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Total Cannot Withdraw from SP11 Under Normal Conditions

Iran's petroleum minister, Bijan Zangeneh, has said France's energy giant Total could not quit its deal for developing Phase 11 of the massive offshore South Pars gas field under "normal" conditions.

South Pars 7-Month Gas Output at 94 bcm

Azadegan Oil Output Hits 100,000 b/d

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Gas Market Future

Kasra Nouri
Director General of Public Relations

Sustainable energy supply continues to remain a major cause of concern in the world. Given the difficulty and complexity of oil extraction and high costs of energy production from renewable energies on one side, and environmental challenges stemming from crude oil and coal burning on the other, have made natural gas the top clean fuel of choice and the most favorable source of energy in global markets.

Add to this the necessity of striking a balance between growing demand for gas and its supply. That could not materialize without new investment in this sector.

Having these issues in mind, member states of the Gas Exporting Countries Forum (GECF) held a summit during 23-24 November in Bolivia. Attraction of investment in the natural gas supply chain and implementing convergent policies with the objective of financing gas projects were among the issues raised as grounds for their cooperation.

GECF member states hold 67% of world's total natural gas reserves. They produce 44% of global gas and account for 66% of liquefied natural gas (LNG) trading. They maintained in their summit that enhanced cooperation in the gas industry would be the main factor in the balance between supply and demand. For them, working out mechanisms to counter factors that disturb the supply and demand security would rest with both producers and consumers. That is the most important message of the GECF summit to the industrialized and developing countries.

Gas producers and consumers are mutually responsible for the future of gas industry. Even it could be argued that market instability and lack of supply-demand balance would threaten the economic resources of producers, energy supply as well as development and social plans in consumer countries.

Gas supply security and enhanced production require long-term investment, and consuming countries have to assume their part of responsibility.

Addressing the GECF summit in Bolivia, Iran's First Vice President Es'haq Jahangiri told the audience that Iran had paved the ground for attracting investment and facilitating the partnership of international companies.

Gas consumers and international gas companies are expected to abide by their commitments vis-à-vis the market and fulfil their obligations towards gas market security and stability through joint investment, exchange of technical knowhow and transfer of technological savvy. That would allow their own people benefit from the advantages of this low-cost and clean source of energy.

Ministry of Petroleum Islamic Republic of Iran

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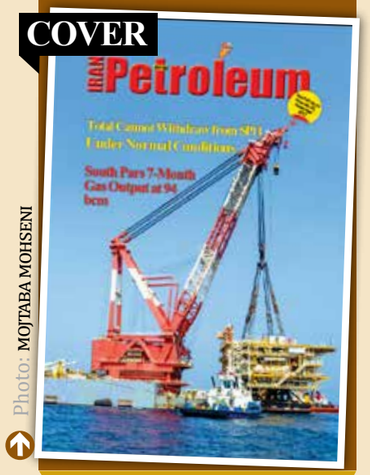


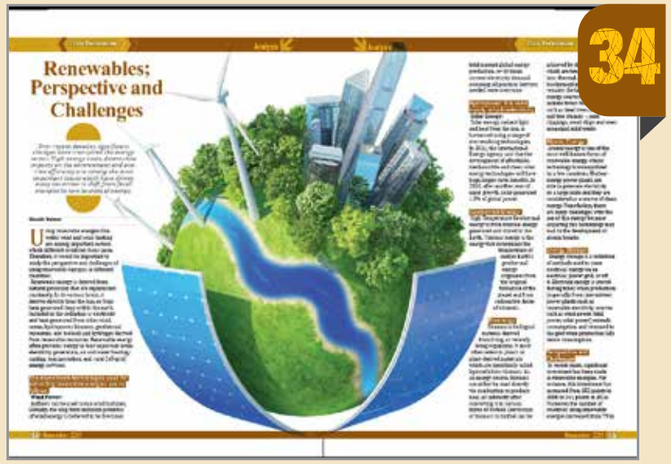
Photo: MOJTABA MOHSENI

22

Azadegan Oil Output Hits 100,000 b/d

28

34



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> GECF, whose members hold 67% of the world gas reserves, accounts for producing 44% of global gas. They also account for 64% of pipeline gas exports and 66% of liquefied natural gas (LNG) trade

GECF Holds Summit in Bolivia

Gas, Reliable Energy for Sustainable Development

The Gas Exporting Countries Forum (GECF) held an extraordinary ministerial meeting and its fourth summit in Bolivia on November 23-24. Iran's First Vice President Es'haq Jahangiri and Minister of Petroleum Bijan Zangeneh attended the Summit and the Ministerial Meeting.

In a declaration issued at the end of the summit, known as the Declaration of Santa Cruz de la Sierra, the GECF member states agreed to "promote the use of natural gas in its different forms and sectors, including energy production, transport and industry, for worldwide benefit and among all participants involved in the energy sector, through coordinated policies and strategies among the GECF member countries." The declaration also reaffirmed determination to "develop and implement coordinated policies and actions among GECF Member Countries to promote the long-term natural gas contracts necessary for financing natural gas projects." The GECF member states expressed their commitment to "pursue equitable risk sharing approach to the issue of gas pricing mechanism with the linkage to the crude oil and its products to ensure a fair price for natural gas taking into account its advantages in terms of energy efficiency and environmental premiums." They agreed to "promote and develop effective channels of dialogue between producers and consumers of natural gas, in coordination with regional and global energy organizations, in order to facilitate access to the global consumption of natural gas." GECF, whose members hold 67% of the world gas reserves, accounts for producing 44% of global gas. They also account for 64% of pipeline gas exports and 66% of liquefied natural gas (LNG) trade. The fourth Summit in Bolivia provided the GECF Member countries with the opportunity to discuss and exchange views on developments, trends, and policies on energy in general and gas in particular at the highest level, and also to reaffirm their continued support to

> These upheavals influence the situation of gas in the global energy arena in certain cases, harming market safety and the global gas supply and demand balance

the objectives of the Forum. Previous GECF Gas Summits were held in Qatar in 2011, Moscow in 2013 and in Tehran in 2015. Hosted by Bolivian President Evo Morales, the fourth Summit was attended by delegations from Algeria, Bolivia, Egypt, Equatorial Guinea, Iran, Libya, Nigeria, Qatar, Russian Federation, Trinidad and Tobago, United Arab Emirates, and Venezuela, as well as Azerbaijan, Iraq, Kazakhstan, the Netherlands, Norway, Oman and Peru as Observers.

Cooperation between Gas Producers

Addressing the Summit, Jahangiri said Iran had provided the necessary conditions for foreign companies to operate projects. "Iran has provided the necessary conditions for attracting investment and the activity of foreign companies," he said, adding that Iran believed that pursuing the interests of all GECF member states and materialization of GECF objectives would be the main goal sought by national, regional and international activities. Jahangiri called for the adoption of coordinated and convergent policies to neutralize unilateral and multilateral sanctions against any country. He said that gas market was a competitive market as gas has to vie with alternative sources of energy and emerging producers. Referring to geopolitical upheavals, he said: "These upheavals influence the situation of gas in the global energy arena in certain cases, harming market safety and the global gas supply and demand balance.""In light of these developments, as the main producers of natural gas, we need to upgrade our cooperation to a new level and move to share information and experience and coordinate our marketing and export policies at regional and international levels," said Jahangiri. He laid emphasis on cooperation between GECF member states in persuading national companies to exchange technical knowhow about reducing production costs, conversion and transmission of natural gas, joint investments and adoption of convergent policies, saying that would boost the collective interests of these countries.

Iran Boosting Ties with Gas Producers

On the sidelines of this summit, Jahangiri met with the presidents of Equatorial Guinea, Venezuela and Libya as well as the foreign affairs minister of Libya, and stressed the need for Iran's cooperation with these countries within the framework of GECF. Iran's sharing experience in the industrial and scientific sectors of energy, expansion of cooperation with these countries and removal of banking obstacles to economic cooperation were among topics highlighted in Jahangiri's bilateral meetings. Iran's Mohammad-Hossein Adeli, who is GECF Secretary General, said the gas market is dominated by rivalry. He said the emergence of a new business atmosphere required exporters and consumers to work out new mechanisms. Adeli called for vigilance vis-à-vis actions that may disturb supply and demand security. He added that both producers and consumers have to make efforts on guaranteeing gas market stability.

1st Int'l Seminar

The GECF member states also held their first international seminar on November 22, during which they discussed gas market conditions in Latin America and the bright future of the market. Adeli echoed remarks by a senior manager of Royal Dutch Shell, saying after the oil crash in 2014 oil companies reconsidered their financing and reduced costs. Shell has reduced its costs in the Gulf of Mexico by 60%.

Adeli Wins Praise

During the extraordinary ministerial meeting of GECF, Adeli received praise for the practice of his job as the secretary general of the forum of gas producers. Adeli's four-year term in office ends in December. Since Adeli's election to this post four years ago, the GECF Executive Board and Secretariat adopted five-year working plan for the implementation of the GECF long term strategy, conducted the feasibility study of the Gas Research Institute, and published the 2017 edition of GECF Global Gas Outlook 2040. Based on the long term strategy of the Forum, the Ministers reviewed and approved the Five-Year working Plan of the Forum. They also welcomed the Secretariat's initiative in completing and publishing the annual statistical bulletin that contains the valuable data and information on gas markets. The ministers also reviewed the report on the Feasibility Study of the Gas Research Institute and decided to create the GECF Gas Research Institute in Algeria. Upon the completion of two terms of tenure of incumbent Secretary General, the ministers selected and appointed Russian Yuri Sentyurin as the next Secretary General of GECF for a period of two years starting from January 2018.

SP11
Iran Petroleum

Total Cannot Withdraw from SP11 Under Normal Conditions

Iran's petroleum minister, Bijan Zangeneh, has said France's energy giant Total could not quit its deal for developing Phase 11 of the massive offshore South Pars gas field under "normal" conditions. "The contract for the development of Phase 11 of South Pars with a Total-led consortium is valid. This company cannot withdraw from this project under normal conditions," Zangeneh said. Meanwhile, Total CEO Patrick Pouyanné told CNN: "We are working on the project.

We launched the tenders; we should award contracts by January." "I hope by that time, Congress will have an answer for the president and the president will have to renew, or not [renew], the certification," he added. US President Donald Trump's get-tough approach to Iran has raised speculation about the huge energy investment which was signed just four months ago. Under the deal, Total and China's CNPC agreed to invest billions of dollars in Iran to develop the giant South Pars gas field in partnership with Iran's Petropars. It was the first investment of its kind since sanctions on Iran were eased in 2016 after Tehran promised to roll back its nuclear program. Trump has threatened to quit the nuclear deal if the US Congress and America's allies fail to strengthen it. "Either we can do the deal legally if there is a legal framework," Pouyanné told CNN Money Emerging Markets Editor John Defterios. "If we cannot do that for legal reasons, because of [a] change of [the] regime of sanctions, then we have to revisit it," he added. Asked by "Iran Petroleum" about the future of the deal, Zangeneh said: "We have a legally valid contract with Total, CNPC and Petropars, in which it has been specified how and under what conditions this company (Total) can pull out of this project." "Total could quit this project only under conditions that international sanctions are imposed on Iran by the UN Security Council," he added. Iran's nuclear deal with six world powers, known as the Joint Comprehensive Plan of Action (JCPOA), all oil companies are authorized to operate projects in Iran in compliance with international conditions. After the deal was signed in Tehran, Total's chief expressed hope that international relations and diplomacy would help the company remain in Iran.

SPOL Talks Under Way

Separately, Zangeneh said that talks were under way for the development of the oil layer of South Pars gas field. He said some problems occurred after Total acquired Denmark's Maersk "because Total became the contractor of both sectors" of South Pars, held jointly by Iran and Qatar. Maersk had applied to develop the oil layer of South Pars, and held intensive talks with the National Iranian Oil Company (NIOC), raising hopes for the finalization of an agreement.

However, Total's acquisition of Maersk's assets led to problems as Total's involvement in the Qatar-held section of the oil layer would give rise to conflict of interests.

Zangeneh said the Danish firm had not quit talks, adding that Iran had invited several other companies to join negotiations for the oil layer development. "In addition to companies that had been already invited to develop the oil layer of South Pars, we invited several others, most of which declined our invitation; however, given the complexity of development of South Pars oil layer some companies rejected our invitation." he added.

No Cheap Gas Supply to Norway

Zangeneh said that Norway's Helma had been charged normally for natural gas deliveries. "The minimum price of gas sold [to Helma] is the same as the price at which gas is delivered to petrochemical plants, so Iran has not undersold its gas," he added. "The price announced for natural gas is general and every company can invest in this sector under conditions laid out to that effect," said the minister. Iran could export its first liquefied natural gas cargo from the Persian Gulf as early as next year, if it presses ahead with its proposed floating LNG production project.

National Iranian Oil Company has signed a contract with joint venture company IFLNG to deploy a 500,000-tonne barge to liquefy gas from the giant South Pars field in the Persian Gulf and store and transfer the cargoes. IFLNG is a joint venture between Helma Vantage of Norway and Iran's Kharg Gas Refining Company. They are talking to Belgium-based ship-owner Exmar about a short-term charter for Caribbean FLNG. Zangeneh said: "Iran will sell gas to an industrial unit and the customer will then sell LNG."

Iran-Russia Cooperation

Zangeneh also said memorandums of understanding were signed with a number of Russian companies for future cooperation.

Asked about the reported $30 billion investment envisaged by Russian companies, he said: "Rosneft announced this issue and we are interested in their investment, but we are currently in the stage of MOU and they should submit their proposals to us."He added that the deadline had not yet expired for them to submit their proposals.

OPEC States Favor Cut Extension

Zangeneh said a majority of OPEC members support extending output cuts but a final decision will be taken at their next meeting on Nov. 30.

"The majority of members support the extension of the plan, but the final decision should be taken at the next OPEC meeting," he added. The Organization of the Petroleum Exporting Countries together with a group of non-OPEC producers led by Russia has reduced output since January 1 under an agreement set to run until next March. Producers are curbing their output in hopes of supporting prices and reducing inventories. Zangeneh also said: "If the production cut is extended, the exemption for Iran will also be extended." OPEC allowed Iran to increase output slightly to help it recover market share lost while under Western sanctions.

Photo: Mojtaba Mohammad Qoli

Iran Oil Terminals Handling Capacity at 28mb/d

The Iranian Oil Terminals Company (IOTC) is a strategic subsidiary of National Iranian Oil Company (NIOC). It is tasked with storage, measurement as well as import and export of crude oil, petroleum products and gas condensate, as well as offshore services.The IOTC is also managing crude oil swap operations which recently resumed in northern Iran after a hiatus.

Pirouz Mousavi, CEO of IOTC, says the company has handled 1.8 million barrels of crude oil within the framework of swap operation since the project was resumed. He told "Iran Petroleum" that this capacity was expected to rise in the future.

Here is the full text of the interview Mousavi gave to Iran Petroleum.

Photo:HASSAN HOSSEINI

It can handle 1.5 million barrels of oil. Refineries receiving crude oil have so far expressed satisfaction with the quality of the oil

Iran has since then suffered many losses in terms of foreign interactions, Caspian Sea security and economy

Hamid-Reza Shakeri-Rad

Thanks to the Iranian Ministry of Petroleum's efforts, crude oil swap operations recently resumed in northern Iran. How much is our current capacity in this sector?

Fortunately, several developments have happened with regard to swap operations with the Caspian Sea littoral states since August, and 1.8 million barrels of oil has since been shipped from Central Asian countries to refineries in Tabriz and Tehran in more than 36 cargoes. The equivalent amount has been delivered to foreign buyers in Kharg Island. I have to recall that swap operations in the north of the country are carried out via Neka terminal, which is equipped with state-of-the-art technology, technologically advanced labs and skilled workforce. It can handle 1.5 million barrels of oil. Refineries receiving crude oil have so far expressed satisfaction with the quality of the oil. The relaunch of oil swap with the Caspian Sea littoral states is another achievement of the Joint Comprehensive Plan of Action (JCPOA).

Given potentialities you just mentioned, do you think we may witness enhanced oil swap capacity between Iran and Central Asia in the near future?

