to come online by the end of the calendar year. Some of them are flare gas gathering, increasing refinery feedstock, polypropylene production, sustainable and self-reliant supply of feedstock to the Karoun Petchem plant and diversity in our production. Two or three products would be produced for the first time. In some other projects, new technology is used for the first time. For instance, in the Salman Farsi Project in the Mahshahr zone, propane dehydrogenation (PDH) i.e. propylene produced through a dehydrogenation reaction would be produced for the first time.

In light of the current gas imbalance, how are petrochemical plants fed?

NPC's objective is to help overcome imbalance between supply and demand. What has been done to that end is to revise projects in parallel with working out a number of strategies about them. Under gas imbalance conditions, a possible mentality is to halt all gas-based projects, but these projects are mainly in the hands of holdings that have their own gas supply plans. In fact, their gas supply is carried out via investment in the upstream sector. We have been in

talks with National Iranian Oil Co. (NIOC) to assign certain fields to holdings that would invest in. That has paid off. The Bakhtar Investment Holding signed an agreement to develop the Gordan and Pazan gas fields on the sidelines of the 29th Oil Show in Tehran. Throughout our meetings, all main obstacles were removed. Therefore, these gas fields are expected to be assigned to the holding to be developed by the end of the current calendar year, so that the recovery would begin next calendar year or the year after. That agreement is estimated to yield 25-30 mcm/d of gas production from these fields. Therefore, NPC's goal is to help provide gas fields or resources to holdings, due to their ability to make investment in gas projects.

How would investment in petrochemical projects attract investors?

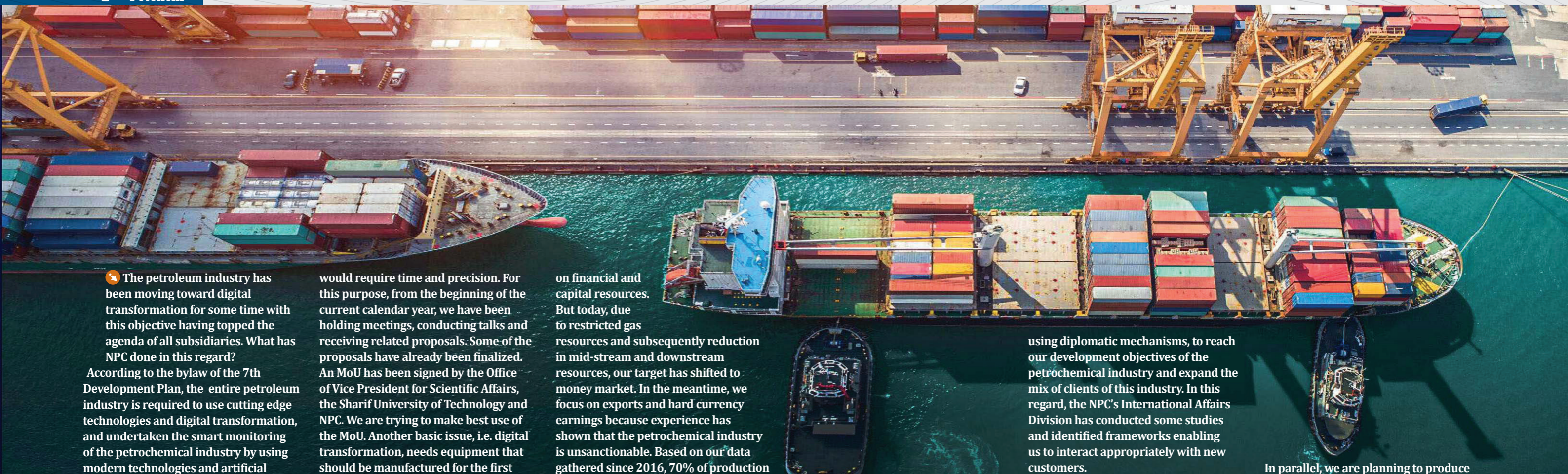
Some incentives are forecast for investment funds and petrochemical plants. For instance, if they return 40% of their profits to this industry, they would receive discounts on feedstock. The rate of return on investment is set at up to 23%. That would be one of the main attractions for investors. Above all, if petrochemical holdings invest in developing fields they will have access to sustainable gas supply. Contracts will be IPC-based, but we are trying to find other types of agreements for domestic investors because one of the main objectives of these contracts is to attract foreign investment and technology to develop oil and gas fields in the country.

What measures have been carried out for flare gas gathering and feeding it back to refineries?

Another important issue with feedstock supply is to capture flare gas that is highly

“ Based on our data gathered since 2016, 70% of production has been exported. Therefore, we may increase our exports and make further hard currency earnings by boosting output ”

“ Petrochemical production reached 74.9 mt last calendar year when the nominal output capacity was set at 96 mt. The main reason for the difference between the nominal capacity and genuine production was shortage of feedstock and need for equipment ”



📌 The petroleum industry has been moving toward digital transformation for some time with this objective having topped the agenda of all subsidiaries. What has NPC done in this regard?

According to the bylaw of the 7th Development Plan, the entire petroleum industry is required to use cutting edge technologies and digital transformation, and undertaken the smart monitoring of the petrochemical industry by using modern technologies and artificial intelligence (AI). On such basis, a project has been formulated to equip the petrochemical industry with an AI-powered smart monitoring system. Through the project, a smart material balance and energy balance system is being devised and implemented for Iran's petrochemical industry. Such system would function online and smartly, facilitating real-time data analysis, decision-making, performance optimization and forecasting production and consumption. But the key point with the petrochemical sector is its extent. Currently, 405 varieties of petrochemical products of various grades are manufactured. Therefore, given the extent of petrochemical production, implementing this article of the bylaw on digital transformation

would require time and precision. For this purpose, from the beginning of the current calendar year, we have been holding meetings, conducting talks and receiving related proposals. Some of the proposals have already been finalized. An MoU has been signed by the Office of Vice President for Scientific Affairs, the Sharif University of Technology and NPC. We are trying to make best use of the MoU. Another basic issue, i.e. digital transformation, needs equipment that should be manufactured for the first time in Iran by domestic manufacturers. According to our forecast, the petrochemical industry smartness project would become operational in two or three years.

📌 Which sector of the petrochemical industry development perspective is focused upon?

The philosophy behind development is to realize forecasts about value chain supply. In this regard, we pay attention to industrial development. If we are supposed to expand the propylene branch, we should focus on other products that may be manufactured from propylene and bring related projects to production. All investments have been so as to define projects based

on financial and capital resources. But today, due to restricted gas resources and subsequently reduction in mid-stream and downstream resources, our target has shifted to money market. In the meantime, we focus on exports and hard currency earnings because experience has shown that the petrochemical industry is unsanctionable. Based on our data gathered since 2016, 70% of production has been exported. Therefore, we may increase our exports and make further hard currency earnings by boosting output.

📌 Although the petrochemical industry has not had any halt despite all international restrictions, what are your projections in case of sanction lift and economic and political overture?

One obstacle in the way of the petrochemical industry is the genuine production level, which differs from the nominal capacity announced officially; in other words, the distance between the nominal capacity and genuine production. Petrochemical production reached 74.9 mt last calendar year when the nominal output capacity was



set at 96 mt. The main reason for the difference

between the nominal capacity and genuine production was shortage of feedstock and need for equipment. Our forecast is to invest in the upstream sector and supply feedstock or import equipment, in case sanctions are lifted. On the other hand, we can exchange data with leading companies for the supply of advanced technologies in order to master some technologies and expand the value chain. Currently, about 70% of our exports is destined for a single country and that represents a risk. In all of our negotiations, we seek to diversify the mix of products destined for foreign clients in the region or outside. On this basis, one of our approaches is to use petrochemical diplomacy, i.e.

using diplomatic mechanisms, to reach our development objectives of the petrochemical industry and expand the mix of clients of this industry. In this regard, the NPC's International Affairs Division has conducted some studies and identified frameworks enabling us to interact appropriately with new customers.

📌 The petrochemical industry in Iran has over the past two decades managed to generate significant value and earn the country significant hard currency, placing Iran on par with Saudi Arabia in terms of petrochemical production capacity. How do you see Iran's general status in the region?

Based on existing data, Iran, with 96.6 mt nominal capacity, comes second, behind Saudi Arabia. We are also ranked third and fourth on the global scale in methanol production. Today, Iran is producing about 30% of the basic petrochemical products of the Middle East. However, what matters to us is to be able to reach 45% of basic products by the end of the 7th Development Plan.

In parallel, we are planning to produce higher-value products to regain our market. In other words, our production share is 2-2.5%, which we forecast to exceed 4% by the end of the 7th Plan. Our main rivalry in the region is with Saudi companies. Other players in the region do not measure up to Saudi Arabia and Iran. We may have rivals for a specific product in the region, but we do not consider it as a measure to assess our own progress. Our only rival is Saudi Arabia, and we are moving neck-to-neck with it. Although Saudi Arabia faces no restrictions in attracting investment and importing foreign-made equipment, we have reached investment capacities for production by reliance on domestic capacity, and we hope to boost our production to the same level with Saudi Arabia.

Petchem, New Driver of EAEU

■ A free trade agreement between Iran and the Eurasian Economic Union (EAEU) takes effect, removing 87% import and export tariffs on commodities enshrined in the agreement. Furthermore, applying any non-tariff barriers would be banned. The Iran-EAEU free trade agreement is Iran's first and most complete trade agreement adopted following 9 years of talks in the wake of the successful implementation of a preferential trade agreement for 500 items of commodities. The EAEU comprises Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Russia.

Pooneh Torabi

Eurasia Quick Review

Geographically and politically speaking, the relatively vast landmass that connects the two continents of Europe and Asia, and for which no clear boundary can be drawn, is known as Eurasia. This region, which is recognized as a separate continent in many countries, has been created mostly based on a historical and cultural division. Accordingly, the five countries of Russia, Kazakhstan, Belarus, Kyrgyzstan, and Armenia, as full members, established the EAEU in 2015 to set rules for free trade and signing trade agreements with other countries in the field of macroeconomic policy and labor migration. The union aims to encourage the free movement of goods and services among member states, as well as common policies in key areas such as energy, agriculture, transport, customs, and foreign trade and investment. The EAEU was created to promote community, increase competition and cooperation between national economies, and promote sustainable development to raise the living standard in member states. In general, the goals of this economic union are focused on facilitating trade, creating a common market within the territory of independent member states, gradually eliminating customs regulations within the union, establishing a common external tariff among member countries, and harmonizing customs procedures.

Iran-Eurasia Exchanges

The EAEU is now considered a new economic hub in the region that can be responsible for part of improving Iran's trade balance; this union was formed to neutralize sanctions, develop a common market and achieve trade, create a single economic space, create a single market for member countries, reduce the prices of

goods by reducing the costs of transporting raw materials, promote healthy competition in the common market, common policies in agriculture, energy, technology and transportation, and other matters, to strengthen relations between neighboring countries. According to statistics on trade exchanges between Iran and Eurasia, figures were incremental even before the agreement. Based on figures released by the Iranian Customs Administration, Iran exported 5.059 mt of commodities to Eurasia last calendar year, up 21% year-on-year. In the same year, Iran exported \$1.121 billion worth of goods to Russia, \$505 million to Armenia, \$278 million to Kazakhstan, \$111 million to Kyrgyzstan, and \$21 million to Belarus. Meanwhile, 2.174 mt of commodities worth \$1.51 billion were imported from EAEU, up 39% in terms of weight, and down 20% in terms of value year-on-year.

