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Sea, he said: "The first needed tug boat, 'Caspian 1', was launched on the 1st of this February and is getting ready for work. Construction of 'Caspian3' tug boat began on the same day and the construction of 'Caspian 2' has made 42% physical headway so far".

As for when the actual drilling would start in the Sea, Rafyie explained: "Drilling in the Caspian Sea could start upon completion of the said tug boats as well as Alborz semi submersible platform". Experts say, under these circumstances, the job will not be completed even by mid 2007.

Concerning the outcome of the tender for acquiring 10 onshore drilling rigs by NDC, he stressed: "The technical bids have been opened and we are busy with the relevant clarifications".

Jihad Nasr Institute to form joint consortium on oil, gas

Jihad Nasr Institute will establish a joint consortium comprised of domestic and foreign companies on oil and gas infrastructures in the near future.

Managing Director of Iran Jihad Nasr Institute Yadollah Shamayeli said at the first stage, some Iranian companies active in oil and gas construction projects would cooperate with Jihad Nasr in this respect.

He said that formation of the consortium in the presence of Jihad Nasr, other Iranian and foreign oil and gas firms, and investment companies and the specialized consultancy firms are on top of the agenda.

Such companies have to improve their capacities via participation in big projects and investments and applying new mechanisms, he added.

Establishing the joint domestic and foreign consortium in oil and gas fields will develop their capability to compete giant international companies in this respect, he noted. Iran Jihad Nasr Institute is participating in construction and establishment of oil and gas pipelines and implementing almost 300 infrastructure projects in the country, he said. Some 25 companies are active under the supervision of Iran Jihad Nasr Institute.

Further delay in drilling of phases 9&10

Explaining the reason for the delay in the start of drilling of phases 9 & 10, earlier set for late last December Akbar Torkan, managing director of Pars Oil & Gas Company (POGC), said: "Conditions are set for starting the drilling; the only hitch is that the chosen drilling rig has been taken to the site of phases 6, 7 and 8 for some repair works. The job in phase 7 has already been completed and the rig is now busy

with phase 6. Once the repair works in the three phases are done with, the rig will be brought back to the site of phases 9&10 to kick off the drilling operation".

According to an NIDC official the drilling of phases 9&10 was to start, using "Saga 1" or "Saga 2" drilling rigs. The drilling job was supposed to start with a single rig and the second one was planned to join the operation six months later. If the task actually gets underway this February, it will not be completed any earlier than Q1 2009. The \$ 293 Mln deal for drilling of these phases is in EPD mode.

In the related news Morteza Emmami, manager of the project with POGC said: "The platforms for development of phases 9&10 of South Pars gas field will be installed in June 2007 and then fully commissioned in the following summer".

Putting the overall progress in offshore and onshore sections of the development project at around 64%, he elaborated: "Construction of their platforms has made 76% headway and the onshore section of the project has moved over 63% so far".

Calling shortage of cash flow with the contractors a major problem in the project, he hoped the issue would be overcome soon.

As for the budget of the project, he stated: "Taking into account the costs of its drilling and building the infrastructure, like the power plant, the project will need some \$ 2.5 Bln, of which 60% has been secured so far".

NIOC issues green light for Mehr development

Austria's OMV hopes to resume its suspended drilling operations on the Mehr block within days and draw up a master development plan in time for a possible development contract by the end of the year.

The company secured belated approval of its commerciality report for Iran's first post-revolution oil discovery.

In announcing the go-ahead for the Mehr exploration venture, National Iranian Oil Company (NIOC) and OMV said a production target of 30,000 to 40,000 barrels per day has been set. A source told Upstream, that actual production could easily exceed those targets. About a dozen development wells are due be drilled at Mehr. Recoverable reserves at the west Iranian field have been projected at about 150 million barrels.

Sources said this is a very conservative estimate, and the reserves could exceed 300 million barrels.

The official projection is believed to be closer to the very conservative Iranian estimate. OMV and its Spanish and Chilean partners Repsol YPF and Sipetrol

now have to draw up a master development plan ahead of talks to seal a development contract. This may take about six months.

Under the 2001 unmodified buy-back contract for the Mehr block, the explorer is guaranteed only a 30% role in the eventual development, with the remainder of the stake being put out to tender.

However, a source said it is "very difficult to see the process being interrupted by another tender".

OMV and its partners seem set to secure a full development contract for Mehr after what has been a prolonged wait for NIOC to approve its commerciality.

Having suspended drilling in mid-2005 following unexplained technical problems, the two sides had been in talks over such issues as reserves estimates until on the eve of NIOC's third licensing round for 17 blocks in Vienna.

OMV officials, including head of exploration and production Helmut Langanger appeared to be taken by surprise when the NIOC's legal affairs boss Mostafa Zeinoddin announced the state oil company's approval.

OMV struck oil at the Band-e Karkheh well in early 2005, testing the 4600-metre-deep probe at a flow rate of just over 1000 bpd of 22 degrees API.

The OMV-led group has spent \$80 million so far at Mehr. OMV also has a stake in the Nabucco pipeline proposal to carry gas from the Caspian Sea and Middle East to Europe, and for which a stage through Iran would be essential.

Iran has offered no discount in gas price to India

What was agreed upon in the latest round of talks on Iran-Pak-India gas pipeline (also known as peace pipeline) project in Tehran was just about the gas pricing formula suggested by the consulting firm, not a 30% drop in the gas export price, allegedly claimed by the Indian officials, Fars news agency has quoted the PR office of National Iranian Gas Export Company (NIGEC) as reporting.

According to this report, the proposed pricing formula meets over 90% of Iran's requirement and despite the attempts made by India and Pakistan to fix the major parameters of formula; these parameters are based on the price of energy carriers and hence change over time.

During the said talks, the Iranian negotiators made it clear to their Indian and Pakistani counterparts that if they really wished to buy Iran's gas, they would have to accept the conditions set by Iran.

The news about the reduction of the gas price,

attributed to Murli Deora, India's oil minister, seem to be nothing short of a fabrication. These are believed to have just targeted the Indian public opinion and have not as yet been confirmed by any official Indian source.

The web-based Z-News network had quoted Deora as saying that, given Iran's decision to reduce the gas export price by 30%, India has agreed to finalize the gas import deal in the next three months.

In related news, IranOilGas has learnt that Gholam Hossein Nozari, the NIOC MD, who was attending the official ceremony held for signing "Iran LNG" deal, commented on that 30% reduction issue by saying: "That is not true."

In the trilateral meeting about the peace pipeline project, the two countries were given a month to consider the price offered by Iran and get back with their comments.

No discount was offered to them and they seem to have accepted Iran's price formula".

Locals to build well-head facilities for POGC

The Pars Oil and Gas Company (POGC) has signed two deals totally worth Rls.700 billion with Iranian companies for the manufacturing of well-head facilities.

The POGC signed the deals with the Machine Sazi Arak, Petroleum Equipment Industries Company (PEIC), and Abzar Bartar Iran.

Under the contracts, 51 well-head and Christmas trees with the international API standard will be manufactured for the POGC within three years.

Iran's Industry & Mine Bank pays for petchem plants

Mehdi Razavi, managing director of Iran's Industry & Mine Bank (IMB) said: "IMB has provided four Iranian petrochemical companies with a total of \$ 1.183 Bln of foreign exchange facilities in the past ten months (from Foreign Exchange Reserve Fund)", adding: "Mahabad and Lorestan petrochemical plants have each received \$ 297 Mln, Iran's Petrochemical Commercial Company \$ 180 Mln and Kavian Petrochemical Company \$ 409 Mln".

Pointing to the establishment of 'Iran & Europe Bank' (IEB), registered in Europe, he stated: "Iran's Mellat, Tejarat, and Industry & Mine Banks are the shareholders of the IEB, with IMB holding 51% of the shares".

Concerning the sanctions against Iranian banks following the recent anti-Iranian UN Security Council resolution, he noted: "IMB has not been troubled".

Ethylene plant of 5th Olefins ready by March 2008

The 5th Olefins project (Kharg Olefins) was one of the petrochemical plans foreseen to be executed in Iran's 3rd Development Plan (Apr 2000-Apr 2005).

The project consists of two main units, a 500,000 t/y Ethylene unit and a 550,000 t/y Mono Ethylene Glycol (MEG) unit.

Construction of the Ethylene unit was assigned to the JV of the French Technip and the Iranian Nargan in 2003; however, the project has faced a sluggish trend due to a variety of reasons.

In 2005, the project's client and contractor decided to speed up its executive works; however, this did not happen because IOOC failed to find a contractor for the Kharg NGL project (which was foreseen to supply the feed of the 5th Olefins).

In March 2006, NPC decided to relocate the Ethylene unit to Assalouyeh. Hence, the purchased equipments were transferred to Assalouyeh and Khatam al-Anbia HQ was chosen as the civil contractor of the project.

According to Safar Ali Babaie, managing director of Morvarid Petrochemical Company (in charge of executing the project), the civil sector of the Ethylene plant has progressed 55%.

He has also explained that the installation and the piping works of the unit were moving forward in parallel with that of the civil sector, and installing the unit's furnaces would start in September this year. He hoped that construction of the Ethylene unit would be completed by March 2008.

Babaie also stressed that Kharg Olefins plan remained valid and an Ethylene unit, similar to the one underway in Assalouyeh, would be built in Kharg Island.

The yields of the Assalouyeh Ethylene unit will be supplied to Iran's West Ethylene Pipeline (WEP).

The 650,000-t/y feed of the project is planned to be supplied by the yields of phases 4, 5, 9 & 10 of South Pars gas field.

The needed utilities of Ethylene unit will be provided by "Mobin 1", which will include 15 MW of power as well. Mobin Petrochemical Company is also in charge of constructing the water intake facilities of the unit.

Oman to award two more drilling blocks

Independent oil producer Oman is planning to award two more onshore oil blocks to foreign firms

on a production-sharing basis, a senior Omani energy ministry official said.

"These open concession areas are close to Petroleum Development Oman's (PDO) concession area at Marmul in southern Oman," Khalifa bin Mubarak Al Hinai, advisor to the Ministry of Oil and Gas, told reporters on the sidelines of a conference.

Oman is already due to announce production-sharing agreements on three oil blocks with Russian, Ukrainian and Indian firms short-listed for those.

Last year, it awarded seven oil blocks - including five sites held by majority state-owned PDO - to multinational oil firms for development.

"We will soon award three blocks for development. Quite a few companies are short listed... The concession agreement will be signed within two weeks," Hinai said, referring to offshore blocks 41 and 59 and onshore block 39.

Oman, which has been trying to beat an output fall that began in 2001, has said it will spend \$10 billion in the next five years to boost oil output to 900,000 barrels per day and natural gas production to 70-80 million cubic meters per day.

The hydrocarbon sector accounts for 80 per cent of Oman's export earnings and 40 per cent of its gross domestic product. Meanwhile, Shell made four petroleum discoveries last year in Egypt, as the nation seeks to stem a decline in crude-oil production.

Qatar to host gas exporters forum in April

Qatar will host a meeting in April of gas exporters that hold 70 per cent of the world's reserves, Energy Minister Abdullah bin Hamad al Attiyah said.

The meeting comes after Iran made overtures to Russia about establishing a gas grouping like OPEC, stoking concerns among energy-consuming countries.

Iran's Oil Minister Kazem Vaziri-Hamaneh said the exporters would discuss forming an OPEC-like group.

"In the next meeting of the gas exporting countries they will decide about a gas OPEC," Vaziri Hamaneh told Iran's Oil Ministry.

But Al Attiyah said he saw no need for an OPEC-style group, and that gas exporters should concentrate instead on developing the Gas Exporting Country Forum.

"We do not see the need for the creation of a gas organisation (similar to OPEC) because the issue of gas is more complex," Al Attiyah said.

Zirakchian-zadeh Announced:

Gas Injection into Soroush Field

The Iranian Offshore Oil Company (IOOC) was established in September 1980 for development and production of oil and gas in the Persian Gulf. This company was created from the merger of five dissolved companies of "SIRIP", "IPAC", "LAPCO", "IMINICO" and "SOFIRAN Oil Co."

The following interview was conducted by "Naft News" Analysis Site with engineer Mahmoud Zirakchian-zadeh, managing director of IOOC. In this interview, the official has elaborated on the latest developments and plans of the National Iranian Oil Company (NIOC) with respect to the country's offshore region.

Q- Which offshore fields are under study? Which fields' studies have terminated during the past few months? What has been the result of these new studies regarding the amount of oil-in-place in the fields located offshore?

A- The Abuzar, Reshadat, Esfand, Alvand and Doroud fields are currently under study. Also the studies on Resalat and Hendijan fields have recently been completed. The past studies have demonstrated that Hendijan field contained 598 million barrels of oil-in-place. However, new investigations indicate an increase of this figure to 1.443 billion barrels of oil. Also, the oil-in-place in the Resalat field has been increased from 1.280 million barrels to 1.710 million barrels. In addition, with the completion of reservoir evaluation studies of the Reshadat field, its estimated oil-in-place has been raised from 2.512 million barrels to 4.648 million barrels.