Yes, at the moment Iran has capacity to receive 200,000 b/d of crude oil from Central Asian countries. It currently receives around 50,000 b/d. NIOC and Iran's Foreign Affairs Ministry are in talks with foreign parties to increase the volume of swap operations. Oil swap with Turkmenistan is currently under way. Kazakhstan, Russia and Azerbaijan will soon join this country. Given the serious talks under way by Iran's Ministry of Foreign Affairs and Ministry of Petroleum with foreign parties, I think that we will soon witness significant increase in swap.

Crude oil swap with the Caspian Sea littoral states was halted during years of sanctions for unspecified reasons. How much do you think Iran lost in this issue?

It happened exactly in 2010. The decision by Iran to halt swap under those circumstances was an erroneous and unplanned one. It was adopted only based on several reports. Iran has since then suffered many losses in terms of foreign interactions, Caspian Sea security and economy. In other words, this improper decision put in peril Iran's national interests. Meantime, we should not forget a $500-million investment plus 150-strong manpower of Neka terminal who lost their jobs during those years.

What are your plans with regard to increasing the capacity of receiving crude oil from the Caspian Sea states?

According to plans, a project has been envisaged to handle more than 500,000 b/d of oil. This project is planned to be built on 300 ha of land in the form of

> Once this capacity increased to 38 million barrels, Iran will be closer to international standards. Iran is exporting its crude oil on a daily basis which complies with its OPEC quota

> Iran has repaired more than 250 kilometers of its subsea pipeline, which is set to remove hydrodynamic scour at 250 critical points

Zoom

Due to climate change in southern Iran, we hope to minimize the rate of accidents at Kharg terminal. In addition to our obligations, we have made great achievements in the public interest projects. For instance, we have provided two passenger ships navigating between Bushehr and Kharg and three others between Kharg and Ganaveh as part of our efforts to serve local people in Kharg. Besides, more projects like water and power supply have been implemented.

13 jetties. So far, drainage operations and building of loading arms have been completed and 300,000 b/d of oil could be handled in the near future there.

What is Iran's current crude oil storage capacity?

Iran's crude oil storage capacity has reached 28 million barrels, which will be soon increased by 10 million barrels after the startup of privately-owned Ganaveh project. Once this capacity increased to 38 million barrels, Iran will be closer to international standards. Iran is exporting its crude oil on a daily basis which complies with its OPEC quota.

Currently due to good levels of crude oil exports, Iran's oil storage capacity is below 19 mb/d. That is because of Iran's agreement with countries and companies buying crude oil. For instance, Iran's crude oil exports to Europe are now more than the pre-sanctions levels.

Would you please tell us about the IOTC's plans for Jask?

The Iranian government's policy relies on establishing an oil terminal in the Makran coastal area and the Sea of Oman. To that end, more than 5,400 ha of land has been purchased and a refinery and a terminal with a capacity of 10 million barrels are expected to be erected there. Gas destined for Oman crosses this area. Crude oil is planned to be piped from Goureh to Jask before being exported by four single-point moorings. The project is planned to be done by the private sector over the coming four years. That would bring the crude oil storage capacity to 48 million barrels. Foreign companies and investors can cooperate with the private sector in this project.

Would you please tell us about the company's overhaul plans?

According to pre-scheduled plans, overhaul is under way at storage facilities and jetties. Currently, nine oil loading jetties are operating in Kharg. Furthermore, Iran has repaired more than 250 kilometers of its subsea pipeline, which is set to remove hydrodynamic scour at 250 critical points. Iran is monitoring and repairing pipelines by DP2 vessel which is fitted with cutting edge technologies.

Over recent years, the IOTC has set records in daily oil exports. Has there been any new record?

Last April we managed to repeat our last year's 8-million-barrel record. In the wake of reconstruction at the Kharg jetties we hope to set the 10-million-barrel record. To that end, overhaul of loading arms and metering of Azarpad jetty at Kharg Island are under way. We will also see a major change in offshore operations after buying four new tugboats.

What are your plans for cooperation with foreign companies?

We are currently ready to cooperate with major world companies in the field of maintenance of storage tanks. We have held talks with the Dutch company Vopak on this issue. We hope to soon sign a sister company deal with this company which is handling 60 oil terminals to cooperate in sharing experience and technological knowhow. Foreign investors can also cooperate with us in investment in the Jask terminal and buying tugboats on the rent-to-own basis. We currently own 10 tugboats and we have rented two others. We plan to add four tugboats to our fleet in order to phase out four clapped-out ones.

Would you please tell us about your social responsibility plans?

In cooperation with the Ports and Maritime Organization, the Office of Deputy CEO of IOTC for Human Resources has received permit to stage offshore pilots for the first time in the country. Fortunately, after the notification of laws and regulations on the maintenance of oil storage tanks, many projects have been considered. For instance, oil storage tanks earthing has been commissioned in Iran. Due to climate change in southern Iran, we hope to minimize the rate of accidents at Kharg terminal. In addition to our obligations, we have made great achievements in the public interest projects. For instance, we have provided two passenger ships navigating between Bushehr and Kharg and three others between Kharg and Ganaveh as part of our efforts to serve local people in Kharg. Besides, more projects like water and power supply have been implemented.

Jask Terminal to Diversify Iran Oil Export Routes

Iran is determined to attract domestic and foreign investment in a pipeline project that would deliver its oil from Goureh area to the Oman Sea coasts. That lies within the framework of Iran's longtime strategy to diversify its oil export terminals. This strategy has been pursued by Iranian oil officials since start of imposed war in 1980. During the years of the imposed war, oil storage facilities and jetties in Kharg Island, which were the main arteries of Iran's oil sales, were repeatedly bombed. Iranian officials then decided to envisage a new route for crude oil exports so that such an alternative would be always counted on. The project for a new route of crude oil export is now expected to materialize under the administration of President Hassan Rouhani. Given the government's concentration on this strategic project and the conclusion of its software affairs, Jask Terminal is largely expected to come on-stream before the Rouhani administration bows out.

Iran, a country rich in both oil and gas, currently exports oil and its derivatives only through Kharg Island. Jask Port, which is off the Indian Ocean, has potential to become an energy hub in Iran. Infrastructure activities are under way at this port and there is need for domestic and foreign investment. This port could be used as an energy terminal for exporting products of oil and gas sector including petrochemicals and liquefied natural gas (LNG). Although Jask is a vital treasure that has been neglected and has been abandoned to its own fate for years, it could become profitable if proper planning is made. Jask is planned to become the second energy terminal in Iran. Once it has been designed and built as Iran's second strategic terminal, it would be possible to export oil, gas and petrochemicals to the Indian Ocean countries. Geographically speaking, Jask is of high significance because all vessels particularly oil tankers that enter this area would not need navigate in the Persian Gulf and they could easily load oil, gas and other products without having to take a very long route. Despite tough restrictions and the Iranian minister of petroleum's sensitivity to this project, regular meetings are held every two weeks to monitor the details of the project. Building an oil export terminal at Jask Port is currently among the most important petroleum industry projects. Minister Zangeneh has insisted on the private sector's financing of this infrastructure project. One of main objectives sought in the construction of this pipeline and in the development of an oil terminal at Jask Port is to create a safe area for exporting crude oil outside Kharg Island. A terminal in Jask would accelerate oil exports, reduce delivery price and save oil tankers fuel. Moreover, navigation in the Persian Gulf will decline. Meantime, due to the significance of this project and the delivery of oil through areas where the temperature exceeds 50 degrees Centigrade, selecting appropriate pipes would be of high significance. An expert team comprising university professors and oil industry professionals conducted a one-year study to introduce a substance for pipes. Alongside time-consuming specialized studies, selecting a contractor who would be able to manufacture this kind of pipes would face tough challenges.

In parallel with the construction of Jask crude oil export terminal, construction of two refineries, a petrochemical plant as well as crude oil storage tanks with a capacity of 30 million barrels is on the agenda. Since the project is a build-operate-transfer (BOT) one, the necessary credit is required to be provided by private investors from sources other than oil. For this purpose, eight Iranian investors have expressed readiness to fund the project. All along the 1,000-kilometer Goureh-Jask route, five pumping stations are envisaged to be built. In total, eight stations are planned to be built for the crude oil installations.

Added Significance

So many years have passed since the project for building a terminal in Jask to export crude oil was raised. This project has not lost significance during these years and has even taken up added importance. Construction of Jask terminal would help Iran access the Sea of Oman for exporting 1 mb/d of crude oil. That would reduce Iran's dependence on the strategic Strait of Hormuz. Currently, more than 90% of oil produced in Iran is exported to foreign markets via Kharg terminal and the Strait of Hormuz which is 38 kilometers away from Ganaveh Port in the Persian Gulf. That is while the experience of the imposed war and arrangements by countries in the region to build alternative routes to the Strait of Hormuz have increased the significance of quick startup of Jask terminal as an alternative route. Once the Jask terminal is launched, handling the export of 1 mb/d of crude oil would be shifted from the Persian Gulf to the other side of the Strait of Hormuz in the Sea of Oman. This project would cost Iran IRR 4,000 to 5,000 billion, but it would guarantee sustained oil export and enhance oil storage capacity under any circumstances.

Analysts say since Kharg Island enjoys a good geographical position in the Persian Gulf it may seem that the project of transferring crude oil from Bushehr to Jask - 1,000 kilometers farthe- would be uneconomical. But security reasons necessitate the construction of an alternative route for exporting crude oil, particularly when a crisis may happen in the Persian Gulf to block the Strait of Hormuz.

At a time Iran has prioritized the construction and startup of Jask oil terminal, countries like Saudi Arabia, United Arab Emirates and Iraq have already thought of an alternative route for crude oil exports whenever a crisis occurs.

RIPI, Germany's Raschig Sign Technology MOU

1

Germany's Raschig GmbH has signed a memorandum of understanding with Iran's Research Institute of Petroleum Industry (RIPI) on the transfer of technology to Iran's oil, gas and petrochemical industries. Michael Schultes, Raschig's technical director, and Mansour Bazmi, the head of RIPI's Technology and International Relations Department, signed the agreement in Tehran. "This company is among the most reputable ones in the world and many industries are cooperating with it," Bazmi said of Raschig. He said that the preliminary deal is centered on providing Iran with the know-how to design and build distillation units at refineries and petrochemical plants based on Raschig's equipment. The German firm will also hold training courses in Tehran as part of the agreement. "RIPI has carried out extensive research on the design of distillation units, and collaboration with Raschig will help us push the boundaries," Bazmi said. "After initial assessments, we found Iran to be a suitable partner for trade and the commercialization of our products," Schultes said. "We are a service provider for distillation units in Germany and many other countries." Raschig GmbH provides fine chemicals, high performance thermoset resins, fast-acting road repair materials, and process technology equipment.

Gas Exports to Neighbors Continuing Smoothly

2

Turkey and Iraq are the three main buyers of Iran's gas. Delivery of gas to these countries is under way smoothly. Saeed Tavakoli, CEO of the Iran Gas Transmission Company, said Iran exported a total 5.4 bcm of gas, or 30 mcm/d, to Turkey during the first half of the current calendar year (started in March 2017). "Our contract with Turkey is annualized, under which we have to deliver a specified amount of gas to Turkey during a full year," he said. "Therefore, when domestic consumption goes up, for instance at peak shaving in winter, we reduce exports to Turkey by benefiting from this advantage of the contract."Tavakoli said Iran exported 8 bcm of gas to Turkey in the last calendar year.

He also said that Iran is required to pump between 7 and 25 mcm/d of gas to Baghdad. He added that Iran had delivered a total 1.2 bcm of gas to Iraq's capital since gas delivery to Baghdad started in June.

Norway Helping Iran with Shipbuilding

3

The head of National Iranian Tanker Company (NITC) has said Norwegian companies are helping Iran with shipbuilding projects.

Addressing an Iran-Norway maritime seminar in Oslo, Sirous Kian Ersi said Norwegian manufacturers of ship parts and equipment had been cooperating with the NITC since 20 years ago. He added that boarder ties between Iran and Norway required development of banking relations between them. "In light of Iran's navigation renovation plans, Norwegian firms are on the list of suppliers of equipment and parts needed by ships," said Kian Ersi. He said that the NITC also planned to develop its fleet for transporting liquefied petroleum gas (LPG) and liquefied natural gas (LNG). Referring to the enforceability of the law for reduction of the sulfur content of ship fuels in 2020, Kian Ersi said: "In compliance with international regulations, the NITC has signed an agreement with the Research Institute of Petroleum Industry (RIPI) with a view to reducing the sulfur content of ship fuels."

Iran Methanol Exports to Hit 15mn Tonnes

4

Iran's methanol exports are expected to reach 15 million tonnes in five year, the head of Tamin Petroleum & Petrochemical Investment Co. (TAPPICO) has said. "Iran's petrochemical industry has in recent years faced various challenges like international sanctions, increased production and supply of shale from North America and energy carriers' price decline," Mohammad Hassan Peyvandi said. "Despite these challenges, Iran has been successful in methanol production in recent years and its methanol exports would reach 15 million tonnes in five years," he said, adding that methanol-to-propylene production units were under way. Peyvandi said Iran enjoyed a good position for investment in gas conversion industry, methanol production and completion of value chain. "The gas feedstock price is a major advantage of petrochemical industry and investment in this industry." "With a view to creating jobs and developing the petrochemical industry, we are making efforts to master downstream industry technologies and complete the natural gas-based mix of products, which would also help us develop intermediate products," he added.

OPEC Extends Supply Cuts Deal

5

OPEC and a Russia-led group of big oil producers agreed to keep limiting their output through the end of 2018 as they seek to provide assurance for an oil industry still working through a fragile recovery. The agreement was reached during the 173rd ministerial meeting of the Organization of the Petroleum Exporting Countries in Vienna. The producers' current deal, under which they are cutting supply by about 1.8 mb/d in an effort to boost oil prices, expires in March 2018.

OPEC also decided to cap the combined output of Nigeria and Libya at 2017 levels below 2.8 mb/d. Both countries have been exempt from cuts due to unrest and lower-than-normal production. Before the meeting, Iran's Minister of Petroleum Bijan Zangeneh said an extension of the deal would be a sign of unity and solidarity between OPEC and non-OPEC allies. "Over the past year, oil inventories have declined by around 180 million barrels and they will continue to decline," Zangeneh said.

"OPEC members do not seek to cause problems for oil consumers; however, oil price volatility will benefit neither producers nor consumers," he added. When asked by CNN whether Iran's oil production had remained under 4 mb/d due to the OPEC deal or it planned to raise output, Zangeneh said: "We remain committed to OPEC's decisions. Of course, you need to take into consideration that oil production capacity is different from the capacity of oil supply to market. These two issues are totally different." Before leaving Vienna, Zangeneh said the 173rd meeting wherein producers and consumers concluded that they favored the continuation of the current stable situation, was very calm.

OPEC and Russia together account for over 40 percent of global oil production. Moscow's cooperation with OPEC has been crucial in roughly halving an excess of global oil stocks since January. A joint OPEC and non-OPEC communique said the next meeting in June 2018 would present an opportunity to adjust the agreement based on market conditions. Since the pact started a year ago, global inventories have fallen and prices rose by more than $20 a barrel, but in a rare display of unanimity at an OPEC meeting ministers agreed the job wasn't yet complete. By keeping the 1.8 mb/d of cuts in place for a further nine months, the oil producers aim to return stockpiles to their five-year average without overheating the market and eliciting a new flood of shale oil.

Uzbekistan Eager to Buy Iran Oil

Iran's Minister of Petroleum Bijan Zangeneh met with the visiting Uzbek deputy Prime Minister, Alisher Sultanov, in Tehran.

After the meeting, Zangeneh said: "Iran is eager to develop relations with this country in different sectors."

"This was the second meeting with Uzbek officials in one month, and these meetings are mainly focused on oil and downstream sectors," he added.

Zangeneh said Uzbekistan was willing to invest in Iran's upstream oil and petrochemical sector.

Noting that Uzbekistan is willing to buy oil from Iran, he said: "The issue of oil purchase could be the first step for the expansion of cooperation between the two countries, which may come to fruition before other issues."