Eurasia Petchem Market

Iranian petrochemical products can find a good market in Eurasia, because despite a burgeoning petrochemical industry in Eurasia, it accounts for only 2.1% of global petrochemical production. Eurasia is chiefly known as the supplier of oil and gas. The petrochemical industry is a strength of Iran. Last calendar year, Iran's nominal and actual petrochemical production capacity reached, respectively, 96 mt and 74.9 mt. Under the 7th National Development Plan, Iran's petrochemical industry is set to grow on average 8% annually to hit 132 mt. Despite its relatively low share of global production, Eurasia's petrochemical market offers Iran a strategic opportunity owing to massive oil and gas resources and proximity to Asian markets. The Eurasian market owes its importance not only to abundant resources and high production capacity, but also to geopolitical conditions, growing demand, and changes in the world economic order. This region is turning into a key player in the

global petrochemical value chain. Therefore, considering the geopolitical developments and the growing needs of the countries in the region, Iran can play an important role in supplying petrochemical products. In fact, given the needs of the Eurasian countries, Iran can increase its exports of petrochemical products. The member countries of the EAEU, along with the surrounding countries such as China and India, have collectively created a very large consumer market with growing demand for petrochemical products, especially in the fields of polymers (for packaging, car manufacturing, agriculture) and basic chemicals (for the manufacturing and pharmaceutical industries). Meanwhile, geopolitical developments, new transit routes such as the North-South Corridor, and the role of Armenia as a gateway to the Eurasian market can help facilitate Iran's exports. In general, Iran is considered one of the best options to play a prominent role in the Eurasian petrochemical market in terms of production capacity and raw materials. This is because Iran is the world's second-largest gas reserves holder after Russia, and this advantage makes the cost of producing petrochemical products in Iran lower than in many countries. Currently, 73 petrochemical plants and three power plants, and utilities are operating in Iran, and two large petrochemical hubs are located in Assaluyeh and Mahshahr, and other petrochemical companies are located in different provinces. The production capacity of Iranian petrochemical products has reached 97 mt/y, and with the implementation of 67 new projects, it will increase to 131 mt by 2029. Iran can also use transit routes such as the North-South Corridor, Chabahar Port, and the common borders with Armenia and Turkmenistan for exports to Eurasian countries.

Planning for the Eurasia Energy Market

Iran has made plans to step into Eurasia's energy



market. CEO of National Petrochemical Co. (NPC) Hassan Abbaszadeh said Russia's decision to cut import tariffs from 20% to 4% would allow Iran to export more petrochemical products.

Iran currently has observer status within Eurasia. In a bid to make optimal use of opportunities, strategic planning is needed for petrochemical companies in light of the existing export potential provided for under the 7th National Development Plan. Saeed Tavakoli, CEO of National Iranian Gas Co. (NIGC), emphasized developing cooperation with EAEU, noting that as some of Iran's neighboring countries are members of this Union and willing to expand energy ties with Iran, good cooperation has begun with them. He referred to the 7th Development Plan and emphasized the role of regional energy trading, saying Iran's cooperation with CIS nations, particularly by prioritizing regional interaction, can be instrumental in energy exchanges, as 73% of known gas reserves lie in Russia and its neighboring countries.

Eurasia Petchem Outlook

Growing populations, expanding transformation industries (car manufacturing, packaging, construction), and increasing global demand for polymeric materials have led Eurasian countries to prioritize not only the production but also

the export of petrochemical products in their industrial development programs. Eurasia is transitioning from a raw material producer to a major player in the global petrochemical chain. Given its rich natural resources, industrial development policies, and growing regional and global demand, the region is poised to become one of the emerging petrochemical hubs in the coming decade. Despite the rapid growth of the petrochemical industry in the Eurasian region, the region still accounts for a relatively limited share of global production of this product (2.1%), as the region is mainly known as a supplier of raw materials, especially oil and gas. But, it is noteworthy that since Eurasia has significant capacities in terms of primary energy resources, it has the required prerequisites to become a global hub for polymer production. The total proven oil reserves in this region by 2024 are about 118.2 billion barrels, equivalent to 7.7% of the world's total proven oil reserves, and 106.2 tcm of gas, equivalent to almost 50% of proven gas reserves in the world. In such circumstances, Iran, which on the one hand has a strategic geographical position in the world and on the other hand has a diverse market for petrochemical products, alongside Eurasia, can pave the ground for exporting petrochemical products to other countries and strengthen Iran's economic ties with the world.

Bandar Abbas Refinery Invests €1.7bn in Quality Upgrading

Bandar Abbas oil refinery is the only treatment facility in Iran capable of processing heavy and extra-heavy crude oil. Over recent years, it has embarked on extensive plans to change the refining paradigm and move towards high-value petroleum products. A €1.7 billion investment in quality upgrading projects, connection with the Goreh-Jask pipeline and concentrating on supplying cleaner fuels have placed the refinery in a status to sketch out a different future for the refining industry in southern Iran. Ahmad Hashemi, CEO of Bandar Abbas Oil Refining Co. (BAORC), recently at a news conference said that with previously mentioned investment, quality-upgrading projects would help treble or quadruple refined products at this facility in two phases.

28 Years On

The Bandar Abbas oil refinery started out in 1997 on 700 ha of land. Its initial capacity was 232,000 b/d, which increased to 320,000 b/d in one decade. Finally, by 2012, due to an innovative plan and without reliance on foreign investment, the facility's treatment capacity reached 350,000 b/d. The development path of the Bandar Abbas refinery indicates that this facility was not limited to supplying current needs of the country; rather it had been planned based on a long-term perspective and feasibility of upgrading capacity and flexibility vis-à-vis the forthcoming conditions. Over 90% of the feedstock supplied to the refinery is heavy crude oil whose processing is possible in a handful of refineries across the globe due to technical complications and high production costs. The refinery also processes gas condensate and light crude oil from the Hengam oil field; however, the main task assigned to this facility pertains to processing heavy and ultra-heavy crude oil. Therefore, it is the only refinery in Iran to process a combination of feedstock stably. The location of the refinery in the northern part of the Persian Gulf also bears significance. Direct access to high

seas and international shipping lines facilitates persistent export of petroleum products. In addition to supplying about 18% of the national refining capacity, the facility makes up for a big share in Hormuzgan Province's economy thanks to widespread job creation and development of supplementary industries.

New Refining Model

Over recent years, the Bandar Abbas oil refinery has pursued a new approach vis-à-vis reducing supply of heavy products and increasing the share of higher-value products. "About 92% of the market demand pertains to the main four products (gasoline, gasoil, kerosene and aviation fuel). Therefore, shifting the refining model to higher production of such products would be a strategic necessity," said Hashemi. To that end, RDCC and RFCC units are to be established at this refinery to allow for transforming heavier fractions of petroleum to lighter and higher-value products. The RDCC unit would be first launched at the Bandar Abbas refinery, which would help produce 400,000 tonnes of propylene and 90,000 tonnes of ethylene. Such capacity would change the facility from a mere refinery into a petrochemical refinery. Hashemi said the future of the refinery

should not be tied to environmentally-risky products, adding the focus would be on cleaner and more sustainable products. He said needle coke would not bring about a bright future due to environmental obligations, as each tonne of coke-based aluminum production would create about 15 tonnes of GHG. Therefore, the Bandar Abbas oil refinery has decided to drive development towards clean and reliable high-value products. Mohammad Sadeq Azimifar, the CEO of National Iranian Oil Refining and Distribution Co. (NIORDC), has said the objective would be fixated on the quantitative and qualitative upgrading of product supply. In his view, development of quality upgrading projects would meet local needs in addition to driving the value chain towards downstream industries and strengthening Iran's standing in international markets. This is also the framework of heading towards petrochemical refining that would increase the Nelson complexity index (NCI) and facilitate supply of more diverse and more competitive products. In addition to sustainable fuel supply, the Bandar Abbas oil refinery would become a supplier of base materials for petrochemical industries and export markets.

Hashemi said this

approach would in full coordination with Ministry of Petroleum and NIORDC plans. He said upgrading the quality of products and embracing petrochemical refining would be a strategic policy that can help increase the profitability of refining plants, while reducing dependence on heavy products.

\$80mn Cost Saving

Hashemi said one pivot of development of the Bandar Abbas refinery would be to implement quality-upgrading projects using €1.7 billion investment in two phases. "By completing these projects, the capacity of petroleum supply would treble or quadruple. This investment would cover expansion of new processing units, renovation of equipment and optimization of production lines," he added. In addition, a project is underway for the first time in the country for producing base oils. The conceptual and initial design for this project has been done by domestic experts before winning confirmation by a foreign company. The project, which has halved investment costs, is expected to come online within 36 months. Connecting the refinery to the Goreh-Jask pipeline is a turning point in feedstock supply stability. Until recently, the refinery feedstock was supplied mainly by vessels, which was costly and carried significant operational risks. Now, this pipeline has increased the average crude oil receipt from 330,000 b/d to 340,000 b/d, let alone saved the country \$80 million in annual costs. Financially speaking, the Bandar Abbas refinery recorded IRR 210,000 billion in net profit last calendar year. In the single first quarter of the current calendar year, it posted IRR 170,000

billion in net profit, up 12% year-on-year. According to Hahsemi, this increased profitability is the direct result of the shift in the refinery's approach to supplying cleaner and higher-quality fuels.

Social Responsibility

In addition to industrial development, the Bandar Abbas refinery is active in Corporate Social Responsibility (CSR) and environmental protection. Over recent years, it has been recognized as green industry. Regular monitoring of pollutants and emission reduction projects have adapted the refinery's products with international standards. Hashemi said tough national and international standards would set the basis for the refinery operation. Quality upgrading projects have been also designed so as to minimize the sulfur content. The refinery has also taken a variety of measures in the social sector, varying from building healthcare and training centers to supporting sport and cultural activities. An outstanding case is supporting local sport teams and contribution to expansion of healthcare infrastructure in southern Iran. Nearly three decades of activity have turned the Bandar Abbas oil refinery into a main pillar of the refining industry in Iran. The unrivalled capacity of this facility in processing heavy and ultra-heavy crude oil, unique geographical position off Persian Gulf waters and massive investment in quality upgrading projects, as well as moving towards petrochemical refining have stabilized the position of this refinery as a driver of development and symbol of industrial transition in southern Iran. The future of the Bandar Abbas refinery is defined not only in increased output, but also in generating value-added, respecting environment obligations and fulfilling social responsibilities. That would transform the facility into a key player in energy security and sustainable exports in Iran.