Q- How much has the average production of offshore wells now fallen compared to 1979? What are your plans for maintaining and increasing their production levels?

A- The average production of offshore oil wells has fallen about 20 percent as compared to the levels in 1979. The wells' productivity decrease over the years is a natural phenomenon. However, the trend of the decrease in productivity could be slowed down by pressure maintenance activities and the usage of modern production technology. Employing new production technologies, pressure maintenance by water and gas injection, gas-lift method and using horizontal drilling techniques are the solutions envisaged by IOOC for improving recovery of the reservoirs.

Q- How much gas is being injected into offshore oil reservoirs and what was the level of gas injection

envisaged under the plan? What is the volume of gas being flared and when will they be gathered?

A- With the completion of buy-back development project of Doroud field, it is planned to inject 120 million cubic feet per day into the Doroud field in order to maintain pressure and even increase in reservoir pressure. The injection of Reshadat and Resalat associated gases into Doroud will be conducted in the next three years. The gas injection study of Abuzar field is being finalized. A tender is also being launched for gas injection into Soroush field. On average, some 730 million cubic feet of gas per day is being flared in the IOOC. With the commissioning of LNG projects in the Kharg and Sirri regions, the flared gas will reach to the minimum volume. The Kharg and Sirri LNG complexes are expected to become operational at the end of 2009 and 2010 respectively.

Sirri LNG will prevent flaring of total associated gases produced in the Sirri region in the year 2010. The gas will be transferred to Kish and Qheshm power plants in order to meet their energy requirements. Gas distribution to Kish Island will be implemented in the current Iranian year.

With the commissioning of Kharg LNG in about 44 months time, the flaring of total associated gases produced in the Kharg and Bahregan regions will be prevented.

The Balal field's associated gases are under study and the flaring of all offshore associated gases will come to a halt within the next four years.

Q- Which new fields are planned to be brought under production in the offshore region?

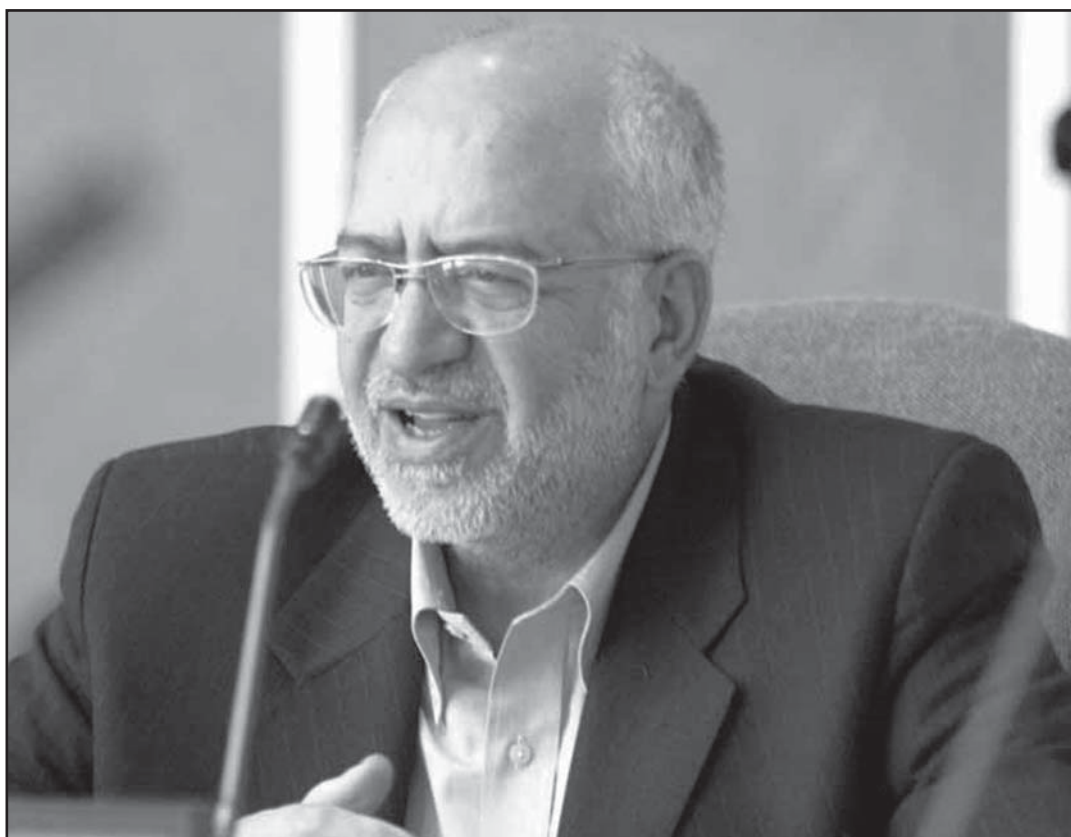
A- The new gas fields of Lavan and Kish and also the oil fields of Bahregansar, Reshadat and Resalat (after renovation) are the fields that their output will be increased in the future years.

Q- In what areas is IOOC prepared to participate internationally?

A- The Iranian Offshore Oil Company (IOOC), as a company committed to improved oil recovery from the Persian Gulf fields, is prepared to cooperate jointly with all the international companies having expertise in the areas of the oil and gas technologies for development of new fields or increasing the recovery factor of the fields. With respect to cooperation in other countries, our company is also prepared to participate in the offshore sector. Having half a century experience, IOOC enjoys high capability for running the facilities and can be a successful player in other countries.

Interview with deputy oil minister and managing director of refining and oil products' distribution company

Serving People Is Duty of Government Officials



First international symposium on Iranian refining industry will be held in Tehran on 17-18 February 2007 in line with policies and general planning of the National Refining and Oil Products' Distribution Company. These policies and planning include: an optimized increase in refineries' capacity in order to provide the necessary feedstock for downstream projects, a reduction in production of heavy and low cost products employing the latest technology in the processes, the production of light and valuable products such as gasoline, the establishment of products' quality system based on Eu-2005 standard, reduction of environmental pollutants, implementation of HSE management by employing more advanced electronic equipment, renovation of control sites by replacing electronic systems (digital & fieldbus instead of pneumatic and).

The following interview has been conducted with Eng. Nematzadeh, deputy oil minister and managing director of refining and oil products' distribution company:

Q- Mr. Nematzadeh, It would be better to start the interview by recalling a memory and then ask you a question about it. On your last days as the director of the National Petrochemical Industries' Company (NPIC), we went to Assaluyeh along with you. In reply to my question regarding whether you will continue to be a manager in the next administration, you said a manager would be a manager under any circumstances and

should perform its duties. You added that you will be ready to provide your services wherever the need is felt. However, you pointed out that you would like to finish the uncompleted works at the petrochemical company. Would you like to return to your former post now or whether you have found it more useful to manage the refining and distribution company?

A- It seems I was honest in my statements. All those

working for the government are duty bound to serve the people and should provide their services based on their capability and experience. Since I had more knowledge and experience in the industry compared to other sectors, I was interested to work in this area. Of course, I had a wish to develop and progress the uncompleted projects in the NPIC. But in view of the prevailing conditions in the country with respect to fuel and the priority given to overcome the shortage crisis and meet the country's fuel requirements, the oil minister emphasized that I would join our colleagues at National Refining and Oil Products' Distribution Company (NROPDC). So, this was materialized. Although the duties here are hard and difficult, but I hope we have done good services in the past 7 months during which I have assumed this post. I also hope we can also perform successfully in the future.

Q- Since you assumed this post, it seems your most important goal has been development of existing refineries. Is development and construction of refineries in the country one of your main goals in the NROPDC?

A- What has been planned and pursued are development, renovation and modification of the structure of the existing refineries. Currently, there are about 9 refineries in the country of which 8 refineries are now under such a movement. The contract for the Arak Refinery was concluded sometime ago and it has fortunately reached implementation stage. Also, a contract for Abadan Refinery's gasoline-making unit has been concluded and it is now under engineering stage. The winner for the tender of a part of Isfahan master project has also been selected and its contract will shortly be concluded. Other sections of Isfahan Refinery have also been put on tender and the winners will shortly be announced. The tender for Tehran and Tabriz Refineries is under way hoping to select the winner within the next month. As regards to the Shiraz Refinery, tender has not been started yet; however, only its basic engineering section has been put on tender and is currently underway. Bandar Abbas Refinery has been divided into several stages. The first stage has been under implementation during the past 18 months and it is hoped to be completed early next year. The tender for capacity increase and gasoline-production units of Bandar Abbas Refinery have been issued this year and the winner of the tender will be determined soon. Under such a situation, it is very clear that one of our main aims is to optimize usage of the available refineries. In this respect, great investments have also been made in order to add almost 40 million liters per day to the country's gasoline production.

Q- You spoke about starting tender process for development of the Tehran Refinery. There are some talks about pollution in the Shahr-e-Ray region and inability to eliminate it for at least the next two years. Would you think that the development of this refinery is now in the region's interest?

A- The pollution issue has numerous dimensions (i.e. air, sound, water and land pollutions). Fortunately,

Tehran Refinery faces no problem with regard to air and sound pollutions although efforts are still being made for modification of one of its furnaces to be completely sure about its exhaust gases meeting standard requirements. But regarding water and land pollutions, it should be pointed out that the land and water had been polluted to some degree since years ago and even prior to the refinery's construction. That was due to construction of oil storages in this area before the refinery was built. Crude oil was transferred through pipelines from the south of the country to be stored and loaded in this area ultimately leading to the region's pollution. The situation was further aggravated when the country was faced with the imposed war and the refinery was damaged by the bombardments. Fortunately, the pollution has been controlled thanks to the efforts made during the past two or three years. But, it can not be denied that part of the land and water is polluted in this area. At present, the necessary actions have been made in order to clean up the pollution. The operational activities have been started since one or two months ago. But the operations will take time due to the nature of the job and the fact that several thousand wells should be drilled to evacuate the water with special equipment and separate the oil products penetrated into the ground. It would take about 5 years to be sure about the elimination of the pollution. However, it is hoped to remove large part of these pollutions within the next two or three years.

Q- Is the elimination of oil pollution carried out by domestic experts?

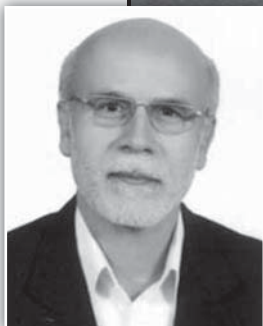
A- Since no experience exists in the country with respect to the design of such an activity, the design work is carried out with the cooperation of Japanese engineering companies but the executive work will be done by Iranian companies.

Q- Some experts believe that the development and construction of refineries lacks economic justifications as the government's policy is based on encouragement of CNG-burning vehicles. What is your view?

A- I just mention one figure. Can CNG replace gasoline 100 percent or not? According to estimates made based on "20-Year Perspective", there should be about 12 million vehicles in the country by the year 2025. The total number of vehicles in the country is at present estimated to be 7.5 million. At present, the rate of growth of gasoline consumption is estimated to average 4.5 percent per year (in the most optimistic case) during the next 20 years. However, the rate of growth of gasoline consumption during the last 5 years has been on average 10 percent with CNG meeting part of this requirement. But gasoline consumption will continue to grow in the future.

I wish you and your colleagues all the best for the future. With your endeavors, I hope we will be able to remove not only the current shortages in the sector of middle-distillate products but also to transform the Islamic Republic of Iran into an exporter of oil products.

Managing Director of Marun Oil & Gas Company Announced: Gas Injection; Ahead of Plan



The giant Marun Field consists of three reservoirs of Asmari, Bangestan and Khami. Oil is present in the Asmari and Bangestan reservoirs while gas was found in the Khami reservoir. The oil reservoirs in this field are currently under production but the khami reservoir is at development stage. The first well drilled in this reservoir, i.e. Marun khami well 222, having a highest pressure among the country's gas wells, was inaugurated by the petroleum minister a few weeks ago.

The first discovery in the Marun Field was in the giant Asmari reservoir in 1963. The Asmari Formation has highly complex and heterogeneous rock characteristics. Since its discovery, a lot of activities have been carried out for the development and production from the Marun reservoirs. At present, Marun Oil and Gas Production Company (MOGPC) is in charge of the field's production. This company is one of the five oil and gas production companies affiliated to the National Iranian South Oil Company (NISOC). Marun Oil & Gas Co. began its activities in the year 2000. The construction of MOS unit (mobile crude oil processing facility) can be cited as among inventions of Marun Oil & Gas Production Company.

Engineer Ali-Mohammad Javadi serving the country's oil industry for 32 years, took charge as managing director of MOGPC since establishment of the Marun Company. He holds MSC from technical faculty of the University of Tehran. Mr. Javadi started his work from oil industry's maintenance units.