Zangeneh said negotiations on Iran's oil sales to Uzbekistan would be followed up on by the Directorate for International Affairs of National Iranian Oil Company.

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Uzbekistan, a breakaway republic of the former Union of Soviet Socialist Republics, shares border with Afghanistan, Tajikistan, Turkmenistan, Kyrgyzstan and Kazakhstan.

Uzbekistan Eyes Iran Petchem

Reza Norouz-Zadeh, CEO of Iran's National Petrochemical Company, said after his meeting with Sultanov that Uzbekistan would like to invest in Iran's petrochemical industry, particularly in converting methanol to olefin.

"Although the Uzbeks have rich gas resources they are willing to invest in areas which, in addition to being rich in gas, would have access to high seas," he said.

Norouz-Zadeh said all "investee petrochemical projects" whose preliminary studies have been concluded would be introduced to Uzbekistan for consideration.

Early Recovery from South Yaran

Early recovery of 10,000 b/d has started from South Yaran oil field in western Iran, a senior official says.

CEO of Petroleum Engineering and Development Company Nouroddin Shahnazizadeh said the early production started from six wells. "The South Yaran field is located between Iraq's Majnoun and Iran's South Azadegan. The 10,000 b/d of oil produced at South Yaran is immediately transferred to Manifold 7 of South Azadegan field before being delivered along with the South Azadegan oil to export terminals," he said.

Shahnazizadeh said 18 wells had been drilled in this jointly owned field by National Iranian Drilling Company (NIDC) and domestic contractors. He added that 15 wells were located in the Sarvak layer and three others in the Gadvan layer. Shahnazizadeh said arrangements were being made for the signature of a deal for the integrated development of North Yaran and South Yaran oil fields between the National Iranian Oil Company (NIOC) and the Persia Oil and Gas Industries Development Company.

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Singapore Signs Deal to Study Iran Field

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Singapore-based Berlanga Group has signed a memorandum of understanding and a non-disclosure agreement with the National Iranian Oil Company (NIOC) to study Iran's Dalpari Oilfield in the western Ilam Province. The agreement was signed in Tehran by Shyngys Kulzhamov, the head of Berlanga, and Ramin Hatami, managing director of Iranian Central Oil Fields Company, in the presence of Gholam-Reza Manouchehri, deputy CEO of NIOC for development and engineering affairs and David Walker, managing director of Berlanga. The West Oil and Gas Production Company, a subsidiary of ICOFC, operates the field and its oil is delivered to Cheshmeh Khosh operation zone through a 28-kilometer, 8-inch pipeline. NIOC has already concluded MoUs with Austria's OMV and Thailand's PTTEP for undertaking surveys on the oilfield. Dalpari is an underdeveloped oilfield, although its discovery dates back to almost four decades ago. Data show that Ilam holds 11% of Iran's total oil and gas reserves.

Iran Raises Petchem Exports to Turkey

The head of Petrochemical Downstream Industry Development Department has said that the tariffs levied on Iran's export of petrochemicals to Turkey would decline.

"Negotiations are under way between the two countries and we hope that we would reach agreement for increasing petrochemical exports to Turkey," Reza Mohtashamipour said. He added that Turkish officials expressed their readiness to modify tariffs levied on Iran's petrochemical exports to Turkey. Mohtashamipour said 10 items of petrochemical products had been proposed for tariff modification, adding that five items were added to the list throughout talks with Turkish officials.

He said that bottle PET, tissue PET, TDI, polypropylene copolymer and polystyrene were the five new products added to the list for tariff reduction. Mohtashamipour said that polyethylene, methanol and urea were already on the list.

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Romania Ready to Build Equipment for Iran

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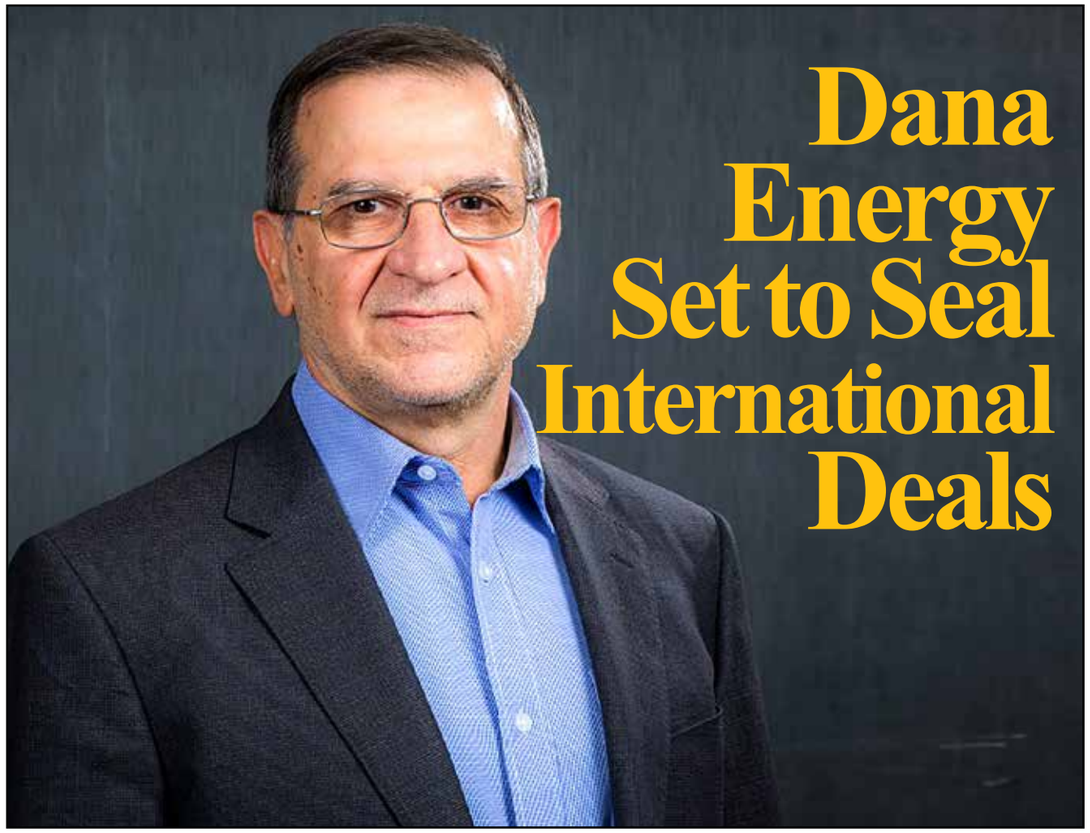
Iran's deputy minister of petroleum Amir-Hossein Zamani-Nia said Romania would be ready to manufacture equipment for Iran's oil and gas industry. He made the remarks after meeting Chairman of Iran-Romania Parliamentary Friendship Group Virgil-Daniel Popescu. "This country is willing to receive gas from Iran and on this basis we discussed options for cooperation in this field," Zamani-Nia said. He said Romanian companies had expressed willingness to get involved in Iran's petroleum industry projects. "They have also expressed readiness to manufacture oil and gas equipment and cooperate with Iranian companies," said Zamani-Nia. Since the first administration of President Hassan Rouhani took office in 2013, meetings at various levels have been held between Iranian and Romanian officials for cooperation in the oil, gas and petrochemical industries. Romania is a sovereign state located in Southeastern Europe. It borders the Black Sea, Bulgaria, Ukraine, Hungary, Serbia, and Moldova.



Dana Energy Set to Seal International Deals

Dana Energy is one of the companies approved by Iran's Ministry of Petroleum to operate in the Exploration and Production (E&P) sector. Since last year, it has signed six Memorandums of Understanding with National Iranian Oil Company (NIOC) and foreign companies to act as an operator or non-operator in developing oil and gas fields. Mostafa Khoee, President of E&P and Board Member of Dana Energy, says the findings of technical studies conducted under MOUs have been submitted to NIOC. In an interview with Iran Petroleum, he expressed hope that Dana Energy would act as a leading player in the development of Iranian fields. The full text of the interview with Khoee is as follows:

Negar Sadeqi

More than a year has passed since the Dana Energy qualifications were approved by Iran's Ministry of Petroleum for operation in E&P sector. What have you since done?

Ever since we decided to work as an E&P company we sketched out a roadmap for moving ahead. From the very beginning, our decision was to work both as operator and non-operator; signing operator agreements independently with NIOC for the development of small and medium-sized fields and serving as non-operator and local partner to international companies in field development. According to our planning and objectives, we will become a leading Iranian E&P company over the coming five years. After five years, in addition to our partnership with foreign companies, Dana Energy is looking to gain a 100,000 b/d share in oil production.

Is it a big objective?

Of course it is. However, achievable. We have taken significant steps over the past year to become "partner of choice" for E&P projects. All these steps are aimed at reaching the production target we have foreseen.

You have signed six MOUs with international firms and NIOC. Would you please outline them?

Yes, we recently signed an MOU with NIOC to serve as an independent operator in studying Sepehr and Jufayr fields. In addition, we have signed four MOUs with three European and one Russian companies to act as the Iranian local partner for the joint study and bidding on the following fields: Band-e Karkheh, Changuleh, Sohrab, Paydar Gharb and Aban field.

In projects where we are the operator party, we will choose a foreign non-operator partner, as requested by NIOC. We are currently in talks with foreign companies that have been operators to join us as our non-operator partner in these projects. The estimated investment for the two fields (Sepehr and Jufayr) is around $2 billion. In the projects where we act as non-operators, our share will vary from 10 to 30% depending on the size of the project. In this sector too, we will have an effective role in the implementation of project.

NIOC insists that we apply enhanced recovery methods to increase and preserve production from the fields. For this purpose we will be using the latest technology

Have the results of MOUs you signed to serve as non-operator been specified?

The results of studies conducted on three fields, have been submitted to NIOC and most technical proposals submitted have been accepted by them.

So you have started talks for signing agreement?

Yes, we are currently in talking stages for the signing of agreements.

Have you specified the model of development for the field?

Yes, the fields for which MOUs have been signed are brown and green fields. NIOC insists that we apply enhanced recovery methods to increase and preserve production from the fields. For this purpose we will be using the latest technology.

What will be the framework of your cooperation with foreign companies?

Two approach were taken by foreign companies: Some had chosen their Iranian partners when they were signing their MOUs with NIOC before starting their studies, and others decided to conduct studies initially without seeking an Iranian partner and only to make a decision when they reached the signing of contract stage.

As for Dana Energy, we were chosen as the foreign companies partner before

the signing of MOUs and cooperated with them in studying of the fields.

How was your involvement in the project?
Ever since the new model of oil contracts were presented by NIOC, we knew that we didn't just want to be a silent partner and aimed for a balanced partnership. Hence, Dana Energy established an expert team to review the legal, contractual, commercial, technical and financial aspects of this agreement and to become proficient with IPC (Iran Petroleum Contract). We knew that this will be to our advantage and we can play an effective role in saving time and helping our foreign partners in understanding this new model. This combined with our deep knowledge on Iran and International standards, allowed us to have a significant contribution in these studies.
For instance, alongside our foreign partners, we played an imported role in designing the model of reservoir, in geological studies, risk studies, revision of studies and how to achieve the better results. Or regarding cost, our knowledge on the market and its trends allowed us to estimate the precise investment costs for these projects. You can appreciate how essential these contributions are to a foreign partner.

Are Iranian and foreign companies' cost estimations very different?
In some aspects, yes. Foreign companies base their approximation on international database and this information is not compatible for estimating cost in Iran. Therefore, Iranian companies' data would be very helpful to foreign companies. However, this isn't always easy to come by and what would benefit a foreign company is a partner that knows the Iranian market and understands its trends.

Can you an example of the effective presence of Dana Energy in the technical and engineering studies for the development of fields?
Yes, for example in Changuleh field, we found and evaluated geological evidence, which helped the operator for reassessments. The finding were that Changuleh was significantly bigger than initially thought.

What do you plan to do for financing in case you want to serve as operator or non-operator of project?
Financing is one of our major concerns, as we need to seek financing from abroad due to the uncertainties in Iran. Our corporate finance team recently went to Europe to study the market there and find leads for financing. I am positive about our approach despite the challenges and optimistic with financing deals following through.

In addition to these projects, are you in talks with any other project?
Not at this stage. We are focusing on the projects at hand and will consider others upon gaining financial resources.

How hopeful are you to sign agreements up to the end of the year?
Very hopeful, since in projects where we are non-operators, technical talks have been concluded and NIOC has agreed with the proposals.

Therefore, it is likely that we sign at least three contracts by March 2018. Regarding, Sepehr and Jufayr, it seems their tender will be held next year.

How do you think relations between NIOC and Iranian E&P companies should be?
In my view, NIOC should define a specific strategy regarding Iranian E&P companies, which I don't think such a strategy exists now. The E&P sector is a naturally risky and capitally intensive field, especially now with the down turn in crude oil prices and decline in investment in the upstream sector. Iranian E&P companies face further challenges as well, like the financial restrictions and the unclear relationship between Iranian and foreign parties in JOAs. NIOC can be very supportive to Iranian E&P companies in these regards.

Do you expect any financial assistance from NIOC? Under IPC, NIOC has no financial obligation and the contractor is required to provide its share of finance. Now if NIOC is to provide financial assistance will it operate the projects too?
The IPC roles are clear and no one expects financial help, however, we expect NIOC's support in drawing up regulations and obtaining licenses to ease the challenges Iranian E&P companies are facing.

In designing the joint operating agreement (JOA), what is your expectation from NIOC?
My expectations are that the JOA model is designed in a way that is mutually beneficial to both parties and the role of the Iranian companies are defined clearly so that they can play an effective role in their cooperation with foreign companies.

What is your own strategy on this route?
As a fully private entity, we aim to be the leading Iranian E&P Company and this is reflected in our strategy and approach. As I mentioned earlier we are seeking a balanced partnership, one that we aren't just a partner but an effective player. To achieve this, two years ago we started a management program to equip ourselves technically and financially. These preparations have paid off and it is evident in foreign companies' willingness to partner with Dana Energy.

How do you think the relationship between Iranian E&P companies and their foreign partners must be?
This framework of cooperation and relationship must be mutually beneficial with clear defined regulations. Both sides should play an effective role and not be a silent partner but be present in the projects.

Given the fact that you are a private company and activity in E&P is a new experience, are you planning to be present in large scale projects?
At this stage, no. The scale of our presents and expansion depends on many criterial. Hence, we are keeping to the small – medium size project to maintain a profitable management portfolio. E&P is new to all of us in Iran. We believe that we can be effective in Iran's petroleum industry by operating small-Medium scale projects for the time being.

Azadegan Oil Output Hits 100,000 b/d

Oil production from South Azadegan oil field has exceeded 100,000 b/d. Shared by Iran and Iraq, South Azadegan underwent development in 2014 by Iranian contractors.

North Azadegan and South Azadegan are expected to be awarded for development under the newly developed "Iran Petroleum Contract" model.

National Iranian Oil Company (NIOC) divided Azadegan in two in order to accelerate its development. South Azadegan is the larger section.

South Azadegan is located in the hydrocarbon-rich West Karoun area near the border with Iraq.

NIOC signed a buyback deal in 2009 with China's CNPCI to develop the field. Due to modifications in the master development plan (MDP), operations started in September 2012 and finally no result was achieved. In 2014, Iran officially terminated the deal due to the Chinese party's feet-dragging in respecting its commitments. After that, Iranian contractors were put in charge to develop the field.

When client- Iran's Petroleum Engineering and Development Company (PEDEC) - decided to award the project to Iranian contractors, everyone thought that Iranian companies could not enhance output from this field under sanctions. But later on it was proved that Iranians managed to increase oil output from South Azadegan and reduce drilling costs in the field.

50,000 b/d to 80,000 b/d

Oil production from South Azadegan is expected to increase in two phases. In Phase 1 and Phase 2 oil output reaches 320,000 b/d 6,000 b/d, respectively. But since the oil field is jointly owned by Iran and Iraq, early production was envisaged so that Iran would not lag behind Iraq in oil extraction from South Azadegan.

Iran's production from South Azadegan was below 50,000 b/d, which has been raised to 80,000 b/d with the drilling of 30 new wells by Iranian contractors.