Isfahan Refinery KHT Set to Upgrade Fuel Quality

The Isfahan oil refinery processes 360,000 b/d of oil, supplying more than 20% of Iran's petroleum product needs. Recognized as a leading player in the country's refining industry, the facility has launched a kerosene hydrotreating unit (KHT) to reiterate its strategic role in fuel supply and expansion of oil value chain. Mohammad Sadeq Azimifar, the CEO of National Iranian Oil Refining and Distribution Co. (NIORDC), said: "Besides ensuring output stability, the KHT project in Isfahan can clear the way for further export of petroleum products." Not only does this project mean reducing pollution and upgrading standards of products, but also attests to the policies adopted by Minister of Petroleum Mohsen Paknejad under the administration of President Masoud Pezeshkian regarding the priority given to boosting quality and capacity of refining. With a capacity of 19,000 b/d, the KHT unit would reduce the sulfur content of kerosene to lower than 10 ppm to supply a Euro-5

grade product. That would convert kerosene from a traditional product to valuable feedstock for producing detergents, fatty alcohols and solvents to be exported. That is in line with the Pezeshkian Administration's policy of upgrading fuel quality and reducing air pollution. Inauguration of the KHT unit is not merely a technical project; rather, it is part of a larger strategy in the refining sector under the 14th Administration towards improving the quality of petroleum products, and taking steps to scale back on environmental pollutants. The strategy is defined under three categories: boosting fuel quality, expanding refining capacity and managing consumption. These policies altogether would help overcome fuel imbalance while also enhancing Iran's standing in the regional market of petroleum products. Gholam Reza Baqeri-Dizaj, the CEO of Isfahan Oil Refining Co. (IORC), said the KHT project was destined for various purposes, adding that it would repurpose sulfur to upgrade its quality from Euro-2 to Euro-5 grade. He said

the unit could be boosted in capacity; let alone help convert unexportable products like Solvent 402 to an exportable product by desulfurization.

Refining Capacity Up

Azimifar expressed hope that more quality upgrading and infrastructure projects would come online at the Isfahan refinery. Referring to the national refining capacity, he said the feedstock supply to refineries has increased 100,000 b/d year-on-year in the current calendar year. He added that another 180,000 b/d would be added to the refining capacity by the end of the calendar year in March 2026. "Over the past one year, by increasing feedstock supply to refineries and launching new units, nearly 5 ml/d has been added to gasoline production capacity," he said.

Azimifar said new refining projects are set to come online in coming months, adding: "The 60,000-b/d South Adish refinery and 120,000-b/d Mehr Khalij Fars refinery in Bandar Abbas, petroleum products quality upgrading projects at refineries including the

DHT project at the Shiraz refinery and gasoline quality upgrading at the Tehran refinery are among projects set to come on-stream in coming months." Touching on transmission and storage infrastructure, he said: "As the bulk of supply by refineries occurs in southern Iran while the bulk of consumption is in the north, expansion of pipelines would be highly significant. For this purpose, 800 km of crude oil and petroleum products pipelines, including the Bandar Abbas-Rafsanjan and Sabzab-Shazand pipelines, came online with more than \$720 million in investment."

Gasoline Use Down

Azimifar said a number of key refining projects had become operational in recent months across Iran, adding: "In line with the 14th Administration's policies to upgrade fuel quality and enhance production capacity, the isomerization unit of the Isfahan refinery and the Euro-standard gasoil production project of

the Abadan refinery (hydrocracking unit) became operational." He said that sufficient gasoil had been stored for power plants while gasoline storage stood at favorable levels. "Such instances of success show that despite all restrictions, the refining industry has managed to guarantee reliable and sustainable fuel supply over this time."

Highlighting fuel smuggling as a major challenge in consumption, he said the difference between domestic and abroad prices has always posed a challenge. "The Administration and the President in person, have paid due attention to this issue. By applying new data analysis methods, some fake fuel cards were identified and deactivated; and guilty issuing organs were prosecuted. As a result, the gasoil consumption trend was reversed, registering an average 4-5 decline," he said. Azimifar said development and consumption management projects had helped increase gasoil storage levels to a historic high.

"Adding 5 ml/d to gasoil output by launching the hydrocracking unit of the Abadan refinery while reducing

as much gasoil thanks to combating smuggling helped end dependence on imports, let alone store sufficient fuel for winter," he said.

Environmentally-Friendly KHT

The KHT project has been implemented to sweeten kerosene and reduce its sulfur content to below 10 ppm from 300 ppm. It makes for a key social responsibility and action to safeguard the environment.

Despite numerous challenges like engineering issues, equipment supply and construction work, over 80% of necessary equipment has been domestically-manufactured. The catalysts used previously were all imported, but now an Iranian company has localized all necessary catalysts for the KHT project. Sponsored by IORC, this company has produced catalysts compliant with NIORDC standards.

Ilam NGL 3100 Comes Online with \$1.6bn Investment



President Masoud Pezeshkian on 16 August inaugurated the \$1.6 billion giant NGL 3100 project in Ilam Province to help stop associated gas burning at 8 flares and save \$700 million for the country. With a final capacity of 240 mcf/d, the facility would play a key role in reducing environmental pollution, local sustainable development and realization of major objectives of the petroleum industry.

Gas flaring has long been a big challenge for the Iranian petroleum industry. The flares burning round the clock at oil fields were wasting national resources away, in addition to creating significant environmental pollution harmful to public health. World Bank estimates show that every year more than 150 bcm of gas is burnt at flares across the globe. It is equivalent to one-third of Europe's gas consumption. Until a couple of years ago, Iran came third after Russia and Iraq in gas flaring.

Implementing flare gas capture over recent years has slowed down this trend. Gas flaring has been down from about 17 bcm in 2018 to about 113.7 bcm in 2019. Emphasizing the necessity to safeguard national resources and protect the environment, the 14th Administration has prioritized associated gas capturing. To this end, numerous projects have been envisioned from Qeshm to Kharg and from Dehloran to Maroun. Inauguration of NGL 3100 in Ilam is a turning point in this sector.

Technical Features

The NGL 3100 project has been inaugurated to capture flare gas at eight oil fields in Ilam; namely, Azar, Cheshmeh Khosh, Dalpari, East Paydar, West Paydar, Aban, Dehloran and Danan. In the first step, it would be receiving 80 mcf/d of feedstock, which would gradually grow to 240 mcf/d.

The project incorporates an NGL processing plant, two compressor stations, a 100MW powerplant and more than 350 km of pipeline for feedstock and product transmission. The captured enriched gas is sweetened and dehydrated to be converted into a variety of products like light gas, C2+ compounds (ethane and heavier components), sulfur and gas condensate. Ramin Hatami, director of corporate planning of National Iranian Oil Co. (NIOC), touched on the construction of the project, saying: "To complete this project, more than 350 km of pipelines, 8,300 tonnes of metal structures and 7,000 tonnes of equipment were installed while more than 1 mcm of cut and fill was done. Totally, more than 34 million person-hours was spent on this project."

Economic and Environmental Value

The advantages of inauguration of this project are not limited to increasing gas products. Pezeshkian put at \$700 million the annual value of captured flare gas. He also highlighted other advantages of the project like pollution reduction and job creation in the downstream sector. The facility would produce more than 4.3 mcm/d of sweet gas, 1,055 tonnes of C2+ compounds a year, 132,000 tonnes of sulfur and 850,000

barrels of gas condensate, which would generate significant value-added for the downstream industry. Based on these estimates, more than 4,500 jobs were created when the project was being operated. Now, with the start of operation, about 1,500 direct and more than 3,000 indirect jobs would be created. It is of high significance for Ilam Province and particularly Dehloran County, which is among underprivileged regions. Therefore, in addition to economic and environmental value, this project would be playing a prominent social role in the balanced development of the region. One of the outstanding features of the NGL 3100 project is maximum use of domestic manufacturing capacity. According to NIOC, more than 85% of necessary equipment for this project has been designed and manufactured in the country. In addition to reducing costs, this achievement is indicative of the high potential of the Iranian petroleum industry in localizing advanced technologies and moving towards industrial self-sufficiency." From an environmental perspective, this project is a key step in improving air quality in southwestern Iran. Ending flaring would significantly reduce emission of GHG and polluting particles. It would then present a new image of Iran's petroleum industry in terms of social responsibility and environmental concerns.

Future Plans

Inauguration of NGL 3100 is part of an extensive plan by the Ministry of Petroleum to capture flare gases entirely by 2028. As enshrined in the 7th National

Economic Development Plan, flare gas capture capacity is expected to reach 16 bcm /y, or 44 mcm/d. In this regard, such projects as constructing NGL 3200 in West Karoun, the NGL project in Kharg, Bidboland and Maroun gathering stations and reduced flaring in South Pars refineries are under way. Minister of Petroleum Mohsen Paknejad said: "The flare gas gathering capacity was about 330 mcf/d at the outset of the 14th Administration. With short-term and long-term projects inaugurated so far, this figure has increased by 270 mcf/d. it would exceed 60 mcf/d by next March."

In the meantime, with the operation of the first phase of the Rag Sefid-1 flare gas gathering project and reducing flaring at South Pars refineries, about 140 mcf has been added to gas gathering capacity. Auctioning off 9 packages of flare gas with 270 mcf capacity and offering 36 packages with 700 mcf capacity are part of the same comprehensive plan.

Operation of the NGL 3100 plant in Ilam is a practical step in reducing flaring and making economic gains from associated petroleum gas. This project is indicative of gas gathering policies from the phase of planning to the phase of implementation. It shows new capacities are taking shape.

Rather than merely being significant in economic terms, the project represents a reliable experience in implementing similar projects in other parts of the country. Continuation of such projects within the framework of the 7th Plan objectives would clear the way for reduced flaring and enhancing the resilience of Iran's gas industry.



Afshin Javan
Senior Energy Economist Analyst

OPEC+ Decision Implications for Market Stability

Introduction

OPEC+, a key coalition of oil producers, has been instrumental in maintaining global oil market stability. In April and November 2023, eight members including Saudi Arabia, Russia, Iraq, UAE, Kuwait, Kazakhstan, Algeria, and Oman, voluntarily cut production by 2.2 mb/d to counter demand fluctuations. As economic conditions improved and oil inventories declined, in December 2024 the group decided to gradually restore these cuts starting April 2025.

On July 5, 2025, the same members met virtually and, citing strong economic growth and tight market fundamentals, agreed to boost output by 548,000 b/d in August 2025, exceeding expectations of 411,000 b/d. This move supports the phased return of previously cut supply and aims to meet robust summer demand in the Northern Hemisphere. The increase is adjustable, with flexibility to pause if needed. Members also pledged to compensate for overproduction since January 2024. They will keep holding monthly meetings, with the next set for August 3, 2025, to review September output.

OPEC+ Decision and Context

On 5 July 2025, eight OPEC+ member countries agreed to increase production by 548,000

b/d in August 2025, relative to the mandated output levels in July. This single-step increase, equivalent to four standard monthly increments, advances the group's December 2024 roadmap to gradually reinstate 2.2 mb/d of voluntary production cuts beginning in April 2025. Notably, the August adjustment exceeded market expectations of a 411,000-b/d rise, marking a significant departure from the incremental increases implemented in May, June, and July, and surprising many industry analysts.

The decision was underpinned by resilient market fundamentals and strengthening global economic outlook. Suhail Al-Mazrouei, the UAE Minister of Energy, emphasized that global markets have effectively absorbed additional OPEC+ supply since spring 2025 without triggering stock buildups, underscoring robust underlying demand: "Even with higher production over recent months, we have not seen notable inventory accumulation, evidence that the market continues to require these barrels." Declining oil inventories, particularly during the peak summer travel season in the Northern Hemisphere, reinforced this assessment. Additional demand pressures stem from elevated air conditioning needs in the Middle East and increased crude stockpiling by China.