The following interview has been conducted by Mehdi Khaki-firouz of "Mashal" weekly with Mr. Javadi.

Q- Marun Oil and Gas Production Company is producing 600,000 barrels per day (bpd) of crude oil. How this level of output is managed?

A- The average daily production is 600,000 barrels with some trivial fluctuations. This level of oil production is obtained from Marun, Kupal and Shadegan reservoirs comprising 6 production units plus Shadegan separator. In all, there are 26 different plants active in this company comprising Kupal and Marun production units 1,3,4,5,6 and Marun-4 separator, Shadegan, Marun-1 sludge catcher, five desalting units, six boosting units, two gas injection units, two NGL units, Khami facilities and a water distribution unit. In addition, two Amak units will also be added to our facilities in the current year and early next year.

Q- Isn't Marun-2 production unit under your supervision?

A- No. Apart from Marun-2 production unit which is within operational zone of Agha Jari Oil & Gas Production Company, other sections of Marun reservoirs in both Asmari and Bangestan formations are managed under MOGPC's supervision. Also, Marun Khami reservoirs (gas), Kupal Bangestan, Kupal Asmari, as well as Shadegan Asmari and Bangestan are under our company's supervision. The Marun engineering section was also in charge of the Marun-2 production unit from the outset. However, based on a decision taken by one of the former NISOC managers, its engineering works were also transferred to Agha Jari Oil & Gas Co.

Q- A group of experts believe the reservoirs under your supervision seriously require gas injection and current activities are not being implemented properly. To what extent would you consider such claims as being valid and correct?

A- The reservoirs under MOGPC, with the exception of Shadegan and Kupal Bangestan, would require gas injection to maintain pressure at initial pressure level. The planning to inject gas into Marun was made before the Revolution and major construction works for a gas injection station were also carried out prior to the revolution. The project's construction activities were stopped later due to the revolution and the start of the imposed war. A gas injection was started from 1989 after completion and commissioning of the gas injection unit. It is to be noted that, based on the plan, initially gas from Aghar and Dalan gas reservoirs were to be injected into Marun reservoirs. However, due to non-

completion of the required facilities and prevention of the Marun field from going into pressure decline, gas from Pazanan gas cap, being a little sour, was injected. But currently, the gas from Aghar and Dalan are used for injection and sometimes the gas from Pazanan is injected to fulfill the shortages. With the commissioning of Marun Khami facilities, its gas is also being transferred for Marun gas injection requirement. Gas injection scheme is considered to be within the plan and its progress has sometimes gone ahead of the plan.

A lot of gas can be injected into Marun and if sufficient gas is available, gas injection can be implemented more than what has already planned. Gas that has been injected has caused a pressure rise of about 300 psig in some sectors in Marun field, indicating the usefulness of injection. It is therefore false to claim that gas is not being properly injected. Marun gas injection unit is the country's biggest injection facility with a planned average daily gas injection rate of 21.62 million cubic meters of gas for IOR purposes as well as for reservoir pressure maintenance. But practically, the average daily gas injection reached 22.428 million cubic meters over the first half of the year.

Because of oil production, Kupal Asmari reservoir also experienced rapid pressure decline requiring implementation of gas injection project. There is a gas injection plan for Kupal and a gas injection station was commissioned in 2002.

The commissioning of an injection facility has caused an improvement in the reservoir's pressure. But due to limitations to make available the required gas, Kupal gas injection is behind the schedule. Based on recent studies, it is required to inject gas into Kupal reservoir twice the volume envisaged under the current plan in order to arrest pressure decline of the field. In this respect, suitable projects have been defined. With the implementation of such projects, the gas will be injected at the required volume. The gas injection volume into Kupal based on current plan is 4.25 million cubic meters per day which will reach to 8.5 million cubic meters per day with the implementation of the new project.

Q- What is the average life of your fields? Is the pressure problem in the reservoirs of Marun Co. the result of merely improper exploitation in the past or whether they have reached a period of decline in pressure?

A- Based on drilling history, most of the

company's wells have a very long life. Well Marun-1 was drilled in 1963 and the Marun Asmari went on production from year 1965. The life of old Marun wells is therefore more than 40 years.

Marun reservoir is at the second half of its life, its pressure is on the decline and to date more than half of its proved oil in place has been extracted. If gas injection was not implemented, the production of oil from Marun was now very low due to its pressure decline. Gas that has been injected into Marun, not only has arrested pressure decline, but has also caused a pressure rise of 300 psig resulting in production continuation.

The same case applies to Kupal reservoir. Based on latest studies on Kupal, the total gas injection requirement is twice the current volume. The development program for construction of gas injection facilities has been prepared.

It can not be said that the problem experienced by the reservoir results from improper exploitation during the past years. The production is carried out based on IOR planning prepared by the NISOC / Marun Co.'s technical management engineers. If, based on their planning, gas injection projects are implemented in time, the end result will be increased recovery from the reservoir.

Q- Is the gas injection the only solution for increasing the reservoir pressure and there exists no other economical technologies?

A- It depends on available resources and the reservoir's location. For instance, in the offshore reservoirs where there is an abundant supply of water, water can be used to raise the pressure by injecting it to the water layers in the reservoir. But in view of the availability of associated gas and independent gas reserves in the country, implementing gas injection projects is the best choice with the aim of maintaining the pressure of Marun reservoirs.

Q- In view of the maturity of wells under the supervision of Marun Oil & Gas Production Co., the decline in pressure has caused reduced production. Is raising pressure considered as the only remedial action for improving recovery or other solutions also exist?

A- The main, optimized and simple solution for increasing production and maintaining pressure is through implementing gas, water or inert gases like nitrogen and carbon dioxide. Of course, other solutions such as fracturing the reservoir rock,

acidizing, and ...also exist. At present, acidizing is continuously being done on some wells for eliminating production bottlenecks, increasing well pressure and consequently production.

Q- Is the problem associated with the maturity of Marun Co.'s reservoirs have only caused the pressure decline or whether other problems such as corrosion of well tubings and other facilities have resulted?

A- Oil reservoirs have limited recoverable oil using the current technology. Due to production, the volumes of oil production ultimately go into decline thinning the oil layers. Under this situation, the production will be done with more difficulty and pressure of the reservoirs will ultimately be reduced. Also because of the corrosions in the tubings and the aging of the facilities, production is facing with more problems but it has no effect on reservoir pressure decline. Generally, the decline of reservoir pressure depends on the rate of production and the gas injection scheme.

Q- In spite of difficulties such as pressure and temperature, the drilling of first Marun Khami well was successfully carried out. How many wells will be drilled in this reservoir?

A- For the first phase of Marun Khami, four wells have been planned and their drillings will shortly be completed. The drilling of these wells has led to the production of 200 million cubic feet of gas and about 34000 barrels of condensate, which are currently being injected into the oil. However, based on the plan, they will be transferred to Mahshahr petrochemical facilities in the future. The gas will be used for injected into Marun. It should be noted that such figures are preliminary estimates that may be changed after the implementation of the first phase and gaining better knowledge about the reservoir.

Q- Marun oil is said to be sweet. So, what was the aim of establishing Marun desalting plants?

A- A sweet oil is usually defined as oil having its H₂S amount within a certain limit and the Marun oil is sweet based on the definition. This is something apart from the presence of salt in the oil. At the start of oil production from Marun, its salt content was less than the admissible level. With the thinning of the thickness of the oil layer and when the producing zone became near to the aquifer, the salt content of the produced oil increased. This is why all the production

units are now equipped with desalting plants. Marun-5 desalting plant was commissioned two years ago for Bangestan and sour Asmari oil of production unit-3 which had salty oil. Since more wells are becoming salty and available desalting capacity is insufficient, planning have been made for increasing capacity and development in order to improve the performance of the available desalting units. In this respect, Marun-4 desalting plant was developed and its capacity was doubled. The study for development of Marun-3 desalting unit is at the design stage. Also, optimization of Marun-6 desalting plant is under implementation. In addition, the installation of heat exchanger on all desalting plants to improve their performance is under execution.

Q- You talked about improving oil recovery by acidizing of some wells. Doesn't this cause pollution of the produced oil?

A- Oil polluted with acid has a corrosive property. For this reason, it does not come on-stream. Also, it may sometimes be necessary to stop the oil flow for a short while due to well repairs or pressure drop.

Q- Where does the oil go when it doesn't come on-stream?

A- This oil was previously burnt near the well site. Its flow to the unit would then continue after well pressure adjustment and complete removal of the acid. This issue, however, had unfavorable environmental consequences. Hence, two MOT plants were constructed by NISOC for processing this oil, neutralizing the acid and separating the salt so that the polluted oil would not be burnt. Because of the limitations of the number of MOTs and for protecting the environment, MOTs are usually used for wells located in the vicinity of the cities. NISOC has plans to construct another four MOT hoping not to burn any more oil once they are constructed. The problem of Marun wells is not limited to acid job. Due to the drop in pressure, we are sometimes obliged to open the well so that its pressure increases to the required level for the oil to flow to the plant. In the past, we used to burn the oil, amounting to 2000-3000 barrels, flowing from the well for one or two days.

Our colleagues constructed a plant similar to MOT from available and out of date resources. However, the plant lacks the acid neutralization section. This plant, called MOS (mobile crude oil processing plant), is used for revival of the wells. The plant has prevented the burning of about 14000 barrels of crude oil during the first six months of the current year. In addition to

economic advantages, the plant has also had positive impacts on the environment.

Q-Is the activities of MOGPC with respect to constructional works limited to constructing MOS?

A- The petroleum ministry's strategy is development of domestic resources. For this reason, Iranian companies under license with a foreign partner can replace imported products with their manufactured products. This action, although having desirable outcome, could sometimes inflict damages to our technical systems due to the manufacture of poor quality products. It is hoped that domestic manufacturers attach more importance to the quality of their products.

A part of the strategy to support domestic manufacture is aided by the petroleum ministry. Our procurement office is supporting the equipment manufacturers in Ahwaz and Khuzestan Province.

Q- One of the policies adopted by the new government and the petroleum ministry is to transfer decision-making from the centre to operational areas. This was why the offices of a lot of companies were moved to the operational regions. Does the transfer of authorities go ahead with a suitable speed?

A- Fortunately the esteemed petroleum minister and managing director of the National Iranian Oil Company (NIOC) have a clear vision in this regard. They have emphasized, in their visits to the south oil-producing regions, not only to return the previous authorities these regions enjoyed but also entrust them with new authorities. In this respect, preliminary steps have been taken but are not completed and finalized yet.

Q- In your view, what issues should be added to the authorities of the oil-producing regions?

A- The decentralized policies are very necessary for the better conduct of the affairs. Centralization causes unreasonable delay in the implementation process of some activities. Should the authorities of such kind of activities are granted to the oil-producing regions; the activities can be implemented easier and more smoothly. The authorities to be submitted are very good and it is hoped to be finalized as soon as possible.

Fortunately, sympathy now exists between the officials in charge of the petroleum ministry and the south oil-producing regions. Therefore, the possibility of the outbreak of problem is considered to be very low.



Iranian Refining Industry and First International Symposium

First international symposium on Iranian refining industry will be held in Tehran on 17-18 February 2007. It is an important event which could open new windows on the oil industry's downstream sector in the country.

Refining industry in the passage of time

The Iranian refining industry has a long history. It can be claimed that the industry will be a century old in less than three years time. The designing stage and initial years of the country's first and oldest refinery, i.e. Abadan Refinery, started in the year 1910. Its first phase became operational in 1913. Later, the refining capacity of the Abadan Refinery reached to more than 550,000 barrels per day (bpd). It was known as the world's biggest refinery in the year 1955 and later years. Abadan Refinery has also a special role and place in Iran's contemporary history and especially in the history of Iranian people's struggle for freedom. This refinery became a symbol of Iranian people's national capability and desire for independence during at least two occasions. The first time was during the oil nationalization period and take over from the foreign company, when the Iranian experts and academics managed to keep the refinery's flame burning despite the fact that they had enjoyed the least technology

transfer in the past. The second time was after the end of Iraqi imposed war against Iran when Iranian experts succeeded in the shortest possible time to renovate and commission a refinery which was located in the enemy's direct firing access and a few hundred meters from the enemy line.

In addition, Abadan, the refinery and its lateral facilities had been a symbol of work, effort, growth and flourishing of Iran's economy for many years. All these factors have created a deep link between Iran's refining industry and oil political economy.

With 1.7 million bpd refining capacity, Islamic Republic of Iran ranks in the 16th place among the world's more than 180 countries. Among the Middle East and Persian Gulf countries and also OPEC members, Iran ranks second after Saudi Arabia with respect to refining capacity.