Output at 100,000 b/d

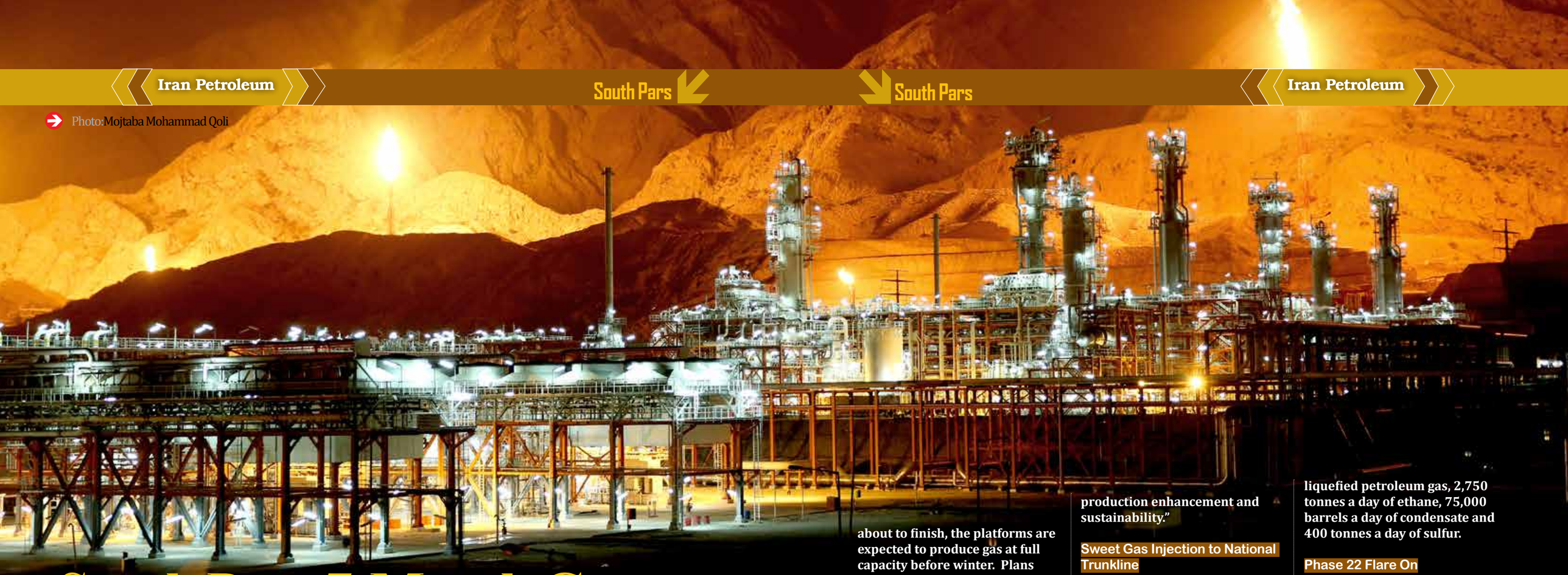
Although NIOC has decided to develop Azadegan completely, output enhancement plans continue in parallel with technical studies by international companies. PEDEC has announced that oil production from South Azadegan would keep rising as long as no tender bid has been launched. After 13 new wells become operational in South Azadegan, the output from this field would soar to 100,000 b/d. PEDEC has said it still plans to increase production from South Azadegan.

North Azadegan, which has been developed by CNPCI and is currently producing 75,000 b/d, came on-stream in November 2016 by Iranian President Hassan Rouhani.

35bn Barrels of Reserves

Azadegan holds more than 35 billion barrels of oil in place. That, along with sophisticated drilling, has led NIOC to study demands by potential bidders with more sensitivity. Preservation of output and boosting the rate of recovery from this field are of high significance. Under the new model of oil contracts, NIOC lays emphasis on applying modern technologies to boost recovery rate and transfer technology into Iran. Last September, representatives of 14 international companies bidding for the development of Azadegan oil field visited the existing infrastructure in West Karoun area, and gathered information about the status of the field. NIOC signed agreements with some of bidders to study the oil field. So far, Malaysia's Petronas, Royal Dutch Shell, Japan's Inpex and France's Total have submitted the results of their studies to NIOC. The memorandums of understanding signed with these companies would not be considered an advantage for them in bidding for the field. Azadegan will be put out to tender to be finally awarded to a qualified company.

Photo:Mojtaba Mohammad Qoli



South Pars 7-Month Gas Output at 94 bcm

In the last calendar year to March 2017, Iran's accumulated gas production from the supergiant offshore South Pars gas field reached 155.23 bcm. During the first seven months of the current calendar year, Iran recovered nearly 94 bcm of gas from the gas field shared with neighboring Qatar. Roughly 75 bcm of the gas produced this year has been sweetened at South Pars Gas Complex (SPGC).

Abdorrahman Salehi, deputy head of dispatching at SPGC, says enhanced production from South Pars is one of significant achievements of the Islamic Republic. After the first administration of President Hassan Rouhani took office in 2013, gas production from South Pars has increased 53%.

Yahya Rashidi, deputy managing director of Pars Oil and Gas Company (POGC) for operations and logistics, said POGC's share of the South Pars output would exceed 75% once the offshore phases of South Pars became operational.

570 mcm Up to March 2018

The rich sour gas produced from the 14 platforms of phases 12, 15, 16, 17, 18, 19, 20 and 21 has reached 135.6 bcm. By next winter, production from newly launched development phases of South Pars would reach 272.9 mcm/d.Currently, nine gas refineries are producing gas at SPGC, each responsible for receiving flare gas from each phase of the gas field. These refineries receive enriched sour gas and convert it to sweet gas and other products. During the first seven-month period of the current year, production of liquefied petroleum gas (LPG), propane and butane each reached 1.336 million tons, while gas condensate production was recorded at 114.08 million barrels. Furthermore, over 1.303 million tonnes of ethane was supplied to Jam, Kavian and Morvarid petrochemical plants.

So far, 25 gas platforms have become operational at South Pars. As overhaul operations are about to finish, the platforms are expected to produce gas at full capacity before winter. Plans are under way for the South Pars output to reach 570 mcm/d before the current calendar year ends. Rashidi said accumulated gas production from South Pars reached 1,147 bcm at the end of the first half of the Iranian calendar year. He added that the South Pas accumulated output would increase significantly in coming years as some development projects would become operational over two years. He also gave a positive assessment of the quality, pace and precision of offshore operations at South Pars, saying: "Given the easing of restrictions and improvement of international atmosphere with regard to oil and gas industry, foreign companies have expressed more willingness for cooperation in the South Pars projects, while the quality and pace of activities, installation of equipment and spare parts have increased thereby leaving positive and favorable impacts on production enhancement and sustainability."

Sweet Gas Injection to National Trunkline

While gas production enhancement continues in South Pars incessantly, remaining phases of this massive gas field are being developed. For instance, high-pressure and medium-pressure flares at the refinery of Phase 13 were recently launched. With the finalization of the process of completion of control and safety system of the refinery, the first gas sweetening train is expected to come online next February so that sweet gas would be injected to the national gas trunkline. Payam Motamed, manager of South Pars Phase 13 development, says: "Given the coincidence of drilling, construction of platforms, and onshore and offshore pipe laying, Phase 13 would become fully operational next calendar year."

Phase 13 of South Pars is under development to produce 56 mcm/d of sour gas, 50 mcm/d of sweet gas, 2,900 tonnes a day of liquefied petroleum gas, 2,750 tonnes a day of ethane, 75,000 barrels a day of condensate and 400 tonnes a day of sulfur.

Phase 22 Flare On

While operations are under way at a high pace for the development of Phase 13 of South Pars, the flare of Phase 22 was recently turned on after sweet gas was supplied by Iran Gas Trunkline 6 (IGAT 6).

Farhad Izadjou, manager of Phases 22-24 of South Pars, said these phase require the startup of utility services including nitrogen unit and control rooms ITR7, IRT11 and ITR13.

The first train of sweet gas production at the refineries of Phases 22-24 of South Pars is expected to become operational by next March through using sour gas from Phases 6-8 of the gas field. Phases 22-24 of South Pars are expected to produce 56 mcm/d of rich gas, 75,000 b/d of gas condensate, 1.05 million tonnes a year of liquefied petroleum gas, 1 million tonnes a year of ethane to feed petrochemical plants and 400 tonnes a day of sulfur.

NISOC Output up 1 mb/d

Iran raised its oil output from 2.83 mb/d to around 3.8 mb/d after its landmark nuclear deal with six world powers came into effect in January 2016. National Iranian South Oil Company (NISOC) accounts for 83% of Iran's oil production, the highest share among Iranian companies. NISOC has managed to increase its output by 1 mb/d over the past one year.

Abdorreza Dabiri, director of production at NISOC, says the company's reliance on the potential and experience of its staff is a key reason for the increased output.

He referred to the drilling of 150 development, workover and repair wells over the past year, saying: "With these measures, a 450,000 b/d reduction was prevented. Therefore, it can be argued that we have experienced a total 1.45 mb/d increase in output since" 2016.

NISOC has five subsidiaries: Karoun Oil and Gas Production Company, Maroun Oil and Gas Production Company, Gachsaran Oil and Gas Production Company, Masjed Soleyman Oil and Gas Production Company and Aghajari Oil and Gas Production Company. NIOSC, which supplies 80% of Iran's crude oil and 16% of the country's gas output, administers more than 45 hydrocarbon fields sprawling on more than 400,000 square kilometers stretching from Bushehr Province to Khuzestan Province.

Commenting on the NISOC performance in the first half of the current calendar year, Dabiri said: "Regarding oil production, our objectives have been achieved 100% and we are currently producing 2.925 mb/d of oil. In the gas production sector, we have brought gas production to 71 mcm/d."

$3bn Investment Targeted

NISOC has devised a two-year plan to develop 10 oil reservoirs. Abdollah Mousavi, director or corporate planning at NISOC, says these projects require $3 billion in investment. He said that the capital would be provided mainly by the National Development Fund of Iran (NDFI). This amount of investment, which is to serve 10 fields urn by NISOC, will help the prosperity of business market and creation of direct and indirect jobs in Khuzestan and other oil-rich provinces. Highlighting the necessity of partnership between domestic and foreign investment companies, Mousavi said production enhancement, production preservation and removal of obstacles to production need financing. Under Iran's 6th national five-year economic development plan, the country's oil production is expected to reach 5.2 mb/d. NISOC is instrumental in the materialization of such an objective. Bijan Alipour, managing director of NISOC, said the company was targeting a minimum output of 3 mb/d. He said that 80% of equipment needed by petroleum industry is manufactured in Iran with 41% being supplied from Khuzestan Province.

Aghajari Output at 600,000 b/d

An offshoot of NISOC, Aghajari Oil and Gas Production Company is a major supplier of gas. Oil and gas condensate production from this company reaches 600,000 b/d and its gas output stands at 800 mcf/d.

Ebrahim Piramoun, CEO of Aghajari company, said plans were under way for injecting 3.5 mcf/d (98 mcm/d) of gas to six oil fields run by the company. He added that the Aghajari oil field would account for 2 bcf/d of gas injected into oil fields.

Aghajari Oil and Gas Production Company injects gas to the following gas fields: Aghajari, Rag Sefid, Karanj, Parsi, Ramshir and Pazanan.

Asked about the amount of investment needed for the renovation of NISOC-run oil facilities, he said: "According to estimates, only the renovation of surface installations of Aghajari field will need more than $3 billion in investment."

Maroun Output Higher Than Planned

Maroun Oil and Gas Production Company has been producing more than 570,000 b/d of oil up to November this year. Jahangir Pourhang, CEO of the company, said output targets had been reached.

He said that gas and naphtha production by this company increased 107% and 110%, respectively. The waste produced by this company can be injected at the rate of 20,000 b/d. as a result; over 98% of desalting wastes are injected into disposal wells.

He also touched on the Maroun company's performance in domestic manufacturing of equipment for petroleum industry, saying 4,494 items had been built in partnership with domestic industrialists in the first half of the current calendar year, while 265 more items had been repaired. Moreover, he said 13 domestically manufactured pumps were purchased and old electropumps had been renovated. The result was a 20,000-barrel increase in desalting waste injection.

Masjed Soleyman Output at 142,000 b/d

Masjed Soleyman Oil and Gas Production Company is one of the oldest oil producing companies in Iran. Renovation of its operating units has been on the agenda of National Iranian Oil Company (NIOC). Many projects in this sector are being completed.

Nasser Qobadi, CEO of the company, said every year a new unit comes on-stream, adding that some units are still ageing. He said that the company is producing 142,000 b/d of oil plus 270 mcf/d of gas. Qobadi touched on the planned development of Masjed Soleyman field by China's CNPCI under a buyback agreement, adding that implementation of this project would lead to significant increase in the output from one of the oldest oil fields run by Masjed Soleyman Oil and Gas Production Company.

He said the primary output of the company was 25,000 b/d, which has gradually reached 6,000 b/d. Qobadi added that development of this field would bring production to 10,000 b/d after well reparation and installation of downhole pumps.

He welcomed potential foreign investment for increasing the production units, adding that domestic manufacturers should take into consideration standards and quality.

Iran Oil and Gas Production Capacity (2005-2016)

Sustainable crude oil and gas production is a vital element in Iran's economic cycle. Iran's oil and gas production has seen ups and downs from 2005 to 2016, which are manifested in this infographics.

Oil Production Capacity Trend

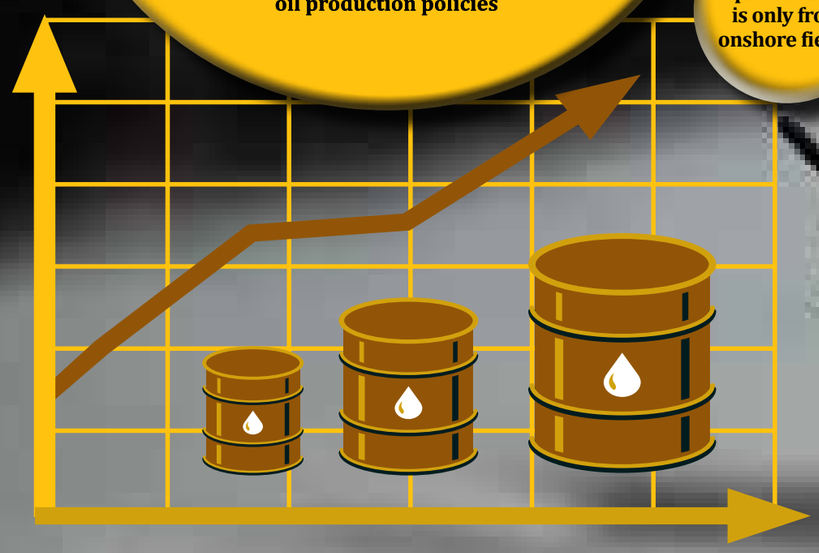
2005-2008: Over 4 mb/d
Reason for Stable Output:
Implementation of oil field development contracts signed by the 7th and 8th administrations

2009-2011: 3.9 mb/d
Reason for Output Decline: Halt in new oil field development projects

2012-2015: 2.8 mb/d
Reason for Output Decline: Halt in new oil field development projects, production decline in some oil fields and international sanctions imposed on Iran's petroleum industry

2016: 3.7 mb/d
Reason for Output Hike: Nuclear deal, removal of sanctions, JCPOA implementation, 11th Administration's Ministry of Petroleum's effective oil production policies

Note:
This enhanced production is only from onshore fields.



Gas Production Capacity Trend

2005: 436 mcm/d | **2012: 622 mcm/d** | **2016: 780 mcm/d**

Over 100 mcm/d output hike from 2013 to 2016

Main Gas Production Facility:
South Pars gas field
(startup of phases 12, 15&16, 17&18, 19&20, 21)

Reason for Output Hike amid Sanctions:

11th Administration's Ministry of Petroleum prioritization of phase development, nuclear deal and JCPOA implementation

Dising: SAMAN GOODARZI
Preparation by: HAMID-REZA SHAKERI-RAD

Ethylene Pipeline, Iran's 3rd Petchem Hub

Under Iran's Vision 2025, petrochemical industry has been chosen as an option for the country to move towards reducing crude oil and natural gas sales and generating value-added. As a value-generating industry, Iran's petrochemical sector has experienced significant growth in the past decade. A major project which is banked in on is the West Ethylene Pipeline (WEP) and petrochemical plants located along this route.