These factors have contributed to tighter market conditions, with Brent crude futures rising from approximately \$58 per barrel in April 2025 to around \$68 by August 2025.

Motivations

Several factors underpinned OPEC+'s production increase: **Seasonal Demand Surge:** The summer driving season in the Northern Hemisphere drives substantial fuel demand. The August increase leverages this demand to ensure market stability.

Robust Market Fundamentals: Low oil inventories reflect a balanced supply-demand dynamic, providing OPEC+ an opportunity to boost production without destabilizing markets.

Market Share Competition: Rising output from non-OPEC producers, such as the United States, Canada, Brazil, and Guyana, prompted OPEC+ to increase supply to maintain its market share.

Overproduction Compensation: Some members of DOC, who exceeded production quotas, faced pressure to compensate. The August increase facilitates accelerated compensation for overproduction since January 2024.

Chinese Stockpiling: China's crude oil stocks rose by 82 million barrels (approximately 900,000 b/d) in Q2 2025, driven by

commercial or strategic energy security motives, supporting market tightness.

OPEC+ underscored the importance of flexibility, stating that production increases could be paused or reversed in response to changing market conditions, allowing for swift adjustments to shifts in demand or geopolitical developments.

Market Implications and Analysis

The OPEC+ production increase of 548,000 b/d, above market expectations—has significant implications for global oil markets, which remain tight despite the planned hikes. Key factors sustaining tightness include:

Output Shortfalls: Several members have failed to meet output targets. As a result, actual increases from April to June totalled only 540,000 b/d, well below the 960,000-b/d target.

Rising Prices: Brent has risen from \$58 in April 2025 to around \$68, supported by a backwinded market structure, with near-term prices trading at a \$2.74 premium over six-month futures in August.

Strong Demand: Higher refinery runs, peak summer cooling demand in the Middle East, and Chinese stockpiling have absorbed additional supply, preventing stock buildups.

Low Inventories: OECD crude stocks remain below average, European inventories were 9% below the five-year norm (394 million barrels in May), and U.S. stock were also below average (419 million barrels in June), providing price support.

Looking ahead, analysts expect softer demand in fall 2025 as summer consumption wanes, potentially leading to stock builds and downward pressure on prices, already down 8.5% since January

2025. Despite this, OPEC+ to approve another ~550,000 b/d increases for September at its August 3 meeting, completing the phase-in of the 2.2 mb/d voluntary cuts and incorporating a 300,000-b/d quota increase for the UAE, reflecting its expanded capacity. This highlights the OPEC+ strategy to adapt to market conditions and enhance competitiveness, though limited spare capacity outside Saudi Arabia and the UAE may constrain actual output growth.

Commitment to Compliance

The eight OPEC+ countries reaffirmed their commitment to the Declaration of Cooperation, including the voluntary

production adjustments agreed upon during the 53rd Joint Ministerial Monitoring Committee (JMMC) meeting on 3 April 2024. They committed to fully compensate for any overproduction since January 2024, and have submitted updated compensation plans to the OPEC Secretariat by 15 April, 2025. Ongoing monthly monitoring meetings will continue to evaluate market conditions, compliance levels, and progress on compensation, highlighting the OPEC+ disciplined approach to supply management. Production penalties, ranging from 200,000 to 500,000 b/d for past overproduction will remain in effect until June 2026.

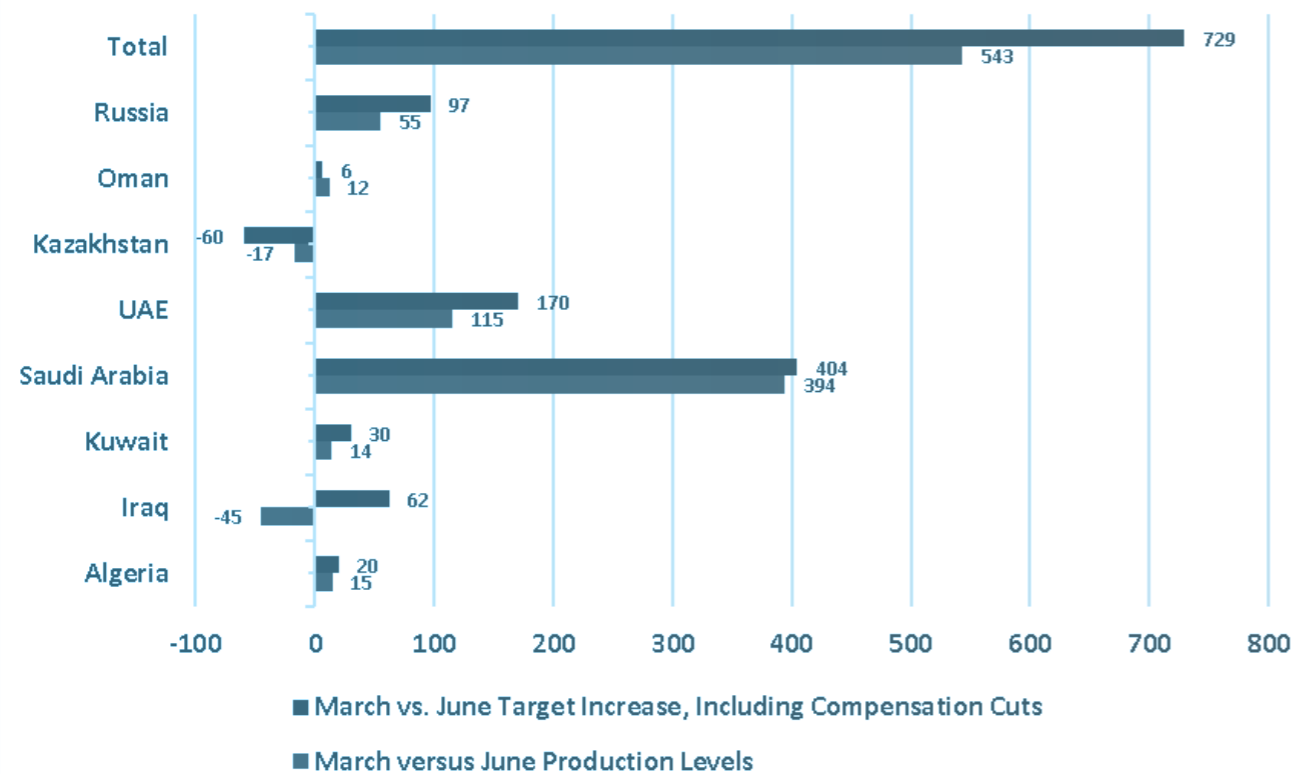


Key Points and Insights

The following table summarizes key points from the analysis, drawing on market dynamics, internal OPEC+ strategies, and outlook:

Key Point	Description
1. OPEC+ Decisions in August 2025	The eight OPEC+ countries (OPEC+8) agreed to fully unwind their 2.2 mb/d voluntary production cuts, initially announced in November 2023, by September 2025. The final increase of 548,000 b/d is set for implementation in September. The group retains the flexibility to pause or reverse these adjustments in response to changing market conditions.
2. Timing and Setting of the Decision	The decision was first announced in December 2024, and implemented from April 2025. Despite debates about the motives, the primary factors are based on market fundamentals and internal OPEC+ dynamics.
3. Market Conditions	Contrary to concerns of an “oil glut,” the market in 2025 has effectively absorbed additional barrels from the OPEC+8 without significant stock buildups in crude and refined products. During the 1H25, OECD inventories averaged approximately 100 million barrels below the five-year historical average.
4. Inventory Build-up in China	China’s crude and product inventories rose by 82 million barrels in 2Q25, likely due to commercial stockpiling or strategic energy security motives, although precise details remain uncertain due to limited official disclosure.
5. OPEC+ Internal Dynamics	Group cohesion and a sense of “collective responsibility” remain central to OPEC+ policymaking. However, non-compliance with production quotas by some members has undermined the viability of sustained voluntary cuts. In response, OPEC+ has established a mechanism to evaluate members’ sustainable production capacities, which will inform the setting of output baselines from 2027 onward.
6. Saudi Arabia’s Strategy	Contrary to some analyses, Saudi Arabia’s move to end production cuts does not signal a shift from market management to market share maximization. Saudi Arabia has raised its Official Selling Prices (OSPs) destined for Asia, and retains flexibility in its output strategy.
7. Spare Capacity and Market Expectations	The elimination of voluntary production cuts has revealed that certain producers are unable to meet their quotas, indicating that actual spare capacity is lower than expected.
8. OPEC+ Principles	OPEC+ decisions are guided by the pursuit of market stability, adherence to fundamentals, flexibility in output adjustments, and the maintenance of group cohesion through collective responsibility. The phase-out of the production cuts introduced in November 2023 is consistent with these principles.
9. Challenges in Meeting Targets	Some members face challenges in boosting output due to constrained production capacity or the need to implement compensatory cuts for previous overproduction, causing actual output increases to fall short of targets.
10. Future Outlook	Amid growing macroeconomic and geopolitical uncertainties, OPEC+ will maintain its focus on flexibility and decisions guided by data. The evolving strategies of key producers, along with difficulties in meeting output targets, could influence market dynamics.

OPEC + 8 production increases versus targets



Required Production Table (kbd)

Country	September 2025 Required Production (kbd)
Algeria	959
Iraq	4,220
Kuwait	2,548
Saudi Arabia	9,978
UAE	3,375
Kazakhstan	1,550
Oman	801
Russia	9,449

Conclusion

The OPEC+ decision to raise production by 548,000 b/d in August 2025 represents a strategic move in response to strong seasonal demand, solid market fundamentals, and increasing competition from non-OPEC producers. While output increase are planned, the market remains tight due to difficulties some members face in meeting their quotas halting from limited production capacity or ongoing compensatory cuts for prior overproduction. Elevated demand from air conditioning use in the Middle East and Chinese stockpiling activity have helped support higher Brent prices. This production increase is part of the phased return of the 2.2 mb/d in previously curtailed output, with the flexible approach aimed at preserving market stability. Nevertheless, analysts warn that additional supply could result in rising inventories and downward pressure on prices after the summer peak. The OPEC+ emphasis on monthly monitoring and full compensation for overproduction underscores its proactive and disciplined management strategy. Future research should examine the long-term implications of these production adjustments on global oil pricing, market balance, and the evolving strategic role of OPEC+ in the energy landscape.



Fereydoun Barkeshli
Senior Energy Expert

OPEC+ Committed to Oil Market Stability

On 2 April 2023, OPEC and its allies took a final decisive stance to cut another 1.6 mb/d of output, bringing the total production cut to 5.36 mb/d in a bid to stabilize the international oil market. That was quite effective, as markets returned to a relative stability that is still in place. OPEC+ kept releasing barrels since then.

There were major wars in Ukraine and then the Middle East, but markets remained resilient. Brent oil prices are range-bound between \$65 to \$75 per barrel. Prices jumped violently during the first quarter of 2025 but stayed firmly stable throughout the second and third quarters of 2025.