The rate of growth of Iran's refining capacity had been much higher than the world's average. While the world's total refining capacity during the past forty years has reached to 85.7 million bpd in 2006 from 34.5 million in 1965 (2.5 times increase), Iran's refining capacity has been increased by 3.6 times reaching to 1.7 million bpd in 2006 from 470,000 bpd in 1965.

Iran's 20-Year Gas Prospects

To strike the balance between local gas supply/

demand and that of export, in the form of LNG, (apart from what will be available in 2025 from 22 Phases of South Pars gas field), 3 other gas reservoirs will have to be developed and their yields be made available to NIGC by the said time.

These are: North Pars with the projected production capacity of 118 mcm/d; Kish field with a production capacity of 102 mcm/d and the Persian Gulf smaller gas reservoirs with an overall production capacity of 75 mcm/d. NIGC will build the needed refineries of these reservoirs.

Condensate

Based on the latest plans of Iran's ministry of petroleum, which have yet to be finalized, bulk of the condensate produced by NIGC will be allocated to petrochemical complexes and oil refining companies.

Pressure-Boosting Stations & Pipelines Maintenance Centers

Construction of national and provincial pipelines necessitates building of pressure-boosting stations as well as maintenance yards. A total of 140 pressure-boosting stations are foreseen to be built during the four Development Plans that make up the 20-year Gas Prospects of the country.

Natural Gas Import

Following table represents the plan to import natural gas from Turkmenistan, as per the contracts signed so far. In addition, based on a swap deal signed with Azerbaijan, some 1.2 mcm/d of Azeri gas will be imported in lieu of exporting some 1 mcm/d of Iran's gas to Nakhjeavan.

Table below provides list of facilities foreseen to be needed for expansion of Iran's gas industry by 2025

Facilities	4th Plan	5th Plan	6th Plan	7th Plan	Prospect
New/Alternative Country-wide Trunk Gas pipelines	IGAT 4,6,7,8&9	IGAT 7,9&10	IGAT 10,11	IGAT 11,12	----
Length of 56" Pipelines (km)	3433	2575	2150	2100	10258
Length of National Pipelines (km)	8342	6257	5225	5103	24937
Length of Provincial Pipelines	9010	6758	5642	5511	26921
Pressure-Boosting Station (unit)	35	40	35	30	140
Maintenance Yard (unit)	10	5	8	8	31
Refining (mcm/d)*	120	118	102	75	415
Storage	15	20	30	35	100
Distribution Network (Number of Extensions)	1.8 Mln	1.8 Mln	1.8 Mln	1.75 Mln	7.15 Mln

*The capacity of South Pars refineries is not included.

Year	Import Volume (mcm/d)*
Year ending March 2006	14.2
Year ending March 2007	19.1
Year ending March 2008	21.9
Year ending March 2009	21.9
Year ending March 2010	21.9
Year ending March 2011	21.9
Year ending March 2012	21.9
Year ending March 2013	21.9
Year ending March 2014	21.9
Year ending March 2015	21.9
Year ending March 2020	21.9
Year ending March 2025	21.9

*Raising Iran's natural gas import from Turkmenistan to around 14 Bln Cubic Meters a year, from early 2008, is being examined.

Source: IIES Periodical, No.5, Fall 2006.

The Iran-India-Pakistan Pipeline Challenges and Opportunities



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1.0 Introduction

We have a great deal of respect and love for the people of India and Pakistan. We look upon them as our own people. We are very interested in this pipeline being constructed... We want this pipeline to be the pipeline of brotherhood and peace'.

"To strengthen our efforts for peace we seek to actively promote projects that are vital to the economic development of the region The Iran-India-Pakistan Gas Pipeline is such a project that is of utmost importance to

the growing energy needs of both Pakistan and India".

"if this [the IPIP Pipeline project] is a project which will enhance India's energy security. If it is a project which is going to be economical from India's point of view, certainly, it would [be] in our national interest and we would go ahead with it".

"As far as the extension of the Iran-India gas pipeline to China is concerned, Beijing does not have any political problem with it, finding it a very good idea".

The aim of this study is to shed light on the Iran-

Pakistan-India Pipeline (IPI Pipeline) and the content of this is preliminary findings of a research project leading up to a Master Thesis at the University of Oslo. The planning of the pipeline project started in the late 1980s. In the time of writing, more than 15 years later, concrete results have still not been seen. However, the IPI Pipeline has once again come into focus. During the last few months, officials from Iran, Pakistan, India —and China — have made a large number of statements related to the pipeline and the topic has been given great attention in the media. In this report, I will look closely at the three following questions: What was the background for the IPI Pipeline project? Why has so much time passed without the project being completed? What are the chances for the project to materialise and how?

The IPI Pipeline has a potentially great impact on Asia's future. Iran, with its 16 % share of the world's proven gas reserves, needs to export its gas and the Asian market is knocking on its door. Asia is developing with enormous speed and gasping for more and more energy supplies to keep the machinery going. Pipelines are the most reasonable way to transport gas. A finalised IPI Pipeline will affect the whole region in a fruitful way, which is why it is so important. Much is written and said about the global hunt for energy supplies as the 'New Great Game' and how energy security can be and has been a source of future conflicts. However, energy security can equally be a source of cooperation. This pipeline can contribute in building bridges between former enemies like India and Pakistan, hence its nickname the 'Peace Pipeline'.

My paper is organised in the following manner: Initially, in part two, I will account for the background for the IPI Pipeline. This will, in turn, be followed by a section with a discussion of different challenges that, until now, have hindered the realisation of the project. In part four, an analysis will be made as to the chances of the project's materialisation. Finally, in part five, I will draw together the discussion and give an overall and tentative assessment of the IPI Pipeline project for further research purposes.

2.0 The Background of the IPI Pipeline

The IPI Pipeline must be analysed within the broader context of Asia's economical development. The economies of countries like India, Pakistan and China are growing with a high speed. This incredible rate of growth is unsustainable without an adequate input of energy, in which all three above-mentioned

countries have or will have a shortage. China's energy consumption is expected to double within 2020. India and Pakistan are heading in the same direction. Politicians, researchers and others have brought the topic of energy security into focus. Stein Tønnesson defines energy security as "a sound balance between energy supply and demand serving the purpose of facilitating sustainable economic and social development". He goes on to define 'balance' as "the relationship between the overall amount of supply and demand, and the fit between a variety of energy sources and a complex set of needs". In line with the above-sketched development, energy security has become one of the first priorities on the political agenda of China, India and Pakistan.

South and East Asian leaders have shown great interest in signing contracts with Middle Eastern countries that are rich in energy resources. Iran is the first runner up in the world when it comes to oil and gas resources. Accordingly, the country is a very attractive cooperation partner in the field of energy. Iran has developed an energy exporting policy which 'looks towards the East'. China is already buying 60 % of its total oil import from the Persian Gulf, a percentage that is expected to reach 80 % within 2010. In October 2004, China's state controlled oil company Sinopec and the National Iranian Oil Company signed Iran's biggest deal ever worth 100 billion USD. Iran signed on to supply China with liquefied natural gas (LNG) for 25 years, getting Chinese capital and technology in return. India also put its stake in long-term cooperation with Iran when Indian Oil Corporation in June 2005 signed an LNG deal with the National Iranian Gas Exporting Company, which would supply India with gas for 25 years starting in 2009-2010. At the time of writing, Pakistan and India are trying to cut a deal on a natural gas pipeline from the South Pars field in southern Iran through Baluchistan in Pakistan, all the way to India. This pipeline could even be prolonged to China. The Russian gas company Gazprom has showed interest in supporting the IPI Pipeline project financially and technologic ally. Due to sky-high prices on energy, Russian companies like Gazprom have accumulated large revenues because of their country's vast gas reserves. To increase their income, these companies wish to invest their surplus outside of Russia in countries with big oil and gas reserves. Russian involvement in countries like Algeria and Iran can also help Russia coordinate its energy policies with these energy rich countries.

The idea of the pipeline grew out of several plans to transport gas from the Arab Peninsula to the Asian

market in the late 1980s. One idea was to transport gas from Qatar through Iran to Pakistan, through the proposed (Persian) Gulf South Asia Pipeline (GUSA), where an MoU was signed between Pakistan and Qatar in 1991. It has always been a challenge for Qatar, a country that is one of the world's biggest gas producers, to transport its gas out of the country. Qatar has two ways of transporting gas, either by tank ships or by pipelines. The second solution is preferable, considering the high expenses and risks of tank ship transport. The easiest way to transport gas from Qatar to the Asian market would be to build a pipeline under the Persian Gulf to Iran and eastbound from that point. The Persian Gulf is only 200-300 metres deep, which makes it ideal for building pipelines. Qatar could have an alternative route for a pipeline through the UAE to Oman and further from the sultanate under the Arabian Ocean to Pakistan. However, two factors made the construction of such a pipeline difficult and put the project on hold. The first factor is that Saudi Arabia owns a little piece of land between Qatar and the UAE. No pipeline through Saudi Arabia will be built as long as the relationship between Saudi Arabia and Qatar remains tense. Disputes between Saudi Arabia's al-Saud family and Qatar's al-Thani family started as quarrels at the border between the two countries in the 1990s. The second factor is that the ocean areas outside the Strait of Hormuz have depths down to 1800 metres. The pressure on such a level of depth would make building a pipeline difficult, even with high range technology. According to the Pakistani government's web site, the GUSA project now "remains under active consideration". The Pakistani government was also interested in building a pipeline from Oman to Pakistan through Iran, but the project was found to be neither financially nor technically feasible. Iran brought up the idea of prolonging the pipeline from Pakistan to India to the Pakistani government first under former Prime Minister Benazir Bhutto and later Nawaz Sharif. Under the government of Sharif, an IPI Pipeline extension to India was considered and ideas of prolonging the pipeline all the way to China were also put forward, something that may reflect the historically close relations between Pakistan and China. Nevertheless, in the mid-1990s, several factors prevented the realisation of the project. Sharif lost power in Pakistan in 1993 and Sheikh Khalifa lost the throne to his son Hamad in 1995, losing two central actors in the project and therefore putting it on hold. However, Iran's vast gas reserves still allowed the possibility of transporting gas from Iran to Pakistan and India. A preliminary deal of building a pipeline

from Iran to Pakistan was signed in 1995. This deal met with its own problems when, at the end of the 1990s, the relationship between Pakistan and India came to a freezing point. In 1998, both countries carried out rounds of nuclear bomb tests and in 1999, the Kargil conflict broke out. An alternative for India that was discussed was to build a pipeline from Iran to India going under the Arabic Ocean to bypass Pakistan. However, the lack of adequate technology would not allow such a pipeline to be realised. Negotiations have been revived and all three countries have declared their intention to realise the IPI Pipeline project. Meetings between the three parties are held regularly. The plan is to transport about 110-130 million standard cubic metres per day (mmscmd) through the IPI Pipeline. Of the total, about 25% is planned for Iran's domestic use, about 25% to Pakistan, while India gets about 50%. The length of the IPI Pipeline is planned to reach 2600 kilometres and the project is estimated to cost about 7.5 billion USD. The pipeline is proposed to take the specific route of Assaluyeh-Khuzdar-Multan-New Delhi so that a parallel pipeline can be built along it in case the demand rises. Pakistan has already requested larger amounts of gas. It is estimated that Pakistan will receive 500-600 million USD per annum in transition fees from India. Iran, Pakistan and India have all described a prospective realisation of the IPI Pipeline as a situation where all parties win: Iran can sell its gas and obtain large amounts of revenues; Pakistan will get income in the form of transition fees and more energy to help maintain growth; and India will import large amounts of energy. If this energy cooperation deal goes through, Pakistan and India will have a unique opportunity to enhance their relations, and speed up the on-going India-Pakistan peace process. Finally, yet importantly, gas causes much less damage to the environment than resources like oil and coal, and the IPI Pipeline could accordingly have a positive impact on the environment in the region. In sum, an eventual realisation of this pipeline could lead to better economical and environmental conditions in the region as well as groom cooperation.

Map 2.1 Iran-Pakistan-India Pipeline Route

3.0 Challenges along the Road

The planning of the IPI Pipeline project is well on its way, but there are still a number of challenges to face and overcome before the project can be realised. Five challenges will be identified and discussed in this paper: the uneasy relationship between India and Pakistan; the potential danger of Baluch militia

groups and their intentions for pipeline sabotage in Baluchistan; the pricing issue; the on-going internal gas export debate between the Majlis (the Iranian Parliament) and the Iranian Ministry of Petroleum; and the United States' wish to prevent the IPI Pipeline from coming true due to fear of losing its hegemonic role and influence in the region.