Iran's Minister of Petroleum Bijan Zangeneh has said that once this project has become operational the country's third petrochemical hub would be created in western Iran. Assaluyeh and Mahshahr are currently two petrochemical hubs in Iran.

WEP is the most important investment project by Iran's petroleum industry for developing western areas of the country. Once the downstream sectors of these petrochemical plants have been launched final products could be exported to Iraq and Turkey, thanks to communications with these two countries and absence of any petrochemical plants in eastern Turkey and northern Iraq. Iran's petrochemical industry, which is heading towards growth and development in light of appropriate infrastructure, needs to complete its value chain. In coincidence with the development of upstream sector, particularly South Pars gas field development phases, the downstream sector of this industry must be taken into consideration as a national strategy.

In order to make arrangements for balanced development of petrochemical industry, we have to envisage downstream industries all over the country. Iran is currently building the world's largest ethylene pipeline in its western provinces for the purpose of developing petrochemical industry and generating more value-added from ethane. Iranian officials say output from petrochemical projects under construction in western Iran would reach $8 billion by next March. This year, petrochemical plants in western Iran are expected to supply a total of two million tonnes of products.

Senior Iranian petrochemical managers say WEP has potential to produce up to three million tonnes of products. So far, five compressors have been installed on this pipeline. In addition to money spent for buying compressors, IRR 12,000 billion has been spent in this project.

$4.7bn Investment

The investment made in petrochemical projects located along this pipeline totals $3.5 billion. The value of investment in projects under way reaches $1.2 billion. Therefore, a total of $4.7 billion will be invested in this project. Last year, most of ethane produced in the refineries of different phases of South Pars gas field was delivered to Kavian Petrochemical Plant to be converted to ethylene before injection into WEP. Experts say WEP is the most important project remaining from Iran's 4th Five-Year Economic Development Plan in petrochemical industry. WEP was approved by Iran's government in 2002 for the purpose of compensating for the backwardness of western provinces whose development index is lower than the state average index, creating jobs, engaging the private sector, stimulating production and upgrading technology in the oil sector. The project was initially supposed to become operational in 2007, but due to many changes, technical challenges, increased costs and insufficient budget allocation, it has had just 80% progress. Currently, 5,000 people are directly employed by petrochemical plants which are about to come online, and 3,000 more jobs are to be created. Downstream petrochemical sector is expected to drive this industry away from raw sales, as many plants would be fed by this pipeline in western Iran to supply petrochemicals.

Once operational, WEP would have the capacity of carrying 3.5 million tonnes of ethylene, 2.5 million tonnes of which would come from South Pars and the rest from Gachsaran. That would feed 12 petrochemical plants.

The WEP sections in Hamedan,

Dehdasht, Mamesani, Boroujen and Kazeroun have yet to start. Tabriz Petrochemical Plant has announced that it will build its own connection, like Ilam Petrochemical Plant.

This pipeline is 2,700 kilometers long and feeds petrochemical plants in Kermanshah, Andimeshk, Lorestan, Kurdestan, Miandoab and Mahabad.

The pipeline was officially inaugurated by President Hassan Rouhani and Minister of Petroleum Bijan Zangeneh last year. Along WEP are located Kavian Petrochemical Plant, Lorestan Petrochemical Plant, Mahabad Petrochemical Plant and Kermanshah Polymer Plant. The ethylene produced at Kavian Petrochemical Plant is supplied to Kermanshah Petrochemical Plant. WEP carries the Kavian plant's products to western areas in the country for the purpose of developing petrochemical industry.

Increased Exports to Western Neighbors

Iran's petrochemical industry, which has experienced growth over recent years, will enter a new phase once petrochemical plants in western Iran come online. Hamedan Petrochemical Plant is in its final stages of construction. Kurdestan Petrochemical Plant came online earlier this year and the first phase of Ilam Petrochemical Plant became operational several months ago. Undoubtedly, Iran's western area could turn into a reliable industrial hub in the near future once petrochemical industry has been developed and plans would get under way for building downstream industries. Then, in addition to meeting domestic demand, the western area of Iran could export petrochemicals overseas. Senior officials at Iran's National Petrochemical Company (NPC) says after the startup of Ilam, the focus is now upon three other petrochemical plants. The Ilam plant is close to coming on-stream. The startup of several other petrochemical plants in western Iran would eradicate deprivation from those areas and build infrastructure in underdeveloped parts of the country. Marzieh Shahdaei, former CEO of NPC, said recently that WEP would create new jobs in western Iran. Meantime, startup of several other petrochemical plants would create jobs in the provinces located near the pipeline. Given the conditions of WEP, the only body competent to decide about the status of this project in terms of remaining in the hands of state of being privatized is the government. Maintenance and safeguarding of this pipeline and accountability to consumers of ethylene is an issue of extreme significance and sensitivity. The Cabinet had assigned the project to the Ministry of Petroleum in 2002. At that time the project was limited to the provinces of Kohguiluyeh Boyer Ahmad, Kermanshah, West Azarbaijan and Kurdestan. But later on, other provinces like Khuzestan and Hamedan were included.

With the implementation of Article 44 of the Constitution, all petrochemical units located along the WEP route were hived off the private sector, while no decision has been made on the fate of the pipeline. The issue of status of WEP remains a complicated affair in Iran's petrochemical industry because maintaining a 2,865-km pipeline carrying ethylene is sensitive and costly.

Startup Operations May Be Privatized

Abdol-Hossein Bayat, deputy CEO of NPC for WEP affairs, recently said that the startup operations for the project were likely to be awarded to a private competent company without competitive bidding. "Privatizing the ownership of this pipeline is out of the question," he said. "Whereas Phase 1 of this pipeline, stretching from Kavian Petrochemical Plant located in Assaluyeh to Kermanshah Polymer Plant for a length of 1,060 kilometers was launched in 2012, and Phase 2 of this pipeline stretching from Kermanshah Polymer Plant to Mahabad Petrochemical Plant for an approximate length of 1,766 kilometers is also ready to come online, it is necessary that the startup operations of these two phases be assigned to a competent company," added Bayat. "With the completion of phases 15, 16, 17 and 18 of South Pars and the supply of ethane to Kavian and Morvarid petrochemical plants and other olefin units in Assaluyeh, the required ethylene for all petrochemical plants located on the WEP route will be supplied and these two phases of WEP could be brought close to full operation by raising the ethylene pressure to 90 Bar and launching all pressure booster compressors," Bayat said.

A scenario which has long been bandied about regarding the fate of WEP has been its assignment to Kavian Petrochemical Plant as a major producer of ethylene. However, conditions are such that the final producer and consumer of ethylene in this project is a single company.

Manufacturing some alcohol-based products, materials for agriculture, chemicals and other special products are among advantages of transmission of ethylene by this pipeline. That, along with other uses of ethylene in polymer production, has made ethylene production and transport prosperous in the market. That shows the very high value of this commodity. A major point in the Resilient Economy instructed by Supreme Leader Ayatollah Ali Khamenei with regard to the petroleum industry has been to avoid selling raw materials.

What could drive Iran away from oil-dependent and single-product economy towards a safe margin would be sustainable development, i.e. generating value-added, engaging in teamwork and making maximum benefit from whatever is already available. WEP can render significant services to the economy of western Iran. The pipeline and petrochemical plants located alongside it are able to process, produce and supply products of high value-added; therefore, they play an important role in upgrading Iran's economic standing, reducing jobless rate, creating jobs and generating revenues.

Renewables; Perspective and Challenges

Over recent decades, significant changes have transpired the energy sector. High energy costs, destructive impacts on the environment and one-time efficiency are among the most important issues which have driven many countries to shift from fossil energies to new sources of energy.

Shuaib Bahman

Using renewable energies like water, wind and solar heating are among important sectors which different countries focus upon. Therefore, it would be important to study the perspective and challenges of using renewable energies in different countries.

Renewable energy is derived from natural processes that are replenished constantly. In its various forms, it derives directly from the sun, or from heat generated deep within the earth. Included in the definition is electricity and heat generated from solar, wind, ocean, hydropower, biomass, geothermal resources, and biofuels and hydrogen derived from renewable resources. Renewable energy often provides energy in four important areas: electricity generation, air and water heating/cooling, transportation, and rural (off-grid) energy services.

The mainstream technologies used for extracting renewable energies are as follows:

Wind Power:

Airflows can be used to run wind turbines. Globally, the long-term technical potential of wind energy is believed to be five times total current global energy production, or 40 times current electricity demand, assuming all practical barriers needed were overcome.

Hydropower: It is used mainly in hydroelectricity.

Solar Energy:

Solar energy, radiant light and heat from the sun, is harnessed using a range of ever-evolving technologies. In 2011, the International Energy Agency said that the development of affordable, inexhaustible and clean solar energy technologies will have huge longer-term benefits. In 2016, after another year of rapid growth, solar generated 1.3% of global power.

Geothermal Energy:

High Temperature Geothermal energy is from thermal energy generated and stored in the Earth. Thermal energy is the energy that determines the temperature of matter. Earth's geothermal energy originates from the original formation of the planet and from radioactive decay of minerals.

Bioenergy:

Biomass is biological material derived from living, or recently living organisms. It most often refers to plants or plant-derived materials which are specifically called lignocellulosic biomass. As an energy source, biomass can either be used directly via combustion to produce heat, or indirectly after converting it to various forms of biofuel. Conversion of biomass to biofuel can be achieved by different methods which are broadly classified into: thermal, chemical, and biochemical methods. Wood remains the largest biomass energy source today; examples include forest residues – such as dead trees, branches and tree stumps –, yard clippings, wood chips and even municipal solid waste.

Atomic Energy:

Atomic energy is one of the most well-known forms of renewable energy, whose technology is monopolized by a few countries. Nuclear energy power plants are able to generate electricity on a large scale and they are considered as a source of clean energy. Nonetheless, there are many challenges with the use of this energy because acquiring this technology may lead to the development of atomic bombs.

Energy Storage:

Energy storage is a collection of methods used to store electrical energy on an electrical power grid, or off it. Electrical energy is stored during times when production (especially from intermittent power plants such as renewable electricity sources such as wind power, tidal power, solar power) exceeds consumption, and returned to the grid when production falls below consumption.

Perspective and Challenges

In recent years, significant investment has been made in renewable energies. For instance, this investment has increased from 182 points in 2008 to 241 points in 2016. Moreover, the number of countries using renewable energies increased from 79 in

2008 to 176 in 2016.

The important point is that even oil producing countries in the Middle East are trying to keep up with the growing use of renewable energies in the world. These countries often have several main reasons to develop technologies and infrastructure for using renewable energies.

First and foremost, renewable energies including solar energy are so low-cost that oil and gas producing countries have been prompted to brace for renewable energies to meet their domestic demand in part. Such inclination for renewable energies is seen specifically in the electricity sector.

Second, the oil and gas producing countries' switch to renewable energies would largely contribute to the diversification of their economies.

Third, using renewable energies could be instrumental in reducing oil and gas extraction costs. As the level of energy reserves in the world declines, recovery and production of oil and gas cost higher in many areas in the world.

This increase has been such that shale oil and gas recovery or arctic and deepwater hydrocarbon extraction, which used to be assessed as costly, is now on the agenda of many producers. Under such circumstances, using renewable energies in oil and gas extraction and production could to a large extent slash production costs.

Fourth, the use of renewable energies will help oil and gas producing countries to save more reserves for exports.

In fact, since most oil producing and exporting countries highly depend on oil revenues, domestic use of renewable energies would help largely increase the level of exports. For instance, estimates show that Saudi Arabia's use of electricity and sweet water is so high that this country has to directly burn crude to meet its domestic and water demand.

Should it fail to limit demand or increase its investment in alternative sources of energy domestic needs would attract the bulk of its oil and gas production over the coming 10 to 20 years.

That would leave Saudi Arabia with too little oil for exports and lower petrodollars would give rise to social, economic and political challenges. In that case, this country will have to invest in renewable energies in order to curb its domestic oil consumption to some extent.

Saudi Arabia, which is currently the largest oil exporter in the world, plans to build some 45.3GW of solar and wind power plants by 2020. By 2023, this country would be able to produce some 10% of its power generation capacity from renewable energies.

Qatar, which is the world's largest exporter of liquefied natural gas (LNG), intends to produce 8.1GW of its electricity from solar energy, and increase it to 10GW by 2030.

Special Technologies a Must

Generally speaking, since non-renewable energies are close to exhaustion renewable energies have come to the limelight in recent years and they have seen significant growth. However, fossil energies will maintain their position as the most important source of energy. In fact, such energies as oil and gas will continue to remain important sources in the world.

Although the use of renewable energies would represent significant opportunities for impoverished and underdeveloped nations, these countries will not be able to use this type of energy due to insufficient funds and lack of access to advanced technology.

Furthermore, among industrially developed countries there is no big inclination for using renewable energies because this issue would require fundamental changes in industrial infrastructure and technologies used by these countries, which would be very costly and may face resistance.

On the other hand, although every country enjoys wind, solar radiation and geothermal heat within its own territory generation of this country requires special equipment in which special metals and minerals are used. Extracting these rare minerals and metals also poses a challenge.

Although there is still a long distance from the generalization of renewable energies the growing pace of scientific and technological advancements has cleared the way for an increasing use of these energies. Therefore, one may hope that the use of these renewable energies would face significant welcome in the future, particularly because the use of these energies would be meant for safeguarding the environment and reducing costs inflicted by the production of fossil fuels. Therefore, renewable energies can provide a basis for the sustainable development of countries in the long term.

Argentina Seismic Coverage Extended

Spectrum, in partnership with BGP Marine, has started a multi-client 2D seismic survey covering the Austral and Malvinas basins offshore southern Argentina. Through the authorization of the Ministry of Energy and Minerals, the expected survey size is about 14,500 km (9,010 mi) but may vary based on input from participating clients. Data is being acquired with a 12,000-m (39,370-ft) streamer with continuous recording to enable extended recording lengths and high fold data to enable full interpretation from Moho to water bottom. The data will be processed with PSTM, PSDM, and Broadband products with first deliveries expected in early 2Q 2018. The new data will be used to assist the Ministry in placement and design of parcels for the future license rounds offshore Argentina.

Tunisia Allows Offshore Drilling

Tunisia's Director General of Hydrocarbons (DGH) has accepted an application by Alpine Oil and Gas (AOG) to vary work commitments on the offshore Kerkouane license. AOG, a subsidiary of ADX Energy, will now drill the DouggaSud well and conduct productivity testing of the Dougga gas/condensate reservoirs. The previous requirement had been for an exploration well and the acquisition of 500 sq km (193 sq mi) of 3D seismic.

Norway Maria Field Close to Startup

The Norwegian Petroleum Directorate (NPD) has authorized Wintershall to start-up the Maria field in the Norwegian Sea, around 10 months ahead of the original date targeted in the field development plan. Production is now expected to begin in December. The NPD says good project execution and efficient drilling have helped Wintershall beat its schedule. The development has also been cheaper than expected at just over NOK12 billion ($1.46 billion), against the originally estimated NOK15.7 billion ($1.92 billion).

Oil Find in Vietnam

Murphy Oil has discovered oil with the CM-1X well in the Nam Con Son basin offshore southern Vietnam. The company will continue to assess the commercial potential of the block, which includes the successful CT-1X discovery well drilled in 2Q. In Vietnam's offshore Cuu Long basin, Murphy is working with its partners on the block 15-1/05 LDV discovery for a declaration of commerciality in 2018, and also plans a nearby exploration well, while continuing to pursue entry into the adjacent 15-2/17 block.

Studies Continue on Australia Offshore Projects

AWE says that field development studies continue for the AndeAndeLumut (AAL) oil field project in the northwest Natuna Sea off Indonesia. The present focus is on optimizing on drilling and completions for the K and G sands resources, while minor modifications are under review for the FPSO processing infrastructure to maximize comingled production from the two reservoirs. Indonesia's government is said to be keen to advance the project and has advised the partners that it intends to exercise its right to assign 10% of their interest to a local Indonesian entity in 2018.