OPEC+ has yet to release a final installment of production constraints of 1.65 mb/d to decide to release by 7 September 2025. This decision may soften the oil market, especially because of the fact that high consumption season of oil is already behind us. The alliance of OPEC and on-OPEC producers have to make tough decisions. Saudi Arabia is willing to get rid of its commitments towards the oil market all alone and change its image as a swing producer, while Russia is willing to continue with the current production curbs. According to the secondary sources, the bulk of the OPEC+ production cuts is shouldered by Saudi Arabia. Nevertheless, once OPEC+ runs

out of excess capacity, without more additional barrels, the market sentiment will shift towards a situation where the supply abundance factor will evaporate. This will likely prepare the ground for market empowerment next year. As long as oil demand peak and supply glut begin to go away, market will have to make a decisive option. It is difficult to consider a stress test for the oil markets under unpredictable policy decisions of the US government. As long as Federal Reserve remains outside government control, markets will have to rely on the strength of the US dollar for setting price floor and ceiling for oil.

Macroeconomic Factors

However, the present article is to touch upon issues that immensely impact oil markets and prices as we move forward. To begin with, let us review the COP29 Summit in Baku in November 2024 and COP28 in the United Arab Emirates in December 2023. Both of them were held in oil-producing countries. In fact, the two above-mentioned conferences defused some pressure from the oil producers, though with a sufficiently subtle emphasis on the necessity to keep up with climate change issues and carbon emissions policies. Then came Trump, who ignored everything

about climate change issues from his first day in office and ultimately left the Paris Climate Action Conference altogether.

President Trump has somehow poised as supporter of oil and gas sectors. In practice, US-based IOCs have not fared well under his leadership. Major oil companies have been downgraded in S&P 500. On the other hand, persistent policy shifts in energy exports to other countries or fluctuating policies on Venezuela oil has jeopardized oil company's decisions, which should be on long-term policies.

On other macroeconomic levels, the U.S. economic performance and its path forward, the U.S. Federal Reserve Board and its policies, and their coherence with the country's Commerce Secretary regarding tariffs and trade initiatives are all relevant. These developments did not attract much attention, perhaps purposefully, but they meant a lot to the international oil community and energy sector.

Oil Market in Transition

As briefly mentioned in the opening, the global oil landscape is undergoing a significant transformation as we approach the completion of the first half of the decade. Given the geopolitical tensions, technological advancements,

mixed environmental concerns and challenges, shifting consumer preferences, and population demographic changes, the oil industry is at a critical crossroads. It is therefore important to understand and explore the key trends that shape the market, providing insights into how these factors may influence global energy dynamics.

The rise of new oil powers is a scenario that began to surface as early as 2010 and gained momentum constantly. As traditional oil giants like Saudi Arabia and Russia continue to dominate the market, new players kept emerging. Countries in Latin America, Africa, parts of Asia, and of course the United States' shale oil and gas to which I shall return. Those countries are ramping up production to capitalize on rising global demand. By the end of 2025 and 2026, we must expect countries such as Brazil, Guyana, Angola, or Nigeria to play increasingly influential roles in the global oil market.

OPEC and its alliance produce 65% of globally traded oil. This is a safe percentage share that allows OPEC+ to play a dominant role in the world oil market for the foreseeable future. It is needless to say that the OPEC member countries, without the alliance, can still influence the market and support price stability but at a much greater output sacrifice that makes it almost impossible to bear. I am not sure that in case of another major oil market collapse, such as the one that occurred during COVID-19 pandemic, a new round of massive production curb could be likely to again. OPEC+ underwent a significant sacrifice to stabilize the global oil markets. Never before has the global oil market seen such a coherent strategy for

the sake of price stability.

Technological Innovations

Technologies are reshaping the economy of the oil landscape. Perhaps the most significant is hydraulic fracturing, commonly referred to as fracking, and horizontal drilling that have led to unlocking previously inaccessible reserves. Fracking technology helped the United States to turn into a big player in the international oil market. America was a net oil importer since the 1950s. Shale oil, thanks to technological innovations, helped the country to turn into a major exporter of oil, gas, and oil products. However, the U.S. shale oil is a very light type of

crude that cannot always be cheaply refined. Building new oil refineries is possible but costly. As such, America has to blend it with other heavy crude grades in order to make it conceivable to refine shale oil. There are not many refineries in the world that can process shale oil. They have to blend. That is one reason that the U.S. has to lift the Venezuelan oil embargo from time to time in order to provide an opportunity for the shale oil companies to carry on blending with heavy or ultra-heavy Venezuela oil. The U.S. also imports Arab Heavy from Saudi Arabia, Kuwait, or other Middle Eastern countries.

Renewables and Energy



Integration

As the world moves towards non-conventional sources of energy for environmental reasons and due to potential demand growth and supply limitations, oil companies are beginning to explore ways to integrate renewable energy sources into their operations. Several International Oil Companies (IOCs) as well as National Oil Companies (NOCs) have already begun the process of integrating their conventional oil production and distribution using new technologies to enable the usage of renewable sources of energy.

Integrating conventional oil and fuel production and distribution with renewables allows the use of modern technologies and specifically artificial intelligence (AI) to support each other in an optimal environment. Artificial Intelligence has a high volume of energy consumption in the form of electricity. It is ironic to note that in many cases in countries such as China, India, or the United States, the electricity that generates AI is from coal, oil, and gas. This is how we emphasize integrated energy chains and inclusivity of the entire energy grid.

Peak Oil Back

You all remember what peak oil was about. It was a prophecy that went wrong. It is believed, and repeatedly mentioned by several eminent energy economists that peak oil is dead. The assumption was based upon the fact that there

were no physical limits to the availability of crude oil in the world. Plenty of reserves and of course technology made it look impossible to think of anything like peak oil throughout the 21st century. The idea was greatly enhanced when AI appeared on the scene in the last decade. Nevertheless, AI does not produce energy. AI is a big new consumer of energy, as mentioned above.

Peak oil is going to come back unexpectedly. Major energy research institutes, namely the IEA and OPEC, suggest that oil consumption will continue to increase by 1.2 to 22 mb/d through 2050. Even if we go by the optimistic estimate of the International Energy Agency, we still need another 30 mb/d of oil by 2050. Conventional oil from the Middle East, Latin America, and Africa can add 15 mb/d. The rest is assumed to come from shale oil, and mostly from the U.S.

There are some six million oil wells in the United States. In the five states that have shale rocks, companies need to drill 15,000 to 30,000 meters to reach the sufficient depth to extract shale oil. The U.S. Energy Department predicted in April 2025 that shale oil might peak in 2027. Peak shale oil means peak cheap shale oil. The U.S. Energy Administration tries to promote the notion that shale oil is still profitable at international prices below \$60 per barrel. This sounds agreeable for 2025 through

2027, but not any further. Peak cheap shale oil is on the horizon. For shale oil to survive a bit longer, a WTI price of \$80 per barrel is inevitable. As such, the current international oil prices of \$60 to \$70 per barrel are good enough to support the current circumstances of the U.S. economy, which under President Trump's tariffs policies and lowering taxes for rich corporations, all depend on keeping oil prices low enough to check inflationary pressures on the U.S. economy.

It is noteworthy that the traditional way of the global energy economics, based on demand and supply factors known as fundamentals, no longer bears the accuracy of future price trends. The dynamics of the global economy and international oil and energy have changed and de-escalated, leading to a major restructuring. Macroeconomic factors are greatly contributing to the future oil markets and prices. The international economy is interwoven into a complex and dynamic environment that cannot be exploited from one day to the next.

Factors such as increasing inequality of wealth and income distribution, a shrinking middle class leading to lower real income and less energy consumption or possibly changing energy usage patterns, and anti-inflammatory policies in order to curb poverty and food security are all relevant. In the meantime, in countries and areas which have less access to oil, such as Europe and some certain states in the United States like California, this will lead to lower oil demand.

Still on macroeconomic factors, U.S. Treasury

debt is soaring by the day. Americans owe \$104 trillion to the rest of the world. The U.S. Federal Reserve has to keep borrowing in order to pay off the interest on the loans. The world economy is awash with U.S. debt and dollars. Every country knows that the U.S. Federal Reserve will never pay back those debts. As such, they have to let this crippled system continue to survive.

New Oil Order

The existing global economic order is shifting and transitioning to a new landscape. The world oil industry and markets will have to move and shift accordingly. President Trump's tariffs plan did not come out of nowhere. His idea of returning industries back to the United States is not going to happen anytime soon. Business corporations cannot just pack all their factories from China, India, ASEAN, or Mexico and unload them into American ports. What U.S. tariffs policies are doing is beyond trade balance factors. America is weaponizing global trade and the U.S. dollar to fight back against other emerging hegemonies.

The U.S. considers oil as the most powerful source of implementing its agenda.

The U.S. is advancing and encircling major transit routes and corridors to suffocate nations needing oil and energy. Heavy tariffs on India for buying sanctioned oil and imposing further tariffs as a form of sanctions against the countries that buy oil products from sanctioned crude oil is weaponization of trade

and economy. The WTO is almost finished for America. Europe is already on autopilot and helpless. European desire and intentions to play by the WTO rules do not matter anymore.

However, there are opportunities for the National Oil Companies. It is time for the NOCs to join each other and even possibly merge. NOCs are the most powerful stakeholders in the global oil industry.

In my view, NOCs are not suggested to distance themselves from the IOCs. In fact, the current U.S. administration led by President Trump did not start the U.S. isolationist policies and militarization of the economy. The trend has already been started, and accelerated by President Trump. The U.S. dollar as the world reserve currency lost some ten percent of its value from January to June 2025, against a basket of major currencies such as the Euro, Yen, and Yuan. The dollar regained a portion of its strength in July 2025. NOCs need to diversify their portfolio from the US dollar as the sole source of oil exports denomination.

NOCs have a different agenda from the International Oil Corporations. NOCs are committed to global energy market stability and on top are responsible to support their country's national budgets. IOCs are accountable to their shareholders and distribution of profit margins. This makes them act differently. Coherence among NOCs is path to future stability for the producers and consumers alike.

Colombia Offshore Energy Hopes Wane

Hopes among foreign energy companies that Colombia's offshore acreage could serve as a key source of future oil and gas supplies are being dashed as many exploration projects lag expectations, with unwelcomed regulation further deflating optimism. These findings were set forth in a Reuters report on August 8. The disappointing finds and regulatory roadblocks are pushing some oil and gas companies to abandon Colombia for neighboring countries like Peru, where incentives for E&P have become clearer. Despite the country's increasing reliance on foreign energy, the government of President Gustavo Petro has defended a ban on fracking and imposed stricter rules for exploration and production of conventional oil and gas, creating delays and limiting opportunities for private investors in the industry.

Tullow Rectifying Water Issues in Ghana

Production from the deepwater Jubilee oil field offshore Ghana was impacted by a higher-than-expected water cut from certain wells during the first half of the year. This impacted riser stability on the field's eastern side, operator Tullow Oil said in an update. However, following the introduction of riser base gas lift in this area, more normal production has been restored and stabilized. The partners have now sanctioned extending riser base gas lift to Jubilee's western flank and expect to implement the system here over the next few years.