3.1 The Pakistan-India Conflict

For a long time, pipeline cooperation between India and Pakistan was unlikely, but both countries now seem tempted by the economic benefits and have tentatively agreed upon cooperation on the WI pipeline project. A Joint Working Group (JWG) has been set up with representatives from the three countries involved in the project. This is the first time Pakistan and India are cooperating with each other and a third party. The two countries have been rivals ever since their partition in 1947, because of religion and history. There has been a long-running conflict between them over the states of Kashmir and Jammu. Both, India and Pakistan, have nuclear weapons and have been engaged in a race for nuclear power. The Kargil conflict in Kashmir escalated in 1999. India has made several demands in the IPI Pipeline project as attempts to improve the security around the IPI Pipeline. An Indian official interviewed has expressed doubt regarding how much a pipeline can contribute to peace. However, according to Pakistani officials, a realisation of the IPI project will forever improve the relationship between India and Pakistan and speed up the ongoing peace process.

3.2 The Baluch Militia Problem

The second threat that may halt the realisation of the IPI project is that of the militia groups in the Pakistani province of Baluchistan. There are several activist groups in the area. The three most influential are said to be the Baluch Liberation Army, the Baluch Liberation Front and the People's Liberation Army. These groups have roots in ancient tribe structures. Baluchistan makes up about 43% of the land area of Pakistan, but is sparsely populated. The province is rich in gas and holds 36% of Pakistan's total gas production, but is still the least developed area in Pakistan. Other resources found in the province are aluminium, platinum, silver, gold, copper, coal and uranium. The Chinese supported Port Gwadar is being built in Gwadar in Baluchistan, which the Pakistani government looks upon as a gateway to the 'outside world'. Pakistan implements its nuclear bomb testing in the province, as well. Among other pipelines, the domestic Sui gas pipeline goes out from Baluchistan and the IPI Pipeline is planned to cross the area,

too. Hence, Baluchistan is both economically and strategically important for the Pakistani government and China, as well.

Nevertheless, out of Baluchistan's total gas production, the province itself consumes only 17% and for supplying the gas, the Pakistani government gives Baluchistan 12.4% of the total gas production income. Members of Baluch activist groups claim that injustice is being brought upon them by the 'Punjabi dominated' Pakistani government. In the last two years, these groups, in particular the Baluch Liberation Army, occasionally have sabotaged the Sui pipeline as well as other power facilities and railway tracks. Chinese workers building Port Owadar have been attacked by the militia and in May 2003, three Chinese engineers were killed in a bomb blast. There are fears that the Baluch militia might attempt to sabotage the IPI Pipeline, as well.

3.3 The Gas Pricing Issue

The third problem is the gas pricing issue. Iran on the one hand and Pakistan and India on the other, have still not agreed on the price of the gas. In August 2006, India made an offer of 4.25 USD per million British thermal units (per mBTU). However, at the same time, Iran said that the price should be set by 'global standards' at 7.20 USD per mBTU. In mid-September 2006, the Iranians raised their gas price to 8.25 USD per mBTU and Pakistan and India gave an offer of 4.50 USD per mBTU. Since India has a low and perhaps subsidized domestic gas price, the country is accustomed to buying its gas only in the low price range. Iran has stated that the country does not want to sell under priced gas to India and Pakistan. Pakistan has raised its domestic gas price every three months in 2005-2006, thereby doubling the gas price in one year, apparently making it considerably much higher than India's domestic gas price. The reason for Pakistan's gas price increase is most probably the country's fast-approaching gas shortage. Pakistan's gas fields are expected to dry up by 2010. According to a Pakistani official, a higher domestic Pakistani gas price may be closer to the gas price requested by Iran and make it easier for Iran to offer a reasonable price to Pakistan. The official adds that the country is expecting to get a good gas price offer from Iran. On the other hand, an Indian official said that Pakistan just reached India's gas price levels in September 2006, a fact that emphasises the insecurity and confusion around the two countries' views on the gas pricing issue.

Iran, Pakistan and India have all agreed upon using an independent council to set a price on the gas, and the British/American company Gaffney, Cline

& Associates has been appointed. In August 2006, Iran's Deputy Petroleum Minister in International Affairs, Mr. Hadi Nejad Hosseinian, said that the appointed council would use Japan's market gas price as a baseline to calculate the Iranian gas price. According to the Iranian Ministry of Petroleum, much is dependent upon what price the consulting company Gaffney, Cline and Associates recommends. If the price calculated is closer to the suggested Indian and Pakistani price offer, the Iranian government has to lower its price, and if the price calculated is closer to the Iranian price suggestion, India and Pakistan will have to raise their offer. India fears that the price will be 60% higher than what is realistic for the country. In the beginning of September 2006, the pricing mechanism had still not been finalized, but a new issue came into light: As mentioned above, the Indian Oil Corporation and the National Iranian Gas Exporting Company signed a long-term liquefied natural gas deal in June 2005, which would supply India with gas for 25 years starting in 2009-2010. However, Iran raised the gas price for India after the deal was signed. India might hesitate to implement the deal because such an unexpected price increase is not a part of its contracting policies. In mid-September 2006, the Indian Oil Minister said, "delays in the LNG Contract will impede the execution of the Peace Pipeline".

3.4 Technocrats versus Politicians

A fourth challenge is an on-going debate between the Iranian Ministry of Petroleum and the Majlis' Energy Committee, in other words technocrats versus politicians. The debate is on whether Iran should export its gas or not and how much it can export. The technocrat, Narsi Ghorban, Director of NarKangan International Gas to Liquid Company, made a statement saying "I believe that although Iran, with the current proven gas reserves, cannot be indifferent to LNG exports in future, the priority should be given to gas injection, domestic use, gas-based industries including GTL [gas to liquid], and export by pipelines to the Indian subcontinent and Europe." On the other hand, a rising number of politicians in the parliament agree only on the first two, which are gas re-injection and domestic use of gas, and argue that these two ways of using gas should be given priority.

Gas re-injection into old oil field leads to release of more oil with the proportion 300 cu ms of gas to 1 barrel of oil, and most of the gas would be recovered in the long term with the production of oil. On the other hand, technocrats who want to export gas say that the gas price has risen dramatically, and exports will improve the economy. There is a limit for the amount of gas

that can be re-injected into old oil fields, and pro-export technocrats argue that Iran can utilise less than 40% of its reserves in the coming 25 years. The technocrats emphasise that gas export will strengthen Iran's role in the region, as well as improving the economy. According to an Iran-based energy consultant, Iran is now in favour of selling its gas. Deputy Minister Mr. Nejad Hosseinian has travelled extensively trying to promote Iran's gas export internationally. According to an energy consultant, Iran wants to export as much gas as possible because it is not able to use all of the gas for itself.

3.5 US Struggle for Hegemony

The fifth challenge is the US and its fear of losing influence in the region. The US has warned India and Pakistan against cooperating with 'terrorist states' such as Iran. In March 2006, George W. Bush expressed his understanding for the two countries, Pakistan and India's, growing needs for energy, but shortly after re-confirmed his opposition to the IPI Pipeline. The Bush Administration then offered India to build nuclear power plants to meet the country's future energy needs. Washington has also been accused of trying to hinder Pakistan from joining the IPI Pipeline project by giving Pakistan an amount of yearly 'aid' and agreeing to sell the country F-16 war planes. US Secretary of State Ms. Condoleezza Rice stated to the Senate Relations Committee in April 2006 that "the cause of the behaviour of Iran concerning the entire international community about what its intentions are to ward a nuclear programme, the unreliability of that Iranian oil and gas supply has got to be taken into account". Ms. Rice also stated that the US' nuclear deal with India was motivated by a desire to weaken any reliance on Iran, commenting: "While I can't tell you that, if India has access to civil nuclear, they are going to forgo other relationships, it does give them, in many ways, a better option for a more reliable energy supply than being dependent on states that, from time to time, brandish the oil and gas weapon when they don't like the behaviour of other states". The Bush Administration claims that it is planning to build a pipeline from Central Asia to India, the Turkmenistan-Afghanistan-Pakistan-India (TAP(I)) Pipeline, and argues that it will not accept the completion of the rival IPI Pipeline. There are some indications that the pipeline project suggested by the US is not feasible. Nevertheless, even if the USA-supported (TAP(I)) Pipeline turns out to be feasible, it can most likely only be an addendum to the IPI Pipeline and not a substitute.

For the time being the UN Security Council is

debating whether to impose sanctions on Iran if the country does not suspend its uranium enrichment. It is clear that the Bush Administration intends to isolate Iran economically and strategically in the region, and that is why they are warning India and Pakistan from signing the IPI Pipeline deal with Iran. The only reason, however, is not that USA finds Iran to be a 'terrorist state'. Energy security is one of the US' reasons to prevent the project. It is known that the US considers China as a potential rival in the 'New Great Game'. As mentioned before, ideas of extending the IPI Pipeline to China have been brought to the table. India is also a potential competitor of the US over global energy supply, and the Russian Gazprom has lately shown interest to take part in the IPI Pipeline project. President Vladimir Putin announced in June 2006 that "Gazprom is ready to support the construction of a gas pipeline from Iran to Pakistan and India with financial resources and technology". The Bush Administration seems frightened by the possibility of closer energy cooperation between Iran, Pakistan, India, China and Russia through implementing the IPI Pipeline project and these countries' potential energy hegemony in the region. Russia and China, in addition to some central Asian countries, already have a tight cooperation in the Shanghai Cooperation Organisation (SCO), and Iran, which is interested in full membership, has been invited to be an observer in SCO.

4.0 The Road Ahead

Having looked at the complex challenges of the IPI Pipeline it is important to look at the opportunities waiting on the other side of the bridge, as well. One of four different scenarios can be expected to occur after the IPI Pipeline decision-making process is over. The first scenario emerges if Iran's negotiations with Pakistan and India fail. In this case, the IPI Pipeline may be limited to a domestic Iranian pipeline, which would still be profitable for Iran. In scenario two, India backs out of the pipeline deal due to differences with Iran on the gas price and/or pressure from Washington. In this case, Iran sends its gas to Pakistan through an Iran-Pakistan Pipeline. The third scenario is gas sent from Iran all the way to India, which might materialise if negotiations are successful. A prospective completion of scenario three could lead to a fourth scenario in the future, which is to extend the pipeline from India further on to the province of Yunnan in China.

4.1 A Domestic Iranian Pipeline

At the time of writing, the gas pricing issue is the most current challenge to the IPI Pipeline project. Other factors that could complicate the negotiations around

the project would be a sudden additional increase in the gas price, sanctions on Iran implemented by the UNSC and/or an American/Israeli military attack on Iran.

However, in a scenario where negotiations between Iran, Pakistan, and India fail, Iran can still use the gas for itself. The route the pipeline is supposed to take goes through 70% of Iran's less developed areas. In this scenario the pipeline is built, at least within Iran's borders. This will lead to more jobs and better infrastructure in big parts of Iran's most needy areas.

4.2 A Pipeline from Iran to Pakistan

As mentioned in part three, the US has been trying to hinder India and Pakistan from going ahead with the IPI Pipeline. India has signed a nuclear energy deal with the US, which is very important for the country's future. Even if solutions are found to the problems surrounding the IPI Pipeline project, especially the gas pricing issue, there is still a danger that India will give in to pressures from the US. India seems more reluctant when it comes to implementing the IPI Pipeline project than Pakistan. Indian official statements have emphasised that whether the government goes ahead with the IPI Pipeline project or not is solely its own decision. However, at the same time, the country has indicated that it has its doubts and is aware of the risks involved with implementing the project. In a scenario where India backs out of the pipeline deal, Iran still has the possibility to sign a contract with Pakistan. Pakistani officials have stated that Pakistan intends to build the pipeline with or without India. As other countries with a growing economy and energy security on the agenda, there is a very strong interest in Islamabad to secure the gas supply for the near and far future. Pakistan's gas reserves are drying up and a materialisation of the IPI Pipeline is the easiest way to approach the country's goal of energy security.

4.3 A Pipeline from Iran via Pakistan to India

Iran, Pakistan and India have all declared their willingness to materialise the IPI Pipeline project. Good intentions, however, may not be enough. The gap between the Indian and Pakistani price offering and that of Iran is still quite large. Iran also has the option of sending its gas towards the West, where there would be less substantial pricing issue. Strategically, Iran might prefer to send its gas both to the East and the West, but there is a good market in India and Pakistan and the IPI Pipeline could help enhance Iran's role in the region. At the time of writing, much is dependant upon the price calculation of Gaffney, Cline & Associates. This coupled with India, Pakistan, and Iran's willingness and capability upon price flexibility

will play a role in the fate of the WI Pipeline project. Furthermore, India and Pakistan have a long way to go before they can reconcile. Even though the official statements say that India is past its worries of the IPI Pipeline gas flowing through Pakistan, the two countries still do not have a relationship of mutual trust. For India to go ahead with the IPI Pipeline project with Pakistan, an adequate amount of security guarantees is crucial. If given, it will most probably be in India's best interest to go ahead with the pipeline, considering the country's gasping need for energy. Furthermore, it seems that the Bush Administration will do whatever it can to hinder the IPI Pipeline from being materialised. The US congress, from October 2006, launched a new set of sanctions on Iran called the Iran Freedom Support Act (IFSA-sanctions), which originated as a prolonging of the ILSA-sanctions from 1996. The IFSA-sanctions are specifically aimed towards investing in Iran and towards any country that is assisting the Iranian nuclear program. This is why it may become more difficult for India, Pakistan, and any other country to join the IPI Pipeline project.