Norway

Tunisia

Vietnam

Argentina

Australia

VIEW

VIEW

VIEW

Distillate Fuel Oil Market Set to Tighten

U.S. refineries are struggling to meet booming demand for distillate fuel oil at home and in export markets which will leave the distillate market very tight in 2018. Even if the northern hemisphere winter is only averagely cold, the distillate market looks set to enter 2018 with lower than average stocks and fast-growing demand, which should keep prices and refining margins firm. The gross refining margin for turning Brent into U.S. heating oil has climbed to almost $19 per barrel from a recent low of less than $11 in May, despite record U.S. refinery production of distillate. Refiners, therefore have a strong commercial incentive to maximize distillate output, which should ensure crude intake remains high, and spread tightness into the crude market. U.S. refiners processed a seasonal record 16.6 million barrels per day (bpd) of crude last week, which was 600,000 bpd higher than at the same point in 2016 and 1.8 million bpd above the 10-year average. And they produced a seasonal record 5.2 million bpd of distillate fuel oil, which was 300,000 bpd above 2016 and 600,000 bpd above the decade average. But it was not enough to prevent distillate stocks falling by another 800,000 barrels to less than 125 million barrels, according to the U.S. Energy Information Administration. Distillate stocks have shrunk by 38 million barrels since the start of the year compared with a seasonal decline of less than 10 million in 2016 and a ten-year average of just 5 million. Stocks are now 24 million barrels below the prior-year level, and 9 million barrels below the decade average, at levels that have not been seen since 2012-2014. The distillate market was heavily oversupplied at the start of 2017 but has become progressively undersupplied in the course of the year.

NEWS

India State Oil Firms Betting on Natural Gas

India's state oil refiners are planning an aggressive push into natural gas in coming years to meet Prime Minister Narendra Modi's goal of making the fuel a bigger part of the country's energy mix.State-owned oil companies - Indian Oil, Bharat Petroleum and Hindustan Petroleum - are planning to raise gas contributions to between 5 and 15 percent of their incomes over the next few years, up from nearly none now, company executives said.This in line with a government target to raise the natural gas portion of India's primary energy mix to 15 percent by 2030, up from 6.5 percent now, to help meet climate targets and rein in rampant pollution.The increase would come mostly at the expense of coal, which is dirtier than gas and is India's most-used energy source. Liquefied natural gas (LNG) imports will cover the greater part of the growth, although the government also hopes to recover untapped domestic reserves off its east coast.

NEWS

Statoil to Step Up Exploration off Norway

Norway's Statoil will ramp up its search for oil and gas deposits on the Norwegian continental shelf next year, the company said.Oil companies are stepping up efforts to find more oil and gas offshore after cutting exploration budgets following the oil price drop since 2014, meaning more work for owners of drilling rigs, such as Transocean or Seadrill. Majority-state owned Statoil is emerging from the downturn as one of the most active offshore explorers. "We are looking at drilling 25 to 30 wells in Norway in 2018. That's an early ambition we have and it depends on some approvals," Statoil's spokesman said.

Argentina to Extend Gas Subsidies to Austral Basin

Argentina will extend subsidies for unconventional natural gas production to the Austral basin in the south of the country, the Energy Ministry said in a resolution published in the official gazette. A program establishing an incentive price of $7.50 per million British thermal units (mBtu) of new gas output expires at the end of the year. The government previously planned to extend those subsidies only for unconventional production from the Neuquen Basin, home to the Vaca Muerta shale play."After dialogue promoted by the national government between unions, companies, and the respective provincial governments... we considered it adequate to extend the stimulus policy to the Austral basin," the Ministry said in the resolution, adding that the parties agreed to changes in labor agreements.Attracting investment to Argentina's promising shale oil and gas reserves is a priority for business-friendly President Mauricio Macri as he tries to close the South American country's costly energy deficit, but companies say high labor and logistics costs remain an obstacle.The change comes after state-run oil company YPF SA told investors last week it was disappointed by the removal of the subsidies in areas outside the Neuquen basin and would likely re-allocate investment toward crude oil. The minimum price for the subsidies will gradually decrease to reach $6 per mBtu in 2021. The payments represent a substantial cost for Argentina's government as it tries to reduce its fiscal deficit, and it has fallen as much as 10 months behind in delivering the subsidies to companies. Data from the Argentine Oil and Gas Institute show that the Austral basin, located mainly in Tierra del Fuego province, produces around 24 percent of Argentina's natural gas, making it the second-biggest producing basin behind Neuquen, which produces around 59 percent.

NEWS

Venezuela Raises Crude Sales to US

Venezuela's crude exports to the United States recovered in October from the previous month but were still the third lowest in 2017, according to Thomson Reuters trade flows data.The South American country sent 541,130 barrels per day (bpd) to customers in the United States in October, 11 percent more than September, as a result of greater volumes of diluted crude and upgraded oil from the country's Orinoco Belt region.

But the October number was 10 percent lower than the 601,065 bpd exported in the same month of 2016, according to the data.

Venezuela's overall crude output declined in October to its lowest since 1989, according to numbers reported by the country to OPEC. Sanctions imposed by the United States on Venezuela and its state-run company PDVSA have contributed to weaker exports this year.

NEWS

Spain Gas Natural Sells Colombian Distribution Unit

Spain's Gas Natural said it had agreed to sell the 59.1 percent stake it owns in its Colombian retail distribution unit to infrastructures fund Brookfield Infrastructure for 482 million euros ($568 million. Brookfield will launch a takeover offer for the remaining 48.9 percent of the firm at the same price, valuing the company at 1 billion euros, including debt, or 7.3 times its earnings before interest, tax, depreciation and amortization. Gas Natural will book a one-off capital gain of 350 million euros on the sale, enabling it to reach its year-end target of a net profit of between 1.3 billion and 1.4 billion euros, it said in a notice to Spain's stock market regulator.

Croatia Eyes Solar Power

Thanks to its exposure to the Mediterranean sun and the pristine Adriatic Sea, Croatia secures almost 20 percent of its gross domestic product from tourism - but in stark contrast, it has practically neglected electricity production from solar power. The government is drafting a new strategy aimed at reducing energy imports which is likely to be completed next year. "I set myself a target to promote solar power in that context as much as possible," an official involved in the work, who asked not to be identified, told Reuters. According to the International Renewable Energy Agency, Croatia, which imports nearly 40 percent of its energy needs, could develop 3,200 megawatts (MW) of solar power by 2030, but the lack of a supportive legal framework has deterred investors. Croatia has installed power of 4,500 MW, mostly from coal and hydroelectricity. Renewable power accounts for 28 percent of production. It has only 52 MW of installed power in solar panels, some six times less than smaller neighbor Slovenia. There are no new preferential contracts with investors due to the lack of a legal framework to implement the 2016 renewable energy law. In addition, last month the government had to raise electricity prices due to high subsidies for renewables. Stjepan Talan from the Solvis company, the only producer of solar panels in Croatia, started his business in 2008 planning to sell around half of its products at home and export the rest. "Now we export virtually everything we produce to countries like Germany, France, the Netherlands, Italy, Austria ... as there is in fact no developing local market," he said. Greenpeace has started a campaign to raise awareness that Croatia can make a significant leap towards energy independence by investing in green electricity from solar panels. "Croatia has fewer solar panels than the Slovenian city of Maribor and 50 times less installed capacity than Greece, for example. It's a shame," said Zoran Tomic of Greenpeace Croatia. A decade ago Croatia introduced feed-in tariffs for renewable electricity, but set low quotas for photovoltaic panels due to the technology's relatively high cost at the time.

NEWS

Shell's Oil Trading Chief Quits

The world's most powerful crude oil trader, Royal Dutch Shell's head of oil trading Mike Muller, has stepped down after 29 years with the company, an internal announcement reviewed by Reuters showed. Muller, whose desk trades more oil than any rival, has relinquished his role with immediate effect and will leave at the end of the year "to pursue interests outside of Shell". His departure follows the appointment of Andrew Smith as Shell's new head of supply and trading earlier this year. Mark Quartermain, currently head of refined products trading, has been appointed Vice President Trading and Supply Crude with effect from Dec. 1. Under Muller, a Cambridge university graduate, Shell expanded trading aggressively, handling as much as 8 million barrels per day and often taking large position in core markets such as the North Sea, home to benchmark crude Brent. Smith recently said trading was Shell's "nerve centre" as it shifts millions of barrels of crude and refined products from fields to its refineries and consumers. Though Shell does not disclose separately its revenue from supply trading, they often help offset declines in crude oil production when oil prices slump, as has been the case over the past three years, by making profits from price volatility and supply disruptions.

Pakistan LNG Import Project Consortium Folds

A consortium behind a liquefied natural gas (LNG) import project in Pakistan, including oil giant Exxon Mobil, France's Total and Qatar Petroleum, has been dissolved, shipping company Hoegh LNG said.

Hoegh LNG was due to supply the project's ship-based import terminal, a floating storage and regasification unit (FSRU), where LNG brought in by tanker is converted back to gas to feed into Pakistan's grid.

The other six members of the consortium were Japan's Mitsubishi and Turkish developer Global Energy Infrastructure (GEI).

"The consortium has spent considerable time and resources on finding [the project's] final form and structure. However, by mid-November it has been concluded that no agreement with GEI could be found and the consortium has consequently been dissolved," Hoegh LNG said in a results statement.

Last month Reuters reported that Exxon Mobil pulled out of the project owing to disagreements with GEI and that Total and Mitsubishi could also quit and join a rival scheme.

The project was set to be Pakistan's third and biggest by import capacity, starting in late 2018 or early 2019.

Pakistan plans to add its second LNG import terminal by the end of this year, but private companies have proposed building six more, largely around Port Qasim.Hoegh LNG did not elaborate on the nature of the disagreement with GEI but industry sources with knowledge of the matter said that part of it related to project costs. "Due to the withdrawal of the LNG sellers from the infrastructure consortium, and the delays to the original start-up date for the GEI project, Hoegh LNG is evaluating its options with respect to the FSRU contract with GEI," it said. The company said it is also pursuing alternative opportunities in Pakistan as an FSRU provider. A highly developed pipeline grid, extensive industrial demand and the biggest natural gas-powered vehicle fleet in Asia behind China and Iran make Pakistan an easy fit for LNG. Official estimates show that imports could jump fivefold to 30 million tonnes per annum (mtpa) by 2022.

NEWS

Offshore Firms Dominate N America Energy

Offshore oil drilling and service companies, hurt by the energy industry's shift to lower-cost shale and away from deepwater projects, are dominating the year's energy bankruptcies in North America, according to law firm Haynes and Boone. There were fewer oilfield service companies seeking protection this year than last but those that did, have had larger debts. Through October, 44 oilfield services companies filed for bankruptcy in the United States and Canada owing creditors $24.8 billion, compared with 72 companies and $13.48 billion for all of 2016. Just two offshore companies accounted for 45 percent of the total owed creditors this year, the law firm's figures show. Deepwater offshore services firm Seadrill Ltd's September filing was the largest bankruptcy this year with $8 billion in debts, while Ocean Rig UDW Inc filed owing $3.6 billion. On Nov. 12, another offshore driller, Pacific Drilling, filed for bankruptcy protection with $3.2 billion owed to creditors. That filing was not included in the survey. Oil prices have rebounded this year with the U.S. benchmark up 22 percent in the last 52 weeks to about $55 a barrel. That gain has stirred onshore drilling and production but has not been enough to boost the more costly offshore and deepwater drilling.

Global Oil and Asian Product Market, November

Crude prices on average rose around 9 percent. Crude oil futures and physicals traded higher, as market participants looked ahead to OPEC's next meeting at the end of November for news on a probable extension of production cuts. While many market observers regard the potential extension of the OPEC production cuts as the next key event which could support oil prices, others argue that it will take more than OPEC cuts to ensure prices remain supported. Some market players believe that the need to further extend the agreement shows that OPEC strategy is not working and that the production surpluses are only slowly being eliminated from the market despite very dynamic demand.

Another factor which continues to loom over market is US ever-expanding production and exports, and the likelihood that higher oil prices will encourage US shale producers to increase their output. IEA stated that US will account for 80% of the global increase in oil production over the next 10 years. Consequently, OPEC's strategy of artificially tightening the market is hardly likely to work in the long term. Prospects of rising shale output also added bearish pressure with EIA's latest Drilling Productivity Report stating that US shale oil production may increase 80,000 b/d to a record 6.17 million b/d in December, Commerzbank analysts noted.

OPEC and its 10 non-OPEC partners will meet November 30 in Vienna to discuss the future of their 1.8 million b/d production cut agreement, which is set to expire in March. The major OPEC members are pushing for a nine-month extension of the cuts through the end of 2018. But other members of the coalition, notably leading non-OPEC participant Russia, remain less convinced of the need to announce such an extension at the November 30 meeting.

Asian Product Markets

Market fundamentals were healthy among the Asian products.

Light Distillates (naphtha, gasoline)

Asian naphtha supply remained tight amid strong demand, keeping the naphtha crack on its highest level during the year 2017 and cracking margin was high enough for petrochemical companies to run their steam crackers at full capacity. Industry sources said that demand for naphtha in Asia was strong amid high operating rates of steam crackers. The strength of the LPG swap versus naphtha faded further, after the spread between the December Argus Far East Index propane swap and Mean of Platts Japan naphtha swap sank. LPG is the alternative feedstock for petrochemical production, and the recent strength in LPG had seen petrochemical makers leaning more towards naphtha. North Asian petrochemical makers were also running their crackers at high capacity ahead of the festive season next month. Naphtha stocks were typically drawn down during the fourth quarter, and that Western arbitrage barrels streaming into East Asia were helping to ease the tightness this year. The Asian gasoline market weakened slightly after peak summer season. Summer season finished and demand waned. Furthermore, US gasoline stocks rose adding more pressure to the market. Asian gasoline market was silent after summer and ahead of new year holiday.

Middle Distillates (gasoil, jet fuel)The Asian gasoil market remained steady compared to October. The suppliers were struggling to find alternative homes for surplus barrels. With unviable arbitrage economics to divert barrels from Asia to the west of Suez, cargoes were heard heading to the main trading hub of Singapore, amplifying supply pressures.

Fuel Oil

Asian fuel oil market was mute during November with less activities on both bunkering and power plant demands. Fuel oil stocks in Fujairah fell during November not indicating a shortage, but as a function of lower bunker demand at the port, combined with the backwarded market structure, that does not provide any incentive to carry excess inventory. Looking ahead, the value of December Singapore fuel oil versus Rotterdam Barges spread traded down, a drop of around $3.50/mt compared to last month, reducing the attractiveness of arbitrage flows from Europe to Singapore in the coming month, supporting Asian fuel oil fundamental.

> The overhaul expenses of second-hand machinery, categorized within the framework of capital expenditure (CAPEX), is of high significance

Distribution
Iran Petroleum

> Currently, more than 1.2 million barrels of crude oil plus 1 million barrels of petroleum products are being distributed

Iran Crude, Oil Products Annual Distribution Capacity at 123bn

Iran is transmitting around 330 million liters a day of crude oil and petroleum products through 14,000 kilometers of pipeline. Transmitting such a big volume of petroleum products would need around 17,000 tank trucks. If we assume each tanker 22 meters long, we will be facing more than 374 kilometers of trucks.

The first oil pipeline in Iran was built in 1910 with a capacity of 120,000 tons a year, immediately after Abadan oil refinery was built. This pipeline connected oil storage facilities in Masjid Soleyman to the Abadan refinery. The pumps installed at this pipeline were steam-powered, which could handle 40,000 b/d. Today Iran can pump 320 million liters a day of petroleum products.

More than a century after the first pipeline was built in Iran, the country's oil distribution industry is handling approximately 123 billion liters of crude oil and petroleum products per year across the country. That is done through 14,000 kilometers of pipeline, 186 oil distribution centers, 215 telecom stations and pressure compression installations.

As an industry faithful to refining and exports, the oil distribution industry was launched in coincidence with the startup of the first oil refinery in Iran, and has since not ceased to grow.