NEO NEXT Joins UK North Sea Producers

NEO Energy and Repsol Resources UK have merged to form NEO NEXT Energy. This will be one of the largest offshore oil and gas producers on the UK Continental Shelf (UKCS), with projected output this year averaging 130,000 bbl/d of oil. John Knight, executive chair of NEO NEXT, said the combination would provide "much more scale and diversity and opportunities for

cost consolidation and portfolio high-grading, giving resilience despite the tough conditions in the UK...We will certainly look to be making more value accretive acquisitions." The joint venture is owned 55% by NEO UK and 45% by Repsol E&P Group. It operates or is a partner in various long-established and emerging production hubs in the UK central North Sea.

Sunda in Gas Talks with Philippines

Sunda Energy's recent business update reveals the company's project advances focused on gas assets in Southeast Asia. Sunda expects up to nine new service contracts to be signed in the near future for oil and gas activities in the Philippines. Last August, the company applied for two petroleum service contracts for offshore license areas in the 1st Conventional Energy Bid Round of the Bangsamoro Autonomous Region of Muslim Mindanao in the Philippines. The two blocks are in the Sulu Sea and are said to contain gas discoveries with upside potential.

Woodside Updates Australia Development Drilling

Woodside Energy has secured environmental approval for development of the XNA-03 well offshore Western Australia via existing infrastructure, the company said in an operations update. This should support sustained gas production to the onshore Pluto LNG complex. Supplies were recently boosted further by startup of the PLA-08 subsea well. At the offshore Scarborough gas-condensate field development, which will export production to Pluto LNG, installation, testing and pre-commissioning of the subsea infrastructure is close to completion.

VIEW



VIEW



VIEW



Colombia

Ghana

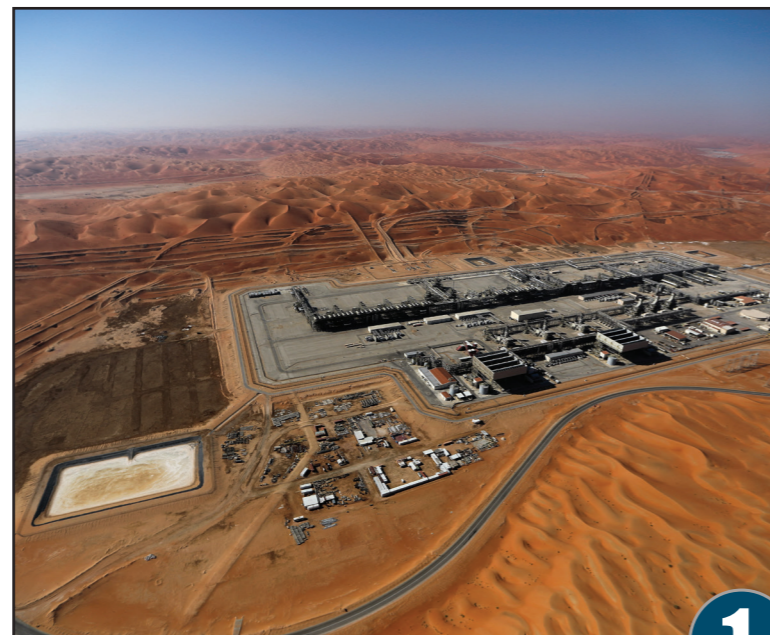
UK

Philippines

Australia

Saudi Oil Price Hike at odds with Market Share

The OPEC+ recent decision to fully unwind 2.2 mb/d of crude oil output cuts has largely been viewed as a sign the exporter group is pivoting from trying to bolster prices to rebuilding market share. The recent decision, however, by the main producer in the group, Saudi Arabia, to raise its official selling prices (OSPs) to its main Asian customers for September-loading cargoes seems to be at odds with a strategy to reclaim market share. Saudi Aramco, the kingdom's state-controlled oil producer, raised its OSP for its flagship Arab Light blend to Asia to a premium of \$3.20 a barrel above the Oman/Dubai average.



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This was an increase of \$1 a barrel from August-loading cargoes and the second straight monthly increase announced by Aramco, the world's biggest crude exporter. The increase did match expectations of

refiners surveyed ahead of the announcement by Reuters, and reflects shifts in market pricing for both the margin yields on various refined products and the term structure. This means

the Saudi increase in the OSPs, which affects the prices from other Middle East producers such as Kuwait and Iraq, was not unusual or out of line with recent trends.

Australia Ampol Profit Slumps but Resilient



Australia's top fuel retailer Ampol reported a 23% drop in its first-half profit, hurt by weak refinery margins and operational and weather-related disruptions, though the result was better than what the market had feared.

Shares of the fuel retailer drifted within tight ranges in early trade, and were down 0.2% at A\$29.08, after rising 0.7% earlier in the session. That compared with a largely flat broader ASX 200 benchmark index. The company said Lytton's refinery margins started the second half strongly, with July being \$9.95 per barrel, up from \$7.44 per barrel in the first half. Planned maintenance shutdowns and production losses from a cyclone disrupted operations, while weak Singapore refining margins pressured profitability at its Queensland refinery.

2

Petrobras Mulls Investment in Raizen



Brazilian state-run oil company Petrobras is considering an investment in sugar and ethanol producer Raizen as a way to re-enter the ethanol market, local newspaper O Globo reported, citing sources. Petrobras had previously said it was eyeing a return to the ethanol sector after having announced in its 2017-2021 strategic plan it would no longer produce biofuels, while Raizen is open to a new partner as it faces financial hurdles. Petrobras and Raizen did not immediately respond to requests for comment. O Globo said Petrobras could make a decision by year-end. The oil company is studying several options, including joining Raizen as a partner or buying assets from the firm, the report added. Raizen, the world's largest sugar maker and a leading ethanol producer, is controlled by Shell and Brazilian conglomerate Cosan.

3

South Korea Nuclear Power Output Surges

South Korea's nuclear power output is racing ahead of official targets due to fewer maintenance outages, a new plant coming online and reactors running at full tilt, helping to rein in generation costs and pushing down coal usage. Generation from nuclear plants grew 8.7% year-over-year in the six months through June - three times official plans for 2.9% annual growth - while coal-fired output plunged 16%, data from state-run utility Korea Electric Power Corp (KEPCO) showed. "The basic principle of generator operation in the power market is minimization of generation costs. Nuclear power generally has lower fuel costs than other generation sources such as coal and liquefied natural gas (LNG)," a Korea Power Exchange (KPX) spokesperson said in a statement to Reuters. "If nuclear and renewable facilities continue



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to be additionally expanded in the future, generation from gas and coal is likely to continue to decrease," the spokesperson said. A 29% annual decline in maintenance outage times and a

6% increase in installed nuclear capacity in the first half of 2025 also boosted output, KPX said. The 1.4 GW Shin Hanul #2 plant southeast of Seoul came online in April 2024.

Navarro: India's Russian Crude Buying Must Stop



U.S. President Donald Trump's trade advisor Peter Navarro called on India to stop buying Russian crude oil, accusing the Asian giant of undermining international efforts to isolate Vladimir Putin's war economy. Writing in the Financial Times, Navarro described India's dependence on Russian oil as "opportunistic," adding that if India "wants to be treated as a strategic partner of the US, it needs to start acting like one." "In effect, India acts as a global clearinghouse for Russian oil, converting embargoed crude into high-value exports while giving Moscow the dollars it needs," Navarro said in the op-ed. His comments come shortly after trade negotiations between the U.S. and India, which had been scheduled to take place in New Delhi later this month, were reportedly called off.

5

China Keeps Storing Crude Oil



China's refiners lifted their processing rates in July, but strong crude oil imports and domestic output meant there was still a surplus of more than half a mb/d available for storage.

The volume of surplus crude in July fell to 530,000 b/d from 1.42 mb/d in June, according to calculations based on official data.

Despite the decline in surplus oil, the key point is that refiners are still likely adding to stockpiles, which will allow them to trim imports should prices rise to levels they believe are not justified by market fundamentals.

China does not disclose the volumes of crude flowing into or out of strategic and commercial stockpiles, but an estimate can be made by deducting the amount of oil processed from the total of crude available from imports and domestic output.

6

Europe Old Power Plants to get AI

Some of Europe's ageing coal and gas fired power plants can look forward to a more high-tech future as big tech players, such as Microsoft and Amazon, seek to repurpose them as data centers, with ready-made access to power and water. Companies such as France's Engie, Germany's RWE, and Italy's Enel are looking to benefit from a surge in AI-driven energy demand by converting old power sites into data centers and securing lucrative long-term power supply deals with their operators. The data center option offers the utilities a way to offset the hefty costs of shutting down ageing power plants as well as potentially underwriting future renewable developments. Tech companies see these sites as a quick way to secure power grid connections and water cooling facilities, two big bottlenecks in the AI industry. "You have all the pieces that come together like ... water infrastructure and heat recovery," said Bobby Hollis, vice president for energy at Microsoft.



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Lindsay McQuade, EMEA energy director at Amazon, said she expected permitting data centers to move faster at old sites, where a big chunk of infrastructure was already in place. Utilities can either lease the land or build and operate the centers themselves, securing long-term power contracts with tech firms, he said. The deals offer much more than just the sale of unused

land as they include opportunities for stable, high-margin revenue, said Simon Stanton, head of Global Partnerships and Transactions at RWE. "It's more about the long-term relationship, the business relationship that you get over time that enables you to de-risk and underwrite your infrastructure investments," Stanton said.

China Solar Power Capacity Growth to Slow



China's new solar power capacity will slow in the second half of 2025 as reforms removing guaranteed pricing create uncertainty for new projects, though full-year additions will still likely reach a record high because of frontloading, analysts say. Slowing growth in the world's largest solar fleet is a fresh blow for solar manufacturers already struggling with massive overcapacity and a vicious price war. Global solar manufacturers, the majority of which are in China, have the capacity to make more than twice the number

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of panels the world will buy this year, according to an estimate from Morningstar. Through June, China has added 212 gigawatts of new solar capacity, according to data from the National Energy Administration, more than double the first-half 2024 additions. But based on that figure, the latest annual forecasts from analysts show that capacity additions are likely to roughly halve in the second half compared to last year. Analysts at Natixis expect 300 GW of new solar for 2025 in its mid-point scenario. That likely means only 88 GW will be added

for the rest of the year, based on calculations deducting the first half NEA data. Fitch Solutions' BMI forecasts an annual gain of 310 GW, which would mean an expected gain of only 98 GW for the rest of the year. NEA data showed 175 GW of solar were added in the second half of 2024, part of a record annual surge of 277 GW. Power reforms introduced earlier this year removed a guaranteed rate of return for renewable energy projects, forcing projects built from June to sell power at market prices.

World Oil Market Looks More 'Bloated'

World oil supply will rise more rapidly than expected this year and next as OPEC+ members further increase output and supply from outside the group grows, the International Energy Agency said. Supply will rise by 2.5 mb/d in 2025, up from 2.1 mb/d previously forecast, the IEA, which advises industrialized countries, said in a monthly report and by a further 1.9 mb/d next year. OPEC+ is adding more crude to the market after the Organization of the Petroleum Exporting Countries, Russia and other allies decided to unwind its most recent layer of output cuts more rapidly than earlier scheduled. The extra supply, along with concern about the economic impact of President Donald Trump's tariffs, has weighed on oil this year. Supply is rising far faster than demand in the IEA's view. It expects world oil demand to rise by 680,000 b/d this year and 700,000 b/d next year, both down 20,000 b/d from the previous forecast.