4.4 A Pipeline from Iran via Pakistan to India with an Extension to China

On February 2006, the Times of India wrote that "Centuries ago, the Yunan-India road was one of the old Chinese silk routes. In World War II, the British sent supplies to their ally Chang Kai Shek through the China road that ran from Indias north east into Burma and thence into Yunan. The same route could now carry gas". Whether the pipeline will be extended to China or not depends on how much gas Iran is willing to export. Looking at the 25-year LNG deal China signed with Iran, it seems like China is interested in long-term energy cooperation with Iran. Nevertheless, getting gas from the Persian Gulf to China is risky. Along the tank ship route from the Persian Gulf to the South China Sea, the narrow Straits of Hormuz and Malacca have to be crossed. If desired, these straits can be blocked due to a military blockade, terrorism etc. Pipelines are a safer transport alternative for China, hence China has been examining its alternatives for pipelines. There is already an oil pipeline going from Kazakhstan to China. However, to satisfy China's growing energy needs several pipeline alternatives should be examined by the government. An extension to China of the IPI Pipeline seems technically and financially difficult due to the long distance the pipeline would have to cover. China would have to get an actual offer from Iran to extend the pipeline further from India to China. Feasibility studies should be conducted on a prospective Iran- Pakistan-India-China

pipeline, prior to a decision of whether an extension to China is technically and financially viable or not. However, the Chinese ambassador in India, Sun Yuxi, has expressed that "as far as the extension of the Iran-India gas pipeline to China is concerned, Beijing does not have any political problem with it, finding it a very good idea." China has still not been formally asked to be a part of the gas pipeline project, but India's Minister of State for Planning, M. V. Rajashekharan said in April 2005, that, "once gas comes to India, the pipeline can extend itself to China". If an Iran-Pakistan-India-China gas pipeline becomes a fact, it could be the beginning of a historical cooperation in the region.

5.0 Conclusion

The IPI Pipeline, an initiative to export energy from the Persian Gulf to the energy-hungry Asian market, has many challenges to overcome before materialisation. The five briefly discussed challenges in this paper may still take years to overcome, if they ever do. It seems that India has difficulties trusting Pakistan as an energy partner, and that both, India and Pakistan, have problems facing Washington. These two seem to be the biggest challenges facing the IPI Pipeline project and the most difficult. Even if India and Pakistan have a common will to resolve their differences, they still have a long way to go in their peace process. The US has its own agenda of energy security and it seems that it, as well as Asia, want to take a bigger part in the oil and gas business of the Middle East. Materialisation of the IPI pipeline limited to a domestic Iranian pipeline is quite realistic. Pakistan seems eager to realise this gas pipeline and probably will, with or without India, if it is not stopped by the pricing issue or the US. If India withstands pressure from the US, gains a more trustful relationship with Pakistan and gets a good price offer from Iran, the IPI Pipeline project will have its chances of completion. As for extension of the WI Pipeline to China, there have still not been published reports on whether it is feasible or not, and prior to that, the pipeline construction from Iran to India has to start and Iran has to decide on how to use its gas. A realisation of the Iran-Pakistan-India Pipeline, or even an Iran-Pakistan-India-China Pipeline, would enhance Iran's geopolitical role in the world as an important energy supplier, as well as being the beginning of an historical good relationship and cooperation in the region, not seen since the times of the ancient Silk Road.



The future Iraqi Oil Industry: The International and Regional Role

Dr. Ebrahim M. Bahr Alolom — Iraq

11th Annual International IIES Oil and Gas Forum

Entitled "New developments in world oil and gas: challenges and opportunities"

I am greatly pleased to participate in this conference and my speech today will focus on the future of the Iraqi oil industry and the international and regional roles that exist within in.

As you recall, oil production in Iraq over the last twenty five years or so has suffered greatly from wars, lack of security and inefficiency of investment in production facilities. Efforts so far have been geared to raising production and export rates to the pre-war level and to attain the target of 3 mb/d of oil production and exports to over 2 mb/d by the early of the next year. As shown below the oil exported quantities during the three years are:

Second half 2003 190 mb

Year 2004 557 mb

Year 2005 507 mb

First half 2006 257 mb

The total Iraqi production capacity is now close to 2.5 mb/d. However because of the limitation on the northern pipelines, actual production is running right now at about

2.2 mb/d. The plan is to raise production by a further three hundred thousand in the next few months. This will bring total oil production capacity to about 2.8 mb/d. Oil export expectations for the next few months to rise from the current level of 1.65 mb/d to be in line with the expected increases in production especially from the south. The important obstacles in rehabilitating and developing the oil infrastructure are security and investment:

1. Security

Because of the security situation, Iraq did not restore the export capacities of the northern fields, which in 2002 amounted to 0.5 mb/d. This highlights the volume of Iraqi loss during the three years because of the terrorist operations targeting the northern organization.

The sector confronted more than 400 terrorist operations which caused a loss more than \$10 billion in addition to the loss of personnel. Terrorism focused on the oil infrastructure because of the fact that oil revenues

Opportunities and Limitations

The country's maximum refining capacity, consisting of 2 percent of world's capacity, is currently used to meet domestic requirements. In view of Iran's oil production capacity, geographical position, insufficient world refining capacity and also the existence of economic/trade free zones in the best geographical location in the edge of the Persian Gulf and the Oman Sea, along with access to Central Asia's crude oils, a great potential exists for development of the country's refining capacity for export purposes by using foreign investments.

Of course, it should be noted that renovation and modification of existing refineries and improving refineries' efficiencies will be given priority compared to building new refineries for meeting increasingly domestic consumption which is mainly based on light middle-distillate products. There are 9 refineries spread in different parts of the country from Tabriz in the furthest north to Lavan in the furthest south. These refineries were designed and built in different decades based on available technologies at the time of their construction. At present the refineries' average efficiencies are not very desirable but their available infrastructure is very large. Therefore, the best opportunity exists for renovating the refineries and equipping them with latest technologies with the cooperation of foreign companies.

The country's refining industry enjoys very high engineering, operational and particularly maintenance capabilities. The pressures incurred during the Iraqi imposed war against Iran caused improvement of this capability at the highest level. Some of the country's refineries were attacked more than 17 times by the enemy during the war but thanks to the efforts of its talented manpower, they were repaired in the minimum possible time. The domestic engineering capability and experiences in this sector were elevated through the widespread presence of Iranian companies and experts during the construction of two giant refineries of Arak and Bandar Abbas immediately after the end of the war in the years 1990 and 1991 respectively. If more attention to the downstream sector would be paid afterwards and during the past eight years and the ground would be paved for cooperation with foreign companies, perhaps the country could easily succeed in exporting technical services in this sector. The experts of regional countries expressed their surprise at the expertise and experiences of the Iranians during the conference of the refining experts of ECO countries which was convened in the Isfahan Refinery a few years ago. But it is never too late and if this capability and experience is mixed with the capabilities and experiences of other countries in the world particularly in the area of refinery design and

new refining technologies; no doubt it will have positive benefits both for Iran and the world.

Renovation and Optimization

Optimizing fuel consumption in all commercial, economical and industrial sectors of Iran is an undeniable necessity. In this respect, the industries producing energy carriers not only have a significant potential for energy saving and optimizing but should also be an example and ahead of the others. More importantly, despite unsuitable prices of the energy carriers inside the country, the economical achievements gained by optimizing and saving energy consumption would be very transparent and clear for those industries and especially the refineries. The refineries must take immediate action in order to control the level of their fuel and wastes. Some studies have also been conducted in these areas in the past. Thus, the employment of new technologies with the assistance of reliable international companies can be one of the suitable areas for cooperation.

Optimization of fuel consumption in the cars and other equipment, facilities and processes consuming oil products, not only necessitates upgrading of such facilities but necessitates improving the fuel quality as well. This is another mission that should be tackled by the refining industry which in turn provides another ground for cooperation with foreign companies. Middle-distillate products produced in Iran must be able to meet the new standards set by advanced industrial countries with regard to quality and desirability. The current large gap in this area should be reduced.

At present, heavier products and lateral refinery products in Iran such as different types of bitumen, oils, etc. have limited diversification. Investment opportunities and desirable commercial atmosphere exist for diversification of these products in line with growing needs of interested companies and customers.

Another issue to be noted is that the refineries should have the flexibility to absorb all types of crude oil. In view of the change in the composition of the country's produced crude oils with respect to the time of the design, all the available refineries should be prepared to have the necessary flexibility in order to be able to process all types of crude oils. This would also increase the flexibility with respect to the country's crude oil export.

Decentralization

The downstream sector especially the crude oil refining industry is the most suitable sector of the Iranian oil industry for privatization. The differences of view points regarding private sector participation in this industry is at its lowest level. In principal, privatization

form approximately 95% of the federal budget. However, the southern regions did not record any terrorist incidents hampering production and export operations during the two years so, we may consider it relatively a safe area.

2. Investment

Of the approximately \$5 billion allocated to the Oil sector in 2005 and 2006, only about \$2 billion was of great use. One of the main reasons for this has been the delays and the withholding of many of the global companies and contractors to participate in the tendering process as well as the added problem of the slowness and weakness of the banking and financial procedures and the mediocre administrative experience.

Investment in the oil sector

The oil production plan set by the Ministry to reach a capacity from 5-6 million barrel daily in year 2012 from existing oil fields and the partial and undeveloped fields. To sustain oil production capacity, a comprehensive exploration plan in the western desert and the Iraqi Kurdistan region and the other governorates is necessary.

Also, we need to invest in the refinery oil sector by increasing the refining capacities up to a 1 mb/d where Iraq is currently suffering from sharp shortages in the oil products which affects about 50% of its needs thus obliging Iraq to import 500,000 tons of oil products per month from the neighbored countries. On the other hand, investment in the utilization of gas is necessary to produce the liquid and dry gas and other products. The investment in product distribution sector to build a new sophisticated petrol stations and to increase the storage capacities and others is required.

The investment projects in the oil sector in both upstream and downstream need significant investments and the local funds allocated to the oil sector remain insufficient.

Investors are hesitant to invest in the oil sector due the security situation despite the better security situations in the south where most of the oil industry located. The Ministry of Oil is seeking to set legislations relating to both areas. One of the important steps is to encourage the private sector to invest in the downstream area and to end the state monopoly.

The Iraqi Parliament endorsed the law allowing the private sector to import the oil products and store them, transport and sell it with the commercial price and also building petrol stations. Regulations and instructions to allow the private sector to build refineries are currently being discussed in the cabinet.

In the upstream area, the ministerial economic

committee is devoted to end its discussion to draft Iraqi Oil and Gas law to be submitted to the cabinet and expecting to be presented to parliament on the first New Year. This will clearly determine the Ministry role with handing the operational responsibility of the upstream activities to the National Iraqi Oil company. These steps are necessary to provide the legal legislations to safeguard the investment.

No Development without Security

Iraq is one of largest oil exporters in the region and has the potential to double and treble oil production in the years to come, so Iraq welcomes all efforts exerted by the governments and companies in assisting it in reconstruction process and no doubts that these efforts will meet with all efforts to provide a cost-effective source for energy.

The process of reconstructing Iraq requires progress in the security and political process. Iraqi people during the past three years have achieved great gains in the political process however the continuation of violence and terrorism cycle have seen the Iraqi people pay heavy consequences and this will continue unless an exerted effort is made from all parties to confront the terrorism and violence.

Iraq stability will not be favorable only to Iraqi people but to all regional countries and the international community and the challenge we face today is how to be able to make Iraq an arena to converge all interests instead of being an area of conflict. Iraq is a vital bridge in the region with its economical and political weight and when empowering these potentials on the right track through balanced relations and the peaceful coexistence with its neighbors and the international community on the basis of mutual interest which will become the strategic option and the compass to guide us for the stability and prosperity.

Without all this Iraq will be turned to a country of chaos and be subjected to inference in its own affairs generating aggression in the region.

The Gulf area has suffered during the past decades from wars and destruction due to the dictatorship regime in Iraq and all should work collectively to support and protect the political process in Iraq.

Energy Sector as Gate to Partnership

The realization of the economical partnership between Iraq and regional countries is considered the right way to improve the security in the region due to common interests. Agreements among the countries and the energy sector will play an important role to approach these interests considering it the main source all counting on it.



To rely on energy as a strategic policy to integrate among the country regions will open new horizons in other economical areas and will impose its agenda on stability and reduce the political dangers and improve the security conditions.