However, the installations and equipment for oil distribution in Iran are now in desperate need of renovation and replacement. The overhaul expenses of second-hand machinery, categorized within the framework of capital expenditure (CAPEX), is of high significance for production, refining, distribution, petrochemical and other such activities. Most often, these operations are halted due to overhaul and maintenance, inflicting heavy expenses on companies and Ministry of Petroleum. In the last Iranian calendar year to March 2017, the overhaul of physical assets of petroleum industry (including equipment and installations in the upstream and downstream sectors) were estimated at more than $400 billion.

IOPTC Manages Oil Transmission

The Iranian Oil Pipelines and Telecommunication Company (IOPTC), which is a subsidiary of the National Iranian Oil Refining and Distribution Company (NIORDC), has been tasked with the administration of oil pipelines all over Iran. The main task assigned to IOPTC is to feed refineries with crude oil and distribute petroleum products across the country.

The activities of this sector of petroleum industry are classified and defined based on specific fields, including daily maintenance, preventive and predictive overhaul and technical inspection. Of total investment in development projects, 65% has been earmarked for the supply of commodities and equipment. Therefore, administration of this sector could, to a large extent, contribute to reducing project costs.

Causing dynamism in relevant industries (manufacturing parts and taking measures to manufacture strategic commodities and equipment) will yield such effective results as the materialization of resilient economy, economic, industrial, and technological development, job creation, and development of a national model in the country. One of significant but largely marginalized sectors in Iran's petroleum industry is the system of transmission of energy carriers to points of consumption, production and refining.

Tens of thousands of kilometers of pipeline has already been constructed across Iran. Apart from gas transmission pipelines and pipelines carrying feedstock to petrochemical plants and power plants, some important pipelines pertain to crude oil and petroleum products across the country, which are tasked with providing feedstock to refineries and supplying fuel to the transportation sector. A total of 186 centers of oil transmission centers, installations and pressure compression stations are running round the clock to transmit crude oil to eight refineries across Iran. IOPTC receives petroleum products (like gasoline, kerosene, gasoil, fuel oil and jet fuel) from refineries and import points ,and transmits them to storage facilities connected to pipelines, some power plants, airports and some petrochemical companies.

Generally speaking, IOPTC is handling a network with a capacity of transmitting over 123 billion liters of oil products a year through 14,000 kilometers of pipeline.

Eight of Iran's 10 refineries (Bandar Abbas and Lavan excluded) are connected to national trunkline for receiving crude oil. Moreover, eight refineries (Lavan and Shiraz excluded) send their products through IOPTC pipelines across the country.

IOPTC runs 4,500 kilometers of pipeline for carrying crude oil and 9,500 kilometers for carrying petroleum products, 186 oil distribution centers, as well as 293 telecom stations.

Supply of 1.2bn Barrels Crude Oil

Currently, more than 1.2 million barrels of crude oil plus 1 million barrels of petroleum products are being distributed on a daily basis across Iran. That is being done through real-time communications between different units of production, refining and consumption involved.

Since the transmission of cargoes with fixed volume may be carried out in several phases, this figure is really 1.6 mb/d.

In total, distribution of crude oil and petroleum products reaches 330 million liters a day in Iran. That is done by 12 local centers all across the country.

Currently, 66% of total crude oil and petroleum products distribution in the country is being handled by pipelines. In addition to environmental and operational advantages, using pipeline would cost one-fifth

> The concept of domestic manufacturing partly relies on Iranian entities lying outside the petroleum industry and partly on the potentialities and capabilities of companies affiliated with the Ministry of Petroleum

of tanker transfer for each liter of crude oil or petroleum products. Furthermore, IOPTC is tasked with providing services to the petroleum industry's telecommunications network which is as old as the petroleum industry in both upstream and downstream sectors. Telecommunication is among important development infrastructure in every economic and industrial system. IOPTC is serving as the telecom arm of the fourth largest producer of oil in the world. Offering the most efficacious telecom services and enjoying a high safety coefficient, IOPTC establishes sustainable and safe industrial communications, audiovisual and computer communications, pipeline network as well as handling all communications between the NIORDC and its subsidiaries, between the Ministry of Petroleum and the NIORDC, refineries, distribution centers, fueling centers, oil transmission centers, and some petroleum industry companies.

Focus on Domestic Manufacturing

A major cause of concern for petroleum industry officials in Iran has been the issue of domestic manufacturing and reliance on Iranian manufacturers. The concept of domestic manufacturing partly relies on Iranian entities lying outside the petroleum industry and partly on the potentialities and capabilities of companies affiliated with the Ministry of Petroleum.

Iran's Ministry of Petroleum has so far carried out many activities in this regard, including establishment of self-sufficiency circles, formation of specialized committees supporting domestic manufacturing, and creation of domestic manufacturing research units. Each has also far rendered valuable services.

Over recent years, two specific objectives have been followed up on. First is policymaking for the procurement and domestic manufacturing of commodities and equipment needed by the petroleum industry in all sectors in order to meet the needs of the Ministry of Petroleum's subsidiaries and offshoots, for the purpose of supporting domestic manufacturing and industrial self-reliance. Second is more transparency in the procedures of commodity supply and domestic manufacturing and policymaking for expediting the supply and enhancing the quality of commodities and equipment. To that effect, non-inflationary exit from recession and supporting domestic manufacturing, short-listing ten widely consumed items that could be produced in the country and making arrangements for their domestic manufacturing have been carried out at the Ministry of Petroleum.

Evidently, one of the most important necessities of petroleum industry in recent decades has been the development of domestic manufacturing of strategic equipment for the petroleum industry and reducing reliance on foreign companies in light of political pressures and restrictions. This concern was shared by all administrations; however, the 11th administration was chiefly concerned with this issue and it took major steps to that end. The capacity of manufacturing of important basic equipment needed in the oil and gas industry has experienced significant growth in recent years. Such domestic achievement has been the outcome of a firm move by both consumers and producers of equipment. Widely consumed commodities are identified under "10 Groups of Commodities". Today, the offshoots of Iran's Ministry of Petroleum, particularly IOPTC, have had good experience of domestic manufacturing which was incredible some 10 or 15 years ago.

This newly traced path gives rise to fresh hope for domestic development. A long and tough road still lies ahead.

> Today, the offshoots of Iran's Ministry of Petroleum, particularly IOPTC, have had good experience of domestic manufacturing which was incredible some 10 or 15 years ago

Self-Sufficiency in Oil Transfer Equipment Reparation

Some 20 years ago, Iranian manufacturing companies could not produce most of equipment used in the petroleum industry and this equipment was mostly purchased from foreign companies. But today Iranian companies have reached an acceptable position in terms of manufacturing commodities which the petroleum industry needs. The bulk of equipment needed by the petroleum industry, particularly in downstream sector, is manufactured domestically. The time has come now to shift these potentialities towards state-of-the-art technologies. Under the aegis of policies adopted by the Ministry of Petroleum, the largest domestic market for petroleum industry commodities is taking shape.

For instance, in repairing turbines, IOPTC is becoming a leading company. It has since 1994 focused its attention on overhaul and repair. This trend has so far continued incessantly and currently 15 cases of turbine reparation, valued at around $13 million, have been ordered to domestic factories. This achievement is the result of combination the specialty of this company and its support. For instance, IOPTC has backed Turbine Machine Middle East Co. to become a manufacturer of solar turbines, while more than 15 solar turbines have been renovated. An agreement has been signed with IOPTC for the repair of eight solar turbines. The items used in the overhaul of turbines have been upgraded, as well.

Manufacturing valves, trans-rectifiers and chargers, steel half-pipes, patches and joints, mechanical seals, air hammers, oil transmission pumps, electronic cards and equipment, anti-corrosion materials, turbine washing, turbine fluid, firefighting materials, chemical lubricants, primers, blades, discs, control cards, fuel pumps, drives, electro-hydraulic valves, oil filter and gas turbine air are among achievements of the domestic manufacturing drive.

History of CNG Use in Iran

The use of compressed natural gas (CNG) in Iran dates from 1973, when the first prototype of Iranian gas-fueled vehicle was developed at the Auto Mechanical Workshop of the Technical Faculty of the University of Tehran. Four years later, within the framework of a project to clean air in Shiraz in southern Iran, the tentative conversion of car engines into LPG-fuelled models was carried out and 1,200 cars had their systems converted to LPG-fueled engine there.

The continuation of the project to build CNG stations was halted for one decade due to imposed war in 1980, which lasted for eight years. However, Iranian energy officials revived the project in 1987.

In 2000, the Iranian Ministry of Petroleum focused on converting gasoline and gasoil-fueled to gas-fueled vehicles and building CNG stations. In 2002, three CNG stations with a capacity of 80 cubic meters per hour became operational in Tehran before operations started one year later for the construction of more than 300 CNG stations in 40 cities across Iran. In addition to the Ministry of Petroleum which had already been required by the Iranian government to design, build and develop CNG stations and promote the culture of driving gas-fueled vehicles, car manufacturers were tasked with supplying more than 20% of their vehicles equipped with gas engines or dual-fuel engines in exchange for receiving aid from the Ministry of Petroleum. That triggered a significant increase in the use of gas vehicles in the country.

Iran Ranks 2nd in Gas Vehicles

Iran follows China in terms of natural gas vehicles in the world. After Iran come Pakistan, Argentina, India, Brazil and Italy in the ranking. Currently, CNG stations are growing rapidly in Iran. The rate of acceleration has been such that since the start of planning, indigenization, designing, development and promoting culture for using CNG in the transportation system, a total of 2,400 CNG stations were equipped and launched in Iran by last September. This figure is planned to increase to 2,450 by next March.

Currently, around 25 million CNG-fueled cars are running across the world, more than 4 million of which are in Iran with a daily consumption of 20 mcm of CNG.

CNG Projects' Objectives

- Establishment of CNG stations based on plans adopted by the Iranian government;
- Clearing the way for the involvement of the private sector in the establishment and operation of CNG stations;
- Decentralization in the CNG national plan and delegation of responsibilities to the private sector;
- Developing appropriate approaches for operating and installing medium-sized CNG stations for state-run units and public compounds;
- Paving the ground for training manpower specializing in installation and maintenance of CNG stations in partnership with the private sector; and
- Supporting domestic manufacturers for the purpose of indigenization of CNG industry in Iran.

Arrangements Made in CNG Sector

- Establishment, equipping and launch of 2,400 CNG stations by September 2017;
- Supporting plan to indigenize the manufacturing of CNG compressors and auxiliary equipment by domestic supplier companies;
- Supporting maintenance of CNG stations' equipment by qualified private sector;
- Drawing up standards for CNG industry in cooperation with Iran National Standards Organization;
- Manufacturing and converting more than 3 million cars to run on dual fuel by January 2013;
- Providing necessary infrastructure for producing CNG kits by domestic companies;
- Training specialists to carry out after-sales services, conduct reparation and troubleshooting in dual-fuel vehicles, conduct periodical checks and subsequently create jobs in this sector;
- Activation of more than 200 sites to convert the fuel system of vehicles and provide after-sales services across the country in compliance with national standards;
- Supporting the design and manufacturing of gas-fueled national engine based on the state-of-the-art technologies at Iran Khodro Co. as the largest auto manufacturer in the Middle East, and
- Supporting establishment and launch of factories producing CNG storage tanks in the country.

CNG Consumption at 20mcm/d

Currently, over 20 mcm/d of CNG is distributed to more than 4 million cars across Iran, constituting a significant share in the fuel mix of vehicles in the transportation sector. Application of domestically-developed technology to produce equipment for gas-fueled engines and training of maintenance experts to look after natural gas stations are among successful projects carried out by the National Iranian Oil Products Distribution Company (NIOPDC). Having identified relative advantages of optimal use of sources of energy, the company is determined to pick up speed on its path towards development.

NIOPDC CNG Project

Management

The NIOPDC's Directorate of CNG Stations Establishment and Development Project is the body administering establishment, development and operation of CNG stations, as well as converting gasoline cars into natural gas vehicles.

This Directorate works in coordination with other Directorates and provincial zones of NIOPDC within the following framework:

Steering, establishing and developing CNG stations across the country; and

Offering proposals and specialized reports to upgrade industry in the country

Iran, Top CNG User

Over the past decade, a variety of factors have been instrumental in the CNG consumption and development in Iran, the most significant of which could be classified as follows, in light of relative advantages of CNG production and consumption:

- Studying implementation of plan after identifying relative advantages of CNG production and consumption;
- Macro planning and management at the level of Iranian government;
- Planning and implementing project in consultation with veteran experts;
- Paying for design, building and equipping CNG stations based on need analysis and location by the Ministry of Petroleum;
- Engaging the private sector in gas station handling by free supply of equipment to qualified applicants and payment of lucrative commission to station owners;
- Paying subsidy to car owners willing to convert their vehicles into gas-fueled ones;
- Paying subsidy to car manufacturing plants to build a plant to produce gas-fueled and change manufacturing infrastructure;
- Setting appropriate price for CNG in order to create relative economic advantage for consumers in comparison with liquid fuels and encouraging people to use CNG in favor of clean air; and
- Ministry of Petroleum supporting for factories supplying equipment for gas-fueled kit and compressor manufacturing chain.

36 mcm CNG Distribution Capacity

Iran is currently able to distribute more than 36 mcm/d of CNG through its 2,400 CNG stations to more than 4 million gas vehicles owing to the capacity of distributing 2.7 mcm per hour of CNG and the ability of each compressor to operate 14 hours a day.

Studies show that last calendar year to March, compressors were operating on average 8 hours a day in CNG stations, letting the distribution of 20 mcm/d of CNG across the country. That has saved Iran 6,800 million liters of gasoline, let alone its contribution to cleaner air and environment, and creation of job in the cycle of production.

Why CNG?

According to official data, the number of vehicles in the country stood at over 7.9 million by March 2006, which is forecast to exceed 18 million by March 2018. Meantime, air pollution had degenerated into a big challenge in megacities. Although cars manufactured by old technologies are being phased out, cars emitting high levels of pollution continue to travel across the country causing daily growing economic and environmental problems. Under such circumstances, it is imperative to make efforts to identify and supply inexpensive and clean fuel to replace common liquid fuels, like gasoil and gasoline.

Using a clean and green fuel like CNG in vehicles has been an economic approach aimed at reducing environmental pollution and resolving economic challenges mainly with regard to gasoline imports. That was assigned to the Iranian Ministry of Petroleum.

Why Natural Gas?

Iran owns world's second largest proven natural gas reserves and is a leading gas producer.

Iran is expected to double its current annual natural gas production of 87 mcm in ten years; the country has enough resources for a century.

Iran, holding 15% of gas reserves in the world, follows Russia in terms of gas reserves.

Iran has an extended network of gas pipeline. Natural gas pipelines provide gas to 2,800 cities and villages.

Gasoline and gasoil consumption stands high in the transportation sector. It has also a daily increasing growth which requires 10 million liters a year of imported gasoline. That highlights the advantages of using natural gas as fuel for vehicles.

Natural gas cost price is lower than gasoline price in Iran, while surplus gas could not be exported easily. Furthermore, natural gas exports require more sophisticated and costly infrastructure than liquid products; therefore, the value-added for natural gas exports declines.

The possibility of liquid product exports increases when domestic use of natural gas has increased.

Environmental pollution declines by replacing fossil fuels with natural gas in vehicles.

History of Oil Products Distribution Industry in Iran

The third panel held on the second day of the third annual Congress of the Iran Petroleum and Energy Club (IPEC) in Tehran was on petrochemical industry. The panel was presided over by Marzieh Shahdaei, who is vice minister of petroleum, the first for a woman at this post at the petroleum industry.

Distribution, as a sector faithful to refining and exports, started work in Iran as the country's first refinery was commissioned in Abadan. More than a century later, the distribution sector goes ahead with its growth and blossoming.

In 525 AD, Persian King Cambyses, during his invasion of Egypt, ordered the establishment of a pipeline made from leather to distribute water to his troops in the desert land. It was the first step ever taken in military logistics.

But the first pipeline for the transmission of petroleum products was built in 1874 after the first oil well was drilled in the US.