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"The latest data show lackluster demand across the major economies and, with consumer confidence still depressed, a sharp rebound appears remote," the agency said in the report that linked its higher output forecast to increased OPEC+ production targets. "Oil market balances look ever more bloated." IEA demand forecasts are at the lower end of the industry

range, as the agency expects a faster transition to renewable energy sources than some other forecasters. OPEC maintained its forecast for demand to rise by 1.29 mb/d this year - almost double the IEA figure. Oil prices extended losses after the IEA published its report at 0800 GMT, with Brent trading lower than \$66 a barrel.

Exxon to Return to Sakhalin-1 Project



Russian President Vladimir Putin signed a decree that could allow foreign investors, including top U.S. oil major Exxon Mobil, to regain shares in the Sakhalin-1 oil and gas project. The signing of the decree comes on the day Russian president Vladimir Putin meets Donald Trump in Alaska for a summit where opportunities for investment and business collaboration will be on the agenda, alongside talks to find peace in Ukraine.

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The decree was published as a follow-up to one Putin signed in October 2022, which ordered the seizure of the Sakhalin-1 project. Exxon previously held a 30% operator share in the lucrative project, and is the only non-Russian investor to have quit its stake. The path to Western investment returning to Russia is unclear given the U.S. and European Union would need to lift far-reaching sanctions to facilitate investment. Companies who might wish to return, having spent significant

amounts of money to exit the country three years ago, also face high barriers put up by the Russian government. Trump and his team have considered what sanctions they may be able to lift quickly in the case of progress in talks. Sakhalin-1 has to date not been directly designated under extensive U.S. sanctions on Russian energy. The decree stipulates that foreign shareholders must undertake actions to support the lifting of Western sanctions if they want to regain their share.



Shuaib Bahman
Int'l Affairs Analyst

Potential for Iran-Pakistan Energy Cooperation

Iranian President Masoud Pezeshkian made a two-day state visit to Pakistan on 2-3 August. The visit was aimed at upgrading bilateral relations, particularly in commercial, energy and security sectors. During the visit, 12 agreements and MoUs were signed, covering trade, energy, security, science and technology, tourism and infrastructure. Iran and Pakistan agreed to increase the volume of their trade from the current \$3 billion to \$10 billion a year. One domain of cooperation between Tehran and Islamabad is energy. Rich in natural gas, Iran may meet Pakistan's growing energy demand.

IP Pipeline

One of the most important projects in Iran-Pakistan energy cooperation is the Iran-Pakistan Gas Pipeline. Designed to carry natural gas from Iran to Pakistan, the project has faced numerous geopolitical, economic and technical challenges. Iran completed its own section of the pipeline, 1,100 km long, in 2012, but Pakistan is yet to start building its section in its territory. International pressure, particularly from the US, coupled with Pakistan's internal and financial restrictions, has placed

the project in a delicate situation. By imposing tough sanctions against Iran, the US has kept Pakistan from making headway. Any cooperation with Iran may impose penalty on Pakistan. Pakistan is now in a tough situation due to pressure. On the one hand, it has to supply its public energy needs while on the other, it risks losing American political and economic support. Pakistan has to choose between on one side constructing the pipeline and exposing itself to sanctions and the other, not constructing the pipeline and paying more than \$18 billion in penalties.

However, Pakistani officials view this project as an issue associated with national sovereignty, thereby dismissing interference by third parties. That indicates Pakistan's efforts for safeguarding independence in energy decisions, but geopolitical realities, including economic dependence on the US and the necessity of winning over support of regional nations like Saudi Arabia and the United Arab Emirates (UAE) challenge such independence.

Economically speaking, the Iran-Pakistan pipeline may be a solution to energy shortage in Pakistan. Iran is the world's second largest owner of gas reserves with 1,203 tcf of natural gas reserves. With its transmission capacity of 759 mcf/d to 1 bcf/d,

it can fill Pakistan's domestic and industrial needs. However, high construction costs (780 km in Pakistan's soil) and financing strains have caused major obstacles.

In addition, the energy crisis in Pakistan has had significant social and environmental impacts. Increased gas prices have made it difficult for low-income households to have easy access, causing increased social inequality. Whereas rich families have resorted to costly choices like electric ovens, the poor have

no option but to burn woods, which would have negative environmental consequences like deforestation and air pollution.

Strategic Ties

Iran and Pakistan enjoy great potential for cooperation due to geographical proximity, cultural and historical commonalities and mutually economic needs. Iran is a key holder of natural gas reserves in the world while being an electricity exporter in the Middle East region. Therefore, it may play a key role in supplying Pakistan's needs. Furthermore, with its daily growing need for energy, Pakistan could be a stable market for Iranian energy exports.

Iran-Pakistan ties are highly strategic, particularly in geopolitical, economic and security sectors. These ties may serve as a bridge for regional stability as both countries are dealing with such challenges as terrorism, sanctions and

regional rivalries. Cooperation with Pakistan may help Iran skirt around Western sanctions and have access to new markets. Pakistan may also benefit from Iran's cooperation to supply its energy needs and give a boost to its economic growth. Therefore, Iran-Pakistan ties may help form a stronger strategic bloc in the region to make both more resilient to global challenges by focusing on trading, energy and security.

It is noteworthy that Pakistan is faced with energy crisis, which leaves deep-seated impacts on the everyday life of citizens and national economy. The natural gas price hike is indicative of the inefficiency of the current energy supply system. Therefore, the Iran-Pakistan pipeline could offer a solution for supplying required gas to household and industrial sectors. However, this project has to overcome numerous barriers like political pressure, international sanctions

and financing problems. Pakistan's decision to either proceed with the project or halt it would impact on not only its energy security, but also its diplomatic ties and national independence.

Iran-Pakistan cooperation in the energy and trade sectors offers an unrivalled change for upgrading ties and advancing mutual interests. The Iran-Pakistan gas pipeline project, expansion of transport infrastructure and broadening bilateral trade may help improve Pakistan's energy security, boost Iran's economy and boost regional stability. However, successful cooperation would require strong political will, effective management of geopolitical obstacles and working out stable mechanisms to settle disputes. Establishment of a joint working group during President Pezeshkian's visit represents a positive step towards such objectives.



Growing Potential for Iran-Iraq Energy Bonds

International cooperation in the energy sector, particularly in the Middle East region with massive oil and gas reserves, is of high strategic importance. As two energy-rich neighboring nations with shared cultural and historical background, Iran and Iraq have made major efforts in recent years to boost their energy ties. A recent MoU signed between Iranian Minister of Petroleum Mohsen Paknejad and his Iraqi counterpart Hayan Abdulghani Abdulzahra Alsawad is indicative of firm determination of the both sides to broaden their cooperation level in the oil, gas and energy sectors.

Shuaib Bahman

Aspects of Cooperation

Iran-Iraq ties have been strengthened in recent years under the impact of numerous factors including cultural, religious and geographical proximity. Tehran-Baghdad cooperation in the energy sector is rooted in the deep political and cultural ties between the two neighbors. Over recent years, the level of cooperation has increased through MoUs and high-level negotiations, including joint projects in offshore oil exploration, transmission of associated petroleum gas from oil fields along the Iraqi border to Iran, and expansion of energy infrastructure in partnership with the private sector. Ever since gas talks began between Iran and Iraq in 2010, the two countries have gradually boosted their energy bonds. The signing of a swap agreement in July 2025 is indicative of political commitment on the part of the two countries for preserving and expanding their

cooperation.

In economic terms, Iran and Iraq sit atop massive oil and gas reserves, but each country has its own specific challenges. To reach self-sufficiency in oil products and developing gas investment projects, Iraq is seeking to attract Iran's experience and technology. Through cooperation with Iraq, Iran can find a new market for its gas exports and technical services. Gas supply to Iraqi power plants is a key point in the agreements that may help reduce Iraq's dependence on imported energy resources and diversify Iran's export markets.

Oil and gas swap agreement would have significant advantages for both nations. For Iran, it would be a solution to circumvent financial restrictions caused by sanctions. By receiving crude oil and fuel in exchange for cash, Iran can sell these products on international markets or refine the crude in its own refineries. For Iraq, this agreement would help secure gas supply to power plants, particularly in Baghdad and Basra.



As Iran's gas is behind generation of about 7GW of electricity in Iraq, such cooperation would be vital for Iraq.

Technical cooperation, including exchange of knowhow and experience in the extraction, refining and distribution of oil and gas resources, is another important aspect of the agreements. With promising projects in the gas sector, Iraq is seeking to optimally exploit its resources. Iran, with its long experience in the oil and gas industry, can be instrumental in technology sharing and human resource training.

In geopolitical terms, Iran-Iraq cooperation in the energy sector could affect the power balance in the region. This cooperation would not only help strengthen the two countries' standing in the global energy markets, but could also help counter external pressure, especially

from Western countries.

Reciprocal Chance

Energy cooperation between Iran and Iraq has become one of the main axes of bilateral relations in recent years due to the mutual needs of the two countries and the high economic potential of this area. The signing of MoUs on offshore oil exploration, carrying APG from border fields to Iran, development of joint fields such as the Sindbad field (Yadavaran), and participation in refinery and petrochemical projects represent practical steps to make such cooperation come true. These measures are not only in the interest of the economies of the two countries, but also could lead to regional energy security and reduce Iraq's dependence on the West.

Overall, energy cooperation between Iran and Iraq offers

significant economic opportunities for both countries. Sitting atop the world's largest oil and gas reserves combined, Iran can secure associated petroleum gases from Iraq's border fields as feedstock for its NGL units. This will not only help increase Iran's domestic production, but also prevent wastage of energy resources in Iraq. Furthermore, private sector participation in these projects could lead to attracting foreign investment and developing energy infrastructure in both countries. On the other hand, Iraq, as one of the major producers of the OPEC, faces challenges such as a lack of electrical infrastructure, and dependence on energy imports. Cooperation with Iran, especially in the field of electricity and gas supply, may help reduce this dependence and strengthen energy self-sufficiency in Iraq. For example, carrying APG from border fields to

Iran, in addition to meeting Iran's domestic needs, could lead to gas exports to regional and global markets in the long term.

One of the key aspects of Iran-Iraq energy cooperation is its impact on the environment. Flaring of APG in Iraqi oil fields is a major contributor to environmental pollution in the region. Transferring these gases to Iran for use in NGL units would not only help reduce GHG emissions, but would also be economically viable. This cooperation could be seen as a step toward sustainable development in the region.

In this regard, the signing of MoUs between Iran and Iraq in the energy sector is a positive step toward strengthening the bilateral cooperation and enhancing energy security in the region. These agreements, focusing on sharing experience, gas supply and infrastructure development, can bring significant economic and political benefits to both countries. In particular, joint investment in infrastructure projects, especially in gas transmission and oil refining, may help increase efficiency and reduce costs. Accordingly, the agreement to swap Iranian natural gas for Iraqi crude oil and fuel is a strategic step toward strengthening the bilateral cooperation and managing the challenges arising from international sanctions. The agreement will not only help meet Iraq's energy needs, but will also allow Iran to use its energy resources more effectively.