Iraq is one of the key states in the region in oil discovery and production but currently is considered the weakest link in the oil industry and electricity power comparing to its neighbors despite its enormous potential. Iraq faces crises one after another. We should invest in co-operating with neighbors in a vital and serious way with an integrated scientific programs in all regions and all levels.

We have started to discuss the core of this vital strategic plan after the removal of the regime directly and we paid visits to all neighbor countries surrounding Iraq starting from Iran, Kuwait, Saudi Arabia, Jordan, Syria and Turkish in addition to Qatar and Oman. This program concentrate in searching the possibilities of:

1. Exporting Iraqi oil across neighboring countries ports.
2. Supplying Iraqi oil and gas to some neighbors countries.
3. Providing the Iraqi oil sector with its requirements of materials, spare parts by opening Iraqi offices.
4. Provide Iraq with training opportunities and scholarships.
5. To provide effective mechanisms of unitization of the common oil producing fields and the undeveloped ones, in addition to exchange information of the potential geological structure between Iraq and its neighbors.
6. Importing oil products and LPG from the neighbored

countries.

7. Linking the gas networks to meet needs.
8. Cooperation in the electricity energy field.
9. Studying the possibility of establishing common projects especially in gas utilization area.
10. To benefit from the legal, administrative and technical experiences in regional NOC.
11. Cooperation in the OPEC and the international energy forums to aim the stability of the oil market.

In the same course, the relation with the known international oil companies should be improved and already many memorandum of understanding have been signed by the Ministry of Oil during the last two years especially with the well known companies of Chevron Texaco, Shell, Total, ExxonMobil, Lukoil, Eni and other Japanese and Chinese companies aim to provide technical consultations, training opportunities and scholarships. A steering committees have been established in this regard and its meeting is still continuing and fruitful.

I'm confident that efforts from regional countries and the international community to push all parties to open an international regional dialogue to understand the Iraqi situation will open a wide horizon to improve the security situation, progress of the political process, building partnerships to rehabilitate and develop the Iraqi oil industry is a key step to confronting terrorism and stabilizing the oil market.

There will be opportunities for international oil companies and regional countries co-operate with Iraq to invest in no less than 30 billion US Dollar through the coming years, which will contribute to the prosperity, stability and ultimately well-being of the region.

Decree of the Council of Ministers on Permanent Permissibility of the Goods Produced in the Free Zones into the Mainland

In its session held on 23-6-1373, (14-9-1994) the Council of Ministers, upon proposal made by the Ministry of Commerce and the Secretariat of the High Council of Free Zones and involving the provisions of Article (23) of the Law on Export-Import Regulations as ratified in 1373, approved the following text as a note is added to Article (8) of the By-Law of the Law on Export-Import Regulations

Note

The importation of the goods produced in the

Free Trade-Industrial Zones shall not be subject to unauthorized condition in the following cases

(1) in cases where the condition of the importation of the products of the industry was authorized at the time of establishment of industry in a Free Zone; (2) in other cases where the aggregate value added and the raw materials used in producing the goods exceeds sixty (60) percent, upon confirmation by the committee subject of Article (1) of the By-Law.

Decree On Specific Facilities Determined for Entry Of Goods, Produced In Special Economic Zones, To Other Parts of The Mainland

1- Importation of some percentage of goods, produced in the Especial Economic Zones and the Zones subject to the paragraph "D" of the note 25 of the Law on Second Economic, Social and Cultural Development Plan of I.R. of Iran, into the country is allowed. The amount of the goods permitted into the mainland shall be a ratio of total added value plus materials and domestically produced parts used in the products, to the total cost price of the produced goods regardless of any manner of restriction. In addition to that, it shall neither obligate order registration and letter of credit opening, nor it is subject to conditional principles o "NOT ALLOWED AND CONDITIONALLY ALLOWED".

2- The above ratio, mentioned in paragraph 1 of present decree shall be fixed by a commission consisting of the representatives of the ministry relevant to production of the goods envisaged for, the Ministry of Commerce, Central Bank of I.R. of Iran, Iran's Customs, secretariat of The High Council of

Free Trade and Industrial Zones and the pertinent Free Zone, which shall be convened in the Secretariat of the High Council of Free Trade and Industrial Zones.

Note

Procedure for calculating the percentage of permissible amount of goods, mentioned in paragraph (1) of present decree shall be as follows:

The price of the goods to he produced shall consist of the CIF price of imported goods plus the imported parts and materials.

Note

In all cases, the decision of the commission subject to this paragraph shall be taken on the basis of the majority of votes.

3. The Iranian Customs shall fix the annual permissible quota of the production amount of each manufacturing unit upon the discretion of the commission subject to paragraph (2) of present decree.

$$\frac{\text{Percentage of Permissible amount of goods}}{= \frac{\text{Price of goods — CIF price of imported material and parts}}{\text{price of goods}}}$$

in this sector has begun several years ago. As a first step, oil and bitumen producing units in the refineries were ceded to the general insurance organizations as part of the government's debt during the Fourth Development Plan. The units are now managed by private companies and their shares are to be sold in the Stock Exchange. Whether this manner of privatization and separation of particular units from a refining complex that has been uniformly designed and constructed was logical, is another topic of discussion that should be investigated at its appropriate place. Undoubtedly, the trend and manner of privatization should be logical. However, the privatization process in this sector has begun anyhow. This issue also provides suitable opportunities for domestic and foreign investors. The managers of the downstream sector and refining industry can take advantage of this opportunity for presenting their policies in this area.

Development Projects

Different phases of South Pars Gas Field as well as many independent gas fields in the country are under development. When each one of these projects becomes operational, in addition to natural gas, a significant volume of condensate will be produced. Condensate is in fact a type of light crude oil that its direct export is not in the country's interest and considered to be as selling raw material. A part of these condensates are needed in the petrochemical industries. But, the volume of potential condensate production will be much higher than petrochemical requirements. The Oil Products Distribution and Refining Company (OPDRC) is also responsible for refining and using the condensate. This company has plans to construct at least one refinery with the capacity of 360,000 barrels of condensate (including three phases of 120,000 barrels) to be built possibly in the vicinity of Bandar Abbas Refinery. In addition, it is planned to construct two similar 120,000 barrels' refineries under supervision and control of (OPDRC) in the Qeshm Free Zone. Based on information, the responsibility for development of technology for extraction of middle-distillate products from natural gas (called GTL) has recently been entrusted to the said company. It would be beneficial that OPDRC implements this project in close cooperation with Petrochemical Company Ltd. as well as oil industry's research centers and especially the Research Institute of the Petroleum Industry (RIPI). This is because the technology has a great similarity with petrochemical processes from the process and technological point of view, although its products will ultimately be required by OPDRC. Also, its research aspects have not been completed yet. In conclusion, all the above points provide opportunities and various and

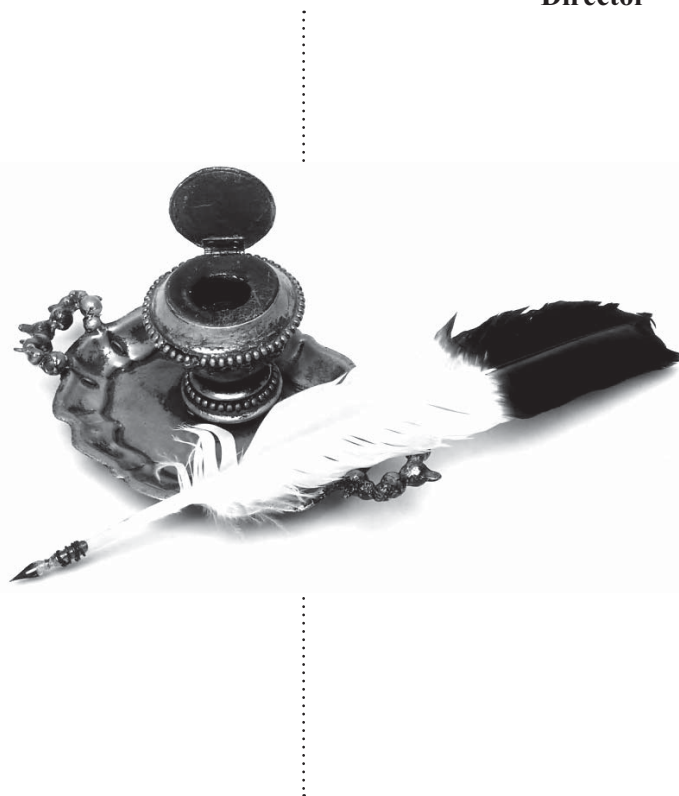
numerous areas for cooperation and joint domestic and foreign investments.

International Symposium as an Opportunity

During the past seventeen years and with the end of the imposed war and the start of reconstruction of different sectors in the petroleum industry, the upstream sector and petrochemical industries more or less cooperated with foreign oil companies based on new regulations and after a solitary period. But the downstream sector has so far enjoyed lesser opportunity in this regard. The holding of the First International Symposium on Oil Refining would be a valued opportunity to assist updating this important sector of the country's petroleum industry. The downstream sector and especially the country's refining industry should be freed from its day-to-day activities and lack of progress. It should be guided in the direction of change and development. Of course, it should not be expected to solve everything by holding a seminar. A seminar will be fruitful if it helps the process of structural and management reforms and especially elevates research and development and create the atmosphere for absorption of technology.

It is hoped that this seminar will be a starting point for transformation of different issues facing the country's downstream sector and guiding this important sector through more efficiency and innovation.

Director





OPEC; A Return to Power Era

The 143rd OPEC extraordinary conference was held in Abuja city, capital of Nigeria, upon invitation of the Nigerian government. Besides the organization's decision to reduce output by 500,000 barrels per day (bpd) from early February 2007, other developments occurred which attracted lesser attention.

It was more than 30 years that the Organization of Petroleum Exporting Countries (OPEC) had not accepted a new member. As a matter of fact, there was no new applicant for membership in the organization in those years. This was while the organization had lost two of its members in the 1990s, i.e. Ecuador and Gabon, which quit the organization's membership in 1992 and 1996 respectively. However, some countries officially applied for membership in OPEC in the Abuja conference. The ministerial conference accepted the official membership of Angola but postponed decisions regarding membership of Sudan and re-membership of Ecuador. Several requests for membership and acceptance of a country's membership after such a long period of time could be considered as an indication of regeneration and effectiveness of OPEC during the economic globalization period. In addition, in view of the unanimity mechanism, OPEC's

decision to admit a new member is also considered as a success indicating the solidarity existed between the organization's members. The unanimity mechanism has for years acted as a hindrance for attaining strategic and long term decisions by OPEC. This is owing to the fact that a member may not vote in favor of any strategic and long term decision if it is not completely in line with its own national interests. The acceptance of a new member is a strategic and long term decision. If similar to the circumstances prevailing in mid-1980s, drastic conflicts and serious groupings exist among members; it may be possible that each group considers accepting a new member having its particular national and oil positions, as a kind of attracting an ally for the opposite wing, thus, refusing to vote in favor of it. Therefore, unanimous decision by all members for admitting a new member indicates that conflicts and groupings inside the organization currently stands at its minimum historical level. This is also a proof of the organization's power.

During the past two decades, Angola has joined the group of oil-producing countries and its crude oil production and export has enjoyed considerable growth. Angola's average oil production has increased from only

280,000 bpd in 1986 to about 1.4 million bpd in 2006. A large part of development projects for the country's crude oil production is located in the deep ocean. With the hike in the world oil prices in the past years, the number of such projects has considerably increased. Thus, the increasing trend of Angola's oil production will continue in the foreseeable future. Based on estimates made by the US Energy Information Office, the country's oil production in 2008 will reach to 2 million bpd by exploitation from new blocks in deep waters. Also, the World Bank announced at the end of 2006 that Angola's oil production will peak at 2.6 million bpd level in the year 2011. However, if new explorations are not made, it will decline afterwards, according to the World Bank. But it is worth mentioning that Angola's domestic crude oil consumption is very limited and standing at about 62000 barrels in 2006. This level comprises less than 5 percent of the country's crude oil production. Therefore, Angola will occupy relatively high position among OPEC members from the export point of view, increasing OPEC's share in world oil exports. Also, Angola is a second country after Nigeria to connect OPEC to the ocean's deep waters.

Angola's incentive in joining OPEC is analyzable. This country has certainly visualized advantages and opportunities for itself alongside the costs and limitations of membership. Being a player in the oil market, obtaining oil information and finding opportunities to impact world oil market and prices (which from now will be determining for this country) are considered as the minimum advantages for Angola. In principle, an undeveloped country like Angola will quickly be dependent on oil revenues. In this respect, the structure and economic interests of this country is more or less similar to those of the other OPEC members. However, it should be noted that in view of current decision-making mechanism in OPEC (unanimity), the addition of every new member will make it more difficult to reach serious, long term and important decisions.