George Reynolds' tough job in Naftoun (Masjid Soleiman) yielded result in 1908 and the first oil well was drilled there. In that time oil was ready, and it had to be delivered to Abadan, where the largest oil treatment facility was supposed to be built.

In light of his big success, intrinsic courage and firm resolve, Reynolds managed to remain in his job for two more years. But after that he was sacked after receiving 1,000 pounds. However, his discovery led to the establishment of an oil giant that time: Anglo-Persian Oil Company (AOPC). APOC was later renamed Anglo-Iranian Oil Company (AIOC) and finally British Petroleum, today known as BP.

During the first years of activities of AOPC, when Naftoun oil field was the only oil producing reservoir in southern Iran, crude oil was transferred via a pipeline built in 1911 to Abadan.

Charlie Richi, 1st Pipeline Manager

In 1909, AOPC tasked Charlie Richi with constructing an oil pipeline stretching from Masjid Soleiman to Abadan. Since no welding technology existed in Iran, the pipes were joined with bolts and nuts before being placed in trenches. In order to prevent rusting and corrosion, the pipes were coated with bitumen that would be impermeable to water. After that the trenches were filled by local workers.

The pipes were transferred on barges rowed through Karoun River to a place between Shoushtar and Masjid Soleiman before being taken through rugged mountains and steep hills on mules which had been purchased from Isfahan, Baghdad and even Cyprus.

The mules were arranged two alongside each other. The distance between the mules moving in a line was regulated based on the length of pipes. In plain areas, chariots were used. A total of 6,000 mules were used in the transfer of pipes.

Local Workers

Richi was well aware that without specialized forces, it was hard to build the pipeline. Therefore, he chose a 50-member group from local tribes and taught them how to use pincers and wrenches. That was the beginning of formation of a technical group at Naftoun field. This group was charged with joining pipes from Naftoun to Abadan.

Construction of pipelines was one of the most important plans by producers because that was done by local workers under tough geographical conditions faced by Richi and his workers. At that time, the US was the leading country in manufacturing cast-iron pipes that were joined together to carry oil. APOC had submitted its order for pipelines to the American pipe manufacturing industry.

Richi had formulated plans to make maximum use of local geography in a bid to facilitate oil transfer. Oil storage tanks had also been built in Majid Soleiman, each measuring 800 feet above sea level. Based on Richi's calculations, oil had to be transferred for two miles from these tanks. Two miles farther, he had set up a pressure booster pumping station.

In the pumping station, piston pumps were powered by steam. They were powerful enough to pump oil directly to Abadan.

Four pumps installed there had each the power to give 52,000 b/d of oil. Oil could be easily carried through a 410-meter height. After that, the oil flow picked up speed in Lahbari Desert before taking a 392-meter height until finally it reached the southern plain of Khuzestan and go to Abadan.

In 1911, Richie concluded the primary tests on pipelines and announced that the 230-kilometer Masjid Soleiman-Abadan pipeline was ready to come on-stream. The pipeline was able to carry 400,000 tonnes of oil a year from Masjid Soleiman to Abadan refinery which had yet to be completed. Construction of Abadan refinery started in 1909 and ended in 1912.

The pumps could carry only 250,000 tonnes a year of crude oil. Furthermore, associated petroleum gas posed a big obstacle to oil delivery. Pipelines were blocked in higher spots and monitors were needed to watch the pipelines and unlock the pipes.

NISOC Weightlifters Crowned Asia Champion

National Iranian South Oil Company (NISOC) is a subsidiary of National Iranian Oil Company (NIOC) with extensive sport activities. NISOC has invested in different sport disciplines and has incorporated various sport teams. One of these teams is weightlifting. Weightlifting is a popular sport in Iran, and Khuzestan Province is no exception. The oil-rich province is home to a large number of qualified weightlifters. NISOC has brought these weightlifters together over these years and its team is now in position to win the Asian Cup & Asian Inter-Club Weightlifting Championships.

Amir Sadeqi-Panah

It may be interesting for the fans of weightlifting to know that the NISOC weightlifting club is around 80 years old. Immediately after weightlifting was launched in Iran in 1939, the Naft-e Khuzestan Club started its work. In those years, the weightlifting team was comprised of three workers hired by the Masjid Soleiman Oil Company. These three laborers competed in various games. Since the very early days of discovery of oil in southern Iran, this team managed to win many championship titles in Asia. Following the 1979 Islamic Revolution, the activities of this club picked up speed. The club attracted competent persons and started training them for weightlifting. Some of them remained national weightlifters for years. Now, due to investment and planning, this club has managed to win the Asian clubs championship title in addition to shining in the Pro League matches.

Runners-up in Pro League

One of important events in the NISOC weightlifting club has been training weightlifters for different age groups. Young adults, youths and adults have been weightlifters in this club in recent years. Many young players have won the championship title for the country while adults have finished runners-up. The significant point is that this runners-up title was achieved in the last pro league matches by ambitious young weightlifters. The champion was the Razi Insurance club that had hired national weightlifters like Behdad Salimi, Sohrab Moradi and Kianoush Rostami. The NISOC team was overpowered by the Razi Insurance powerful team.

Just 15

After the Razi Insurance, the champion of Iran's Pro League, pulled out of the Asian Cup & Asian Inter-Club Weightlifting Championships, the berth reserved at the games was automatically given to the NISOC club. Amidst an avalanche of problems like shortage of weightlifters, this club finally left for the Asian matches.

Due to the presence of some young weightlifters in the national team training sessions for competition in the matches, the NISOC club had to send the youth and young adults to the Asian matches. For example, one of weightlifters was only 15. He is the son of an employee of the Aghajari Oil and Gas Production Company and he managed to finish third. Despite all these issues, this team stood firm in the Asian championship matches. This title is of high significance for Iran's petroleum industry and represents a big honor for Iran's weightlifting.

Training Weightlifters Instead of Hiring Them

The NISOC club has never spent money on hiring athletes. Instead of spending big sums every year to hire new weightlifters, it arranges training for qualified youth who are potential weightlifters. They are mainly children of NIOC staff in different cities of Khuzestan Province and such investment has yielded results. In recent years, many weightlifters have been trained to join national teams and win international honors.

Gholam-Reza Shah-Karami, general director of the Ministry of Petroleum's Physical Education Organization, has said the NISOC club's activities like weightlifting will continue in compliance with the principles and policies of the Central Council of Sports at the Ministry of Petroleum and the Department of Health, in order to take a step ahead towards new achievements.

Exclusive Interview

NISOC Chief Trainer Mohammad-Reza Kazemi-Nejad:

Teenager Helped Us Become Asia Champion

Veteran weightlifter Mohammad-Reza Kazemi-Nejad is currently the chief trainer of the NISOC club. He has so far trained many weightlifters and contributed to the success of the team. Kazemi-Nejad says he takes pride in working with ambitious youth to help them reach highest levels. He, however, highlights the supportive role of the club managers and the NIOC in general. The following is "Iran Petroleum" interview with him:

Let's start with the Asian championship. Did you ever imagine winning this title?

The fact is that championship in Asia was viewed as very tough for us. After the Razi Insurance team ruled itself out of the race we found our way into the Asian matches and that was under conditions some of our national weightlifters like Ayoub Mousavi and Homayoun Teimouri were not with us because they had to travel to the US for training. Therefore, we had to take younger weightlifters with us to the Asian matches, but fortunately their performance was excellent and their result was surprising.

Most team members are sons of the NISOC employees, aren't they?

Yes, it is a great honor for us to have been able to work with a group of children of this company's staff in different cities and bring them to the matches. In the same team which won the Asian championship title we had a 15-year-old weightlifter; however, their performance was so good that we were all surprised.

Your team does not spent money on buying famous weightlifters. Why?

We have always tried to keep the NISOC club afloat through reliance on its own. Over recent years, more than 90% of the lineup of the team was young individuals, who are mainly children of the employees of this company in different areas.

They are from different companies varying from Gachsaran Oil and Gas Production Company to Aghajari. They are all from the oil family. Every year we try to help them to make progress. Thanks to God we have been successful in recent years and our Asian championship title proved our competence.

Do you think that your success will continue?

That's definitely so. What we do is a strategic plan which had been instructed by the Ministry of Petroleum and we put it into practice as our social obligation requires. As I mentioned, we worked on the staff's children and we are now witnessing its results. This trend will continue in the future and God willing we will achieve bigger honors.

Anything else you would like to add?

I offer my gratitude to the NISOC club management and the entire Ministry of Petroleum and NIOC for their excellent management of our plans. As long as they support us, we will naturally go towards bright days.

Tabriz, 2018 Tourism Capital of Muslim Countries

Tabriz is a city whose name has long been familiar to tourists and businesspeople across the globe. Since Tabriz linked West to East along the Silk Road, it is known as the Orient Gateway. The Organization of Islamic Cooperation (OIC) has designated Tabriz as the tourism capital of Islamic countries in 2018. That shows the significant status of this city in tourism. Due to the significance of this issue, Iran Petroleum offers a second review of tourist attractions of Tabriz.

Photo:saman goodarzi

Kandovan, a Rocky Village

The rocky village of Kandovan is located 62 kilometers southwest of Tabriz. Some archeologists believe that the houses were built in the 7th century on the hegira calendar when the Moguls invaded Iran.

With homes carved inside rocks, some of them 700 years old, the Kandovan village is said to have been partially formed by volcanic remains from a strong Mount Sahand eruptions hundreds of years ago.

The cone form of the houses is the result of lahar flow consisting of porous round and angular pumice together with other volcanic particles that were positioned in a grey acidic matrix. After the eruption of Sahand, these materials were naturally moved and formed the rocks of Kandovan. Around the village the thickness of this formation exceeds 100 m and with time due to water erosion the cone shaped cliffs were formed.On average, 300,000 Iranian and foreign tourists visit this historical village every year.

Heydarzadeh Domicile

Hedyarzadeh Domicile is located in the Maqsoudieh area of Tabriz. No historical document is available on the time of its construction; however, new evidence shows that it was built some 130 years ago by Haji Habib Lak. The two-storey building has one interior and one exterior court which are separated from each other by the house. The domicile was restored in 2001 and currently houses the provincial Center of Tourism Information.

Saint Stepanos Monastery

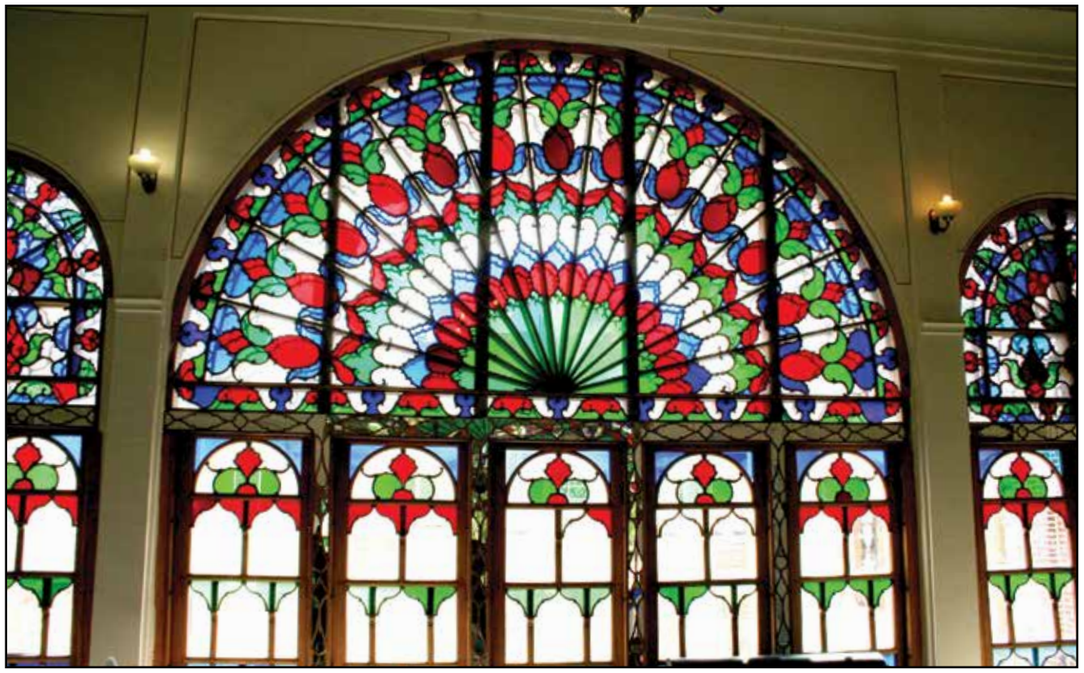
The Saint Stepanos Monastery, also known in Armenian as Maghardavank, is an Armenian monastery located about 15 km northwest of the city of Julfa in the province of East Azarbaijan. It is situated in a deep canyon along the Araxes, on the Iranian side of the border between Iran and Nakhchivan. It was originally built in the ninth century, and was rebuilt during the Safavid era, after being damaged through wars and earthquakes. It is part of the Armenian Monastic Ensembles of Iran, which are inscribed on UNESCO's World Heritage List. In the early 15th century, the new Safavid dynasty protected the Armenians, but the region was at the center of the conflicts with the Ottomans, who invaded Western Armenia in 1513. The monastery gradually declined in the 16th century. Shah Abbas I expelled the inhabitants of the region in 1604, and the monastery was abandoned. After 1650, the Safavids reoccupied the region and the abandoned monastery was restored in the latter part of the 17th century. The monastery underwent several restorations in the 20th century.

Photo:saman goodarzi

Tabriz City Hall

The building of Tabriz municipality is among the highly visited places in the city. Construction of the building was done from 1935 to 1939 on the order of Reza Shah Pahlavi under the supervision of German engineers. At that time, Haj Arfa'olmolk Jalili was the mayor of Tabriz. It has since been used to house the municipality. The building is fitted with a 30-meter clock tower that strikes time every 15 minutes. The building's map is similar to a flying eagle, which is similar to buildings erected in pre-World War II Germany. In 2007, this building started work as the first museum of city halls in the country. There are numerous halls inside the building.

Photo:saman goodarzi



Tabriz Ready to Host Foreign Visitors

One of the missions assigned to the Organization of Islamic Cooperation is to promote tourism among member states and develop tourism infrastructure in Muslim countries. Based on this mission, every year a city is chosen as the capital of Islamic Tourism.
The 9th ministerial meeting of OIC in Nigeria chose Tabriz as the capital of Islamic tourism for the year 2018.

Morteza Abdar, general director of East Azarbaijan Province Cultural Tourism, Handicraft and Tourism Organization, said the OIC had designated five cities as the capitals of Islamic tourism for a five-year period. The city of Quds in Palestine was chosen for 2015, Turkey's Kunya for 2016, Saudi's Medina for 2017, Iran's Tabriz for 2018 and Azerbaijan Republic's Baku for 2019.

He said Yazd and Tabriz were examined by the OIC, "but due to historical and civilizational issues, Tabriz was chosen as the capital of tourism in the Islamic world."

Abdar said many hotels had been built since the 1979 Islamic Revolution to provide services to visitors.He said after this decision by the OIC, necessary arrangements had been made for raising the number of hotel beds from the current 7,400 to 16,000.

Abdar said standardization of hotels and building three, four and five-star hotels were among plans envisaged to welcome tourists.

"Given the significance of housing visitors, we are making huge efforts to provide comfortable places for them in order to serve them and also promote the tourism industry," he added.

Abdar said that 4.5 million Iranian and 460,000 foreign visitors had traveled to Tabriz this calendar year, adding that efforts were under way for doubling the number of visitors as more foreigners are willing to visit Tabriz after the OIC designation.

"Due to this designation, we predict that one million foreign tourists would travel to Tabriz in 2018. Of course, tourists would travel throughout the year and we will have no problem with providing hotels to them," said Abdar.

He added that all museums, historical places and tourism attractions in Tabriz were ready to welcome this number of tourists.

Iran Petroleum monthly

If you have any comments regarding the articles in this magazine, please feel free to contact us through e-mail. Your views are appreciated.

Petroleum Ministry - Public Relations

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Tabriz, Jolfa

Saint Stepanus Church

Iran Petroleum Wishes Its Readers a Very Merry Christmas