Energy cooperation between Iran and Iraq is a unique opportunity to strengthen bilateral relations and enhance energy security in the region. The cooperation will not only help improve energy infrastructure and increase production in both countries, but also may act as a catalyst for economic development, reduce political tensions, and protect the environment.

What Fate Would Befall Oil Industry Without 1953 Coup?



In summer 1953, Iran was at a fateful crossroad. After three years of making efforts for nationalizing the petroleum industry, a democratically elected government had come to power. Nonetheless, the government was under unprecedented pressure from both inside and outside of the country. The decision to take full control of oil resources had been made at a time when not only in the Middle East, but also in most parts of the world, the producing nations were not allowed to control their own resources. Major oil companies were in charge of exploration, extraction; pricing and marketing of oil with petrostates receiving only a small share of the oil revenues, without having access to details.



Negar Sadeqi
Journalist

Seven decades have already passed since a turning point of the 20th century transpired Iran's political and economic history; in public minds, this event is remembered as an "unhealed wound" which continues to reverberate in the intellectual and even political atmosphere: The Aug 19, 1953 coup. Seventy years have passed, but there are still disagreements about whether or not it was a coup d'etat. That is indicative of historical dynamism as everyone has his/her own perception of that event. Less than a century later, and despite the availability of myriads of documents, there is no national consensus on the event that changed the course of Iran's petroleum industry and not least Iran's history at large. Based on the documents declassified gradually by the Central Intelligence Agency (CIA), the Constitution as well as manuscripts and memoirs of then officials, it is said that a coup occurred in Iran on Aug 19, 1953. The New York Times in 2000 published documents attributed to Donald Wilber, a key planner of the attempt to overthrow the government of Prime Minister Mohammad Mosaddeq. The documents had offered a precise assessment of the 1953 coup and provided a guideline for future coups all across the globe. As Kermit Roosevelt Jr., one of the planners of Ajax Operation, has acknowledged, Iran was the first country where the United States managed to bring a coup to fruition for the ouster of a government by spending only \$100,000 rather than \$1 million envisaged by the CIA. That set in motion US coups in various countries, all copied on the coup in Iran. Had the oil ownership mechanism not changed in Iran



and the Mosaddeq government not been unseated, the Iranian petroleum industry and even regional energy order would take an entirely different face.

Regional Ownership Model

The continued administration of Iranian petroleum industry based on the principles of nationalization would become the first Middle East instance of direct state control over production, marketing and export of oil, a model that would be followed immediately by neighboring countries. As Mark J. Gasiorowski and Ervand Abrahamian have put it, Mosaddeq was on the brink of a national model for oil management to advance national interests

and eliminate external monopoly. Mindful of less costs, regional countries might have been persuaded to adopt oil nationalization before the 1970s, in which case, the global oil market would have experienced a transformed structure.

Negotiations in Lieu of Confrontation

History has to be reviewed and perceived based on temporal circumstances. In the aftermath of nationalization of oil in Iran, knowing that Iran's petroleum industry requires international interaction for survival, the Mosaddeq government did its best to engage in win-win negotiations with Western governments. Nonetheless, the British were

not ready to lose their massive source of income in Iran and hence, they opted for confrontation and imposing embargos. Iran reciprocated. Rather than dealing with the issue reasonably, they chose to put Iran under pressure. Iran was seeking to cooperate with international firms and enhance its revenue while having control over its oil operations. In the absence of British companies, independent oil firms could volunteer to work with Iran, but Britain blocked it. Britain was not willing to cooperate with Iran's oil industry. Nor did it allow independent companies to do so. It even barred Iran from selling its oil, and even threatened buyers of Iranian oil. The only tool it wielded was sanctions. Iran's petroleum

industry is not a stranger to sanctions. Even today, Iranians are experiencing sanctions in their everyday life. Without a coup, the national government of Mosaddeq could incentivize a phased agreement regardless of emotions and only based on wisdom and national interests, preserving the right for major decision-making in Iran alongside limited and conditional use of technology and international markets. Such a model would relax economic pressure while strengthening technical and managerial independence.

Technical Capacities Development

In early 1950s, Iran was suffering from a serious shortage of drilling experts, refining specialists and petroleum engineers. Without the coup, the way toward nationalization would be smoothed and a big portion of oil revenue could be spent on training human resources, dispatching students abroad and purchasing modern equipment. That would have transformed Iran into a country independent in oil production and export with reduced dependence on foreign contractors within one or two decades.

New Global Energy Order

The successful nationalization of Iran's petroleum industry had broader consequences for oil majors than Iran: setting a dangerous precedent for fellow oil producers. Should Iran be able to continue this way without resorting to Anglo-Iranian Oil Co. (AIOC), collective pressure by oil producers would probably amend the terms & conditions of contracts to enhance their share of income. Without a coup, AIOC could not reestablish its dominance over Iran. That would deprive

AIOC of exorbitant profits while challenging the standing of big Western oil companies in the Middle East. Pressure from oil nationalization could trigger a wave of revision in colonial contracts. In case the Mosaddeq model continued, OPEC could take shape sooner and emerge with a more effective model from the very beginning rather than having occurred in reaction to the dominance of Big Oil or the so-called Seven Sisters. Let's keep in mind that Western governments unilaterally revised oil prices down in 1959 without making any coordination with producers, which set the foundation for the establishment of the Organization of the Petroleum Exporting Countries. Some also believe that the main idea behind OPEC's establishment lay in the failure of the Mosaddeq government and the coup. OPEC founders had reached the conclusion that to resist Big Oil, they had no option but to cooperate with each other.

More Balanced Geopolitics

Active neutrality-based foreign policy could turn Iran into an actor to be neither entirely dependent on a power bloc nor in full confrontation with it. That would facilitate attracting investment and technology while boosting Iran's bargaining power in oil contracts. As a result, oil revenue would finance infrastructure and domestic projects rather than military and political spendings. Immediately after the coup, Iran became a close ally of the US in the region, but not as an independent petrostate, rather as a sustainable supplier of oil to the West. With national government in power, Iran might have become the superior energy power in the Middle East, not only in terms of production but also in terms of



energy diplomacy. In The CIA's TPBEDAMN Operation and the 1953 Coup in Iran, Gasiorowski believes that a Mosaddeq-run Iran could help modify the West's energy security order that relied on guaranteed access to the Middle East's low-cost oil resources.

Inevitable Restrictions and Challenges

In the absence of a coup, Iran would not have an easy path forward though. The pressure from oil sanctions, market restrictions,

insufficient technology and internal political disputes posed obstacles in the way of the Mosaddeq government. Without any coup, Iran would have to pay dearly for its oil dependence though. That path also required high management capacity, domestic coherence and finding new buyers in the global oil market. Without these factors, any progress in oil independence could remain fragile and unstable.

Although alternative historical scenarios are never 100% certain,

it could be argued with assurance that the 1953 coup constituted the failure of a historic change for the transformation of the unjust global energy order. A Mosaddeq-administered Iran could become the standard-bearer of oil independence in the Middle East and change the course of regional energy transformation in favor of producers, a procedure that was delayed for decades due to foreign powers' interference.

The fact is that an imaginary coup-less future would be

a composition of gradual progress, smart bargaining and confronting tough challenges. If we learnt how to proceed with win-win negotiations without confrontation and only by relying on national interests and wisdom, Iran's petroleum industry would be not simply a source of income, but also an instrument for stabilizing Iran's geopolitical standing in the world energy order.

Kerman, Where History and Climate Meet in Desert

Kerman is one of the most ancient cities in Iran, having developed a civilization in the heart of desert. This culture-rich city is home to numerous monuments, gaining fame as a tourist destination. The arid climate along with strategic position and presence of various governments there has presented architecture and urban development in Kerman as a manifestation of Iranian art in addition to offering a smart response to tough climate conditions.

Shah Nematollah Vali Tomb

The tomb of Shah Nematollah Vali in the city of Mahan is one of the most outstanding mystic and historical places in Kerman. It has been developed time and again since the 9th century AH, mainly under Timurid and Safavid dynasties. Its turquoise dome, tiled iwan, and relaxing atmosphere showcase a combination of Iranian spirituality and art.





Shazdeh Garden
 The Shazdeh Garden, also known as Prince's Garden, in Mahan, Kerman, is a UNESCO World Heritage site. This garden was built in the late Qajar period and stands out like a miracle of greenery and freshness in the middle of the desert. The garden's stepped structure, successive water features, tall trees, and central kiosk, all in the heart of the foothills of Jupar, have created a view of harmony between nature and architecture. The Shazdeh Garden is a manifestation of smart water engineering in the desert and Iranian aesthetics.

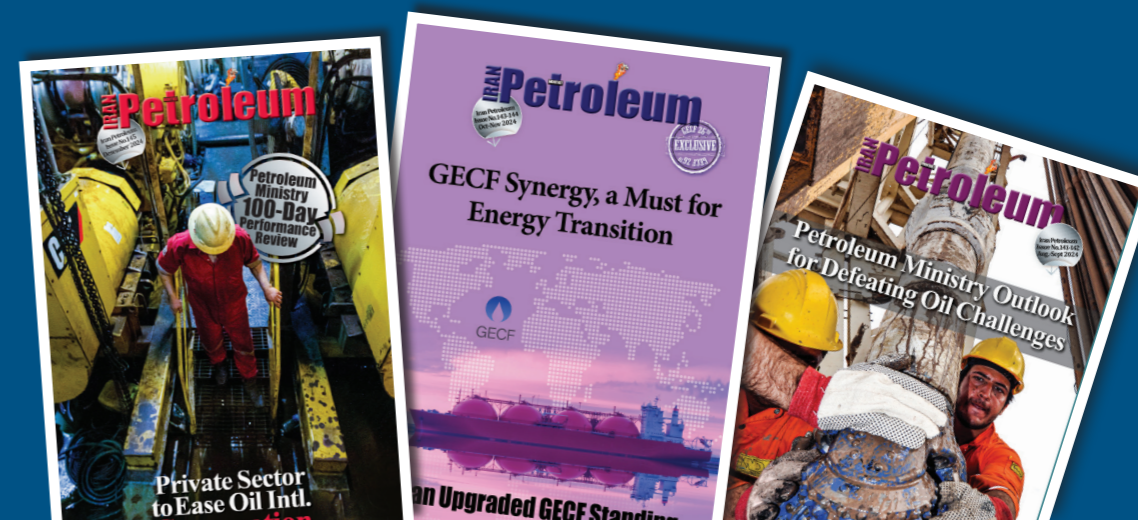
Ganjali Khan Hammam

The Ganjali Khan Hammam is part of the Ganjali Khan Complex in the heart of Kerman bazaar, dating from the Safavid era. In addition to serving washing, the hammam was a place for congregations. With its murals, eye-catching stucco, guided water sounds, and engineered lighting, the space is a combination of art, technology, and aesthetics. Today, the hammam has been transformed into an anthropological museum, recreating daily life in the past with wax sculptures.



Iran Petroleum

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Moayedí Icehouse

The Moayedí Icehouse is a smart example of climate-based architecture in Kerman, built during the Safavid period to store ice during hot summers. This adobe structure with a conical dome and thick walls kept the ice produced in the winter outdoor pools for months. Its simple but precise design, without any need for new energy, was enough for desert inhabitants. Today, it shines as a symbol of sustainable architecture and local knowledge in the heart of Kerman city.