In addition, it is worthwhile to note that Angola's oil is mainly produced under production-sharing contracts. The major US oil companies such as: "Exxon Mobil", "Chevron", "Occidental", and others (BP and TOTAL) have an active presence in Angola. More than 500,000 barrels of Angola's oil has been exported to the US in the second half of 2006. Therefore, this possibility could be kept in mind that the influence of the pro-US wing in OPEC will increase.

Angola also possesses significant volumes of gas reserves and based on planning made, the country will be an exporter of 5 million tons per year of LNG from 2010.

Sudan is also a new oil producer. The country's oil production started from 1996, surpassing its domestic

consumption in 1999. Since then, Sudan has become an oil exporting country. The country's oil production in the year 2005 was about 363,000 barrels, of which 82,000 barrels was consumed domestically and the remainder exported. Sudan's crude oil reserves are not considered as significant. In view of the country's political crisis, the outlook for oil production increase is not so bright. Therefore, considering its limited production and export levels, its membership in OPEC seems to be somewhat hasty. It was perhaps due to this reason that OPEC decided to postpone decision-making in this matter.

Also Ecuador finally quit OPEC membership in 1992 owing to the declining trend of its oil output. However, when its output once again enjoyed an increasing trend in the past few years, it expressed willingness to join OPEC again. But, since 2004, this country's output growth has again been ceased, remaining constant in 2005 compared to the previous year. The average crude oil export by Ecuador in 2005 stood at less than 270,000 bpd which is not significant compared with the levels and scales in the OPEC states. In addition, there exists a possibility that Ecuador, in view of its past record when it was a member of OPEC, still owes some debts with respect to its delayed membership payment, which should be settled down.

Another important decision taken at Abuja conference was selection of a new Secretary General. After the Venezuelan OPEC secretary general quitted his post (in the middle of his term) in December 2003 due to the need for his services by the Chavez government, OPEC could not reach a consensus to select a new secretary general. Now after the passage of three years, OPEC has selected a senior oil manager from Libya called "Abdullah Salem Albadri" as its new secretary general. Albadri had served as caretaker of Libya's oil ministry at some periods in the past. He was also in charge of the organization's yearly presidency in the years 1994 and 1996 and is a recognized personality for OPEC members and international oil industry. Therefore, He enjoys the necessary competence. Naturally, such unanimity as well as the presence of an official secretary general can increase OPEC's power. Libya succeeded to attain the post of the secretary general after a lapse of about thirty years. Some analysts evaluate it as a reward for Libyan government's (or more exactly 'Moamar Qaddafi's) compatibility vis-à-vis the United States of America.

The holding of OPEC conference in an African country, acceptance of another African state for OPEC membership and selection of OPEC secretary general from the African continent, in a way reflects consolidation of the position of African countries within the organization. This shows that Abuja conference was a success for the African continent.

Iran's oil refining projects need \$ 16 Bln in 4th Plan

The total public and private sectors' investments in projects to expand Iran's oil refineries and construct pipelines, storage tanks and new refineries will be around \$16 Bln by the end of the 4th Development Plan (Apr 2005-Apr 2010) of the country, and is estimated to rise to around \$38 Bln by 2025, says Assadollah Mikaieli, manager of Planning of National Iranian Oil Refining & Distribution Company (NIORDC).

Talking to ISNA, he elaborated: "By the end of the 4th Plan, the investment share of NIORDC in the said projects will be around \$ 12 Bln and that of the private sector \$ 3.6 Bln. However some of the projects, worth around \$ 3-4 Bln, will be implemented during the 5th Development Plan".

Concerning the financing of these plans, he explained: "Based on what the Majlis has passed, three major projects namely construction of a condensate refinery and expansion of Arak and Isfahan refineries, worth a total of \$ 7 Bln, were to be executed in finance mode. However, given the prevailing political atmosphere against Iran, our efforts to arrange for the foreign financing of these plans have not met with success".

As to what has been done to overcome the financing bottleneck, Mikaieli said: "We have asked the authorities for loans from Foreign Exchange Reserve Fund (FERF), which can be reimbursed with the proceeds of sale of products. By the end of the 4th Plan our needs will be exceeding the \$ 10.5 Bln we have asked for the rest will have to be made available through the internal resources of NIORDC".

Revealing that NIORDC would become a self-governing company from the beginning of next Iranian year (late March 2007), he stated: "We will then be buying crude oil from NIOC at global prices and sell them back the petroleum products at global prices too".

Complaining that generally Iran's refineries are not equipped with advanced technology, he noted: "The refineries are producing large volumes of low value heavy products such as fuel oil. That is why we are seeking to up grade the refineries to produce more of light and valuable products such as gasoline and gasoil and meet Euro 4 standards too".

As for funding the foreign projects of NIORDC (refinery projects), he explained: "We are after the financing of these projects, which are in partnership with the foreign countries; however, the share holders have to contribute their own shares to the capital investment. To provide our 30% share in those projects, we are looking to find some financial resources, because our internal

resources can not meet the requirements".

As for the financing means for those foreign projects, he stressed: "Given the political conditions of those countries (where the refineries will be built), foreign banks will be willing to provide the financial needs of those projects, though they may not be interested in financing the projects inside Iran".

Iran, CIS crude swap at 150,000 bpd: Official

Mahmoud Emmamzadeh, managing director of Iranian Oil Pipeline & Telecommunication Co. (IOPTC) told reporters: "The current crude oil swap rate with CIS countries is around 150,000 bpd, which supplies part of the needed feed of Tabriz and Tehran oil refineries".

According to him, road tankers and rail roads account for just 33% of all products transport in Iran and pipelines handle the rest.

As for the cost effectiveness of using pipelines rather than road tankers for the job, he explained: "Iran's pipelines carry some 52 Bln ton-km of crude oil and petroleum products in a year, which translates to the use of about 6.5 Mln road tankers. The price differential is Rials 8,000 Bln. Cost of carrying petroleum products using pipelines is one tenth of the cost of using tankers".

Iran's NIOEC preparing Hormoz refinery tender documents

Elaborating on the project to construct 'Hormoz' oil refinery, in Bandar Abbas, Ali Reza Babaie, managing director of National Iranian Oil Engineering and Construction Company (NIOEC) put the needed investment for the project at around \$ 4 Bln, adding: "The plant is planned to treat some 300,000 bpd of blend of very heavy crude oil, heavy export grade and condensate and will be raising Iran's gasoline production".

Talking to reporters, he revealed that the British KBC had finalized the refining model for the plant.

Disclosing that the tender documents for the plant are being prepared, he stressed: "Apart from NIORDC, which holds 27% of the shares of this project, the Indian ESSAR and the local Hekmat, with 51% and 22% of the shares respectively, are other partners in the project", noting: "The private sector can not manage to build a new refinery by itself and hence NIORDC has decided to retain 20%-30% of the shares of the project".

Concerning the crude oil treatment capacity in Iran, he stated: "At present, some 1.675 Mln bpd of crude oil is treated in Iran's 9 refineries and 16% of their crude feeds are converted into gasoline", adding: "The crude feed will be raised to 2.895 Mln bpd once the refineries are expanded and new refineries constructed".

In related news, Mohammad Barikbin, manager of

the Planning and Control of NIOEC said that a number of projects were either underway or being studied in his department, such as the Euro 220 Mln plan to construct Assalouyeh-Bandar Abbas condensate pipeline, the Euro 120 Mln project to renovate Mahshahr port and the \$ 1.7 Bln project to construct oil facilities in Qeshm Island.

Iran's oil output will rise 10% in 24 years: EIA

Iran will be producing some 4.3 Mln bpd of crude by 2030, predicts the Energy Information Administration of the U.S, reported Fars news agency.

EIA has put the crude oil production of 11 members of OPEC (excluding Angola) at a total of 50.7 Mln bpd by 2030, a rise of 69% compared to their output of 2006.

Iran's 3.9 Mln bpd of 2006 will see a marginal rise of 10% to reach a total of 4.3 Mln bpd, an increase of 400,000 bpd in 24 years, asserts EIA. This will downgrade Iran's position in OPEC from the present second largest producer to the sixth in the organization, infers the EIA forecast.

EIA's forecasts about other OPEC members' productions by 2030 are; Saudi Arabia 17.1 Mln bpd, Venezuela 5.9 Mln bpd, Iraq 5.5 Mln, UAE 4.6 Mln, Kuwait 4.5 Mln, Nigeria 3.2 Mln, Algeria and Libya 1.8 Mln each, Indonesia 1.1 Mln and Qatar 0.8 Mln.

Path paved for "Iran LNG" contracts signed

The \$ 4 Bln "Iran LNG" project has entered its executive stage following the signing of contracts for two of its three packages.

The project was first raised in 2002 under the title of "NIOC LNG" but was renamed "Iran LNG" in 2006. A company of the same name was established, with NIOC holding 49% of its shares and part of the remaining shares taken up by NIOC Pension Fund.

"Iran LNG" project, with a design production capacity of 10-10.5 mt/y, will be executed in Tombak region, west of Assalouyeh. It consists of two 5-Mln ton trains and 3 main packages.

The 1st package includes liquefaction plants such as gas sweetening and gas compression units.

The 2nd package is for the construction of LNG and LPG storage tanks, and the 3rd package entails building terminal and loading facilities.

National Iranian Gas Export Company (NIGEC), as the initial contractor of the project, managed to hold tenders for all three packages in 2004; however, these tenders, particularly the one for the 1st package, produced no favorable results.

Following five years of stagnation in the project, finally Iran LNG Company (ILC) signed the contract for

packages 2 and 3.

The \$ 310 Mln deal for package 2 has been signed between ILC and the JV of the South Korean Daelim and Ghorb-e-Nooh Co. (affiliated to Khatam al-Anbia HQ), based on which, three 140,000-cubic meter LNG storage tanks and two 30,000-cubic meter LPG tanks will be constructed.

This project, the financial needs of which is being secured through the internal resources of NIOC, is to take 42 months to complete, from the effective date of its contract.

The Rials 1,520 Bln contract for package 3 has been signed between ILC and Khatam al-Anbia HQ, based on which the contractor will build an LNG loading terminal.

This project, the financial needs of which will again be secured through internal resources of NIOC, is to take 24 months to complete from the effective date of its contract.

Talking to IranOilGas network, Ali Kheyrandish, managing director of Iran LNG Company provided further details about "Iran LNG" project.

As for the 1st package of the project, he said: "Talks on the construction of its liquefaction units are underway and hopefully the deal for this part will be signed by July or August this year", adding: "If so, the 1st train of the project will become operational in 42 months and the 2nd train in 48 months. Hence, the project will be commissioned in 2011, if all conditions remain normal".

Concerning the Revised FEED of the 1st package, underway jointly by the German Linde and the Italian Snamprogetti, he stated: "The documents of the changes in the package will be gradually ready until May or June this year".

As for the means of financing the \$ 4 Bln project, he explained: "We have to provide 30%-50% of the plan's financial needs and manage the rest through foreign financing system. Now, by funding phases 2 and 3 of the project through NIOC resources, the conditions for getting the remainder through a foreign financing scheme will become much easier".

On assigning shares of Iran LNG Company to new companies and institutes, he disclosed: "Around 40% of the shares of ILC can be given to the companies that are interested in long-term purchase of the LNG output of the plan, or the ones that would be investing in it".

As for who would be buying the LNG yields of the project, Kheyrandish said some talks were underway between NIGEC and certain potential buyers.

Regarding the MC for "Iran LNG" project, he revealed: "We are talking with 4 companies experienced in MC of LNG projects and hopefully these negotiations

will be concluded in the next six weeks”.

With regards to the 3rd package, he said: “We are talking with the local Tarhe Now Andishan (TNA) on the MC of the 3rd package and its contract is likely to be signed.

He put the ‘local content’ in “Iran LNG” project at 50%, saying that some 15,000 direct job vacancies would be created by the project, 10% of which will be foreign workforce.

Asked if any initiatives were underway for the eventual transport of LNG cargoes of this project, he said: “Nothing has yet been done in this regard, but we intend to invest in Re-gasification terminals of the LNG recipient countries”.

Darkhovin could have a fourth phase

Italy’s Eni and the National Iranian Oil Company (NIOC), which have been eyeing a third phase at the Darkhovin oilfield in Iran to nearly double output to 300,000 barrels per day, are considering a fourth phase to push overall production to 400,000 bpd.

NIOC managing director Gholamhossain Nozari told Upstream there was “a possibility of Darkhovin producing 400,000 bpd”, which would make it one of Iran’s biggest producers and even outperform the planned Azadegan oilfield.

First unit of Phases 6-8 refinery could be ready in April

Mohammad Javad Shams, manager of development of phases 6, 7 & 8 of South Pars gas field with POGC said: “The first unit of the refinery of phase 6 will be commissioned by late March or early April this year but the gas yields of phases 2 and 3 of the field will be used for the purpose”.

He went on: “Some 1bcf/d of gas will be ready for transfer to Aghajari by coming April. In case Assalouyeh-Aghajari pipeline is not ready to carry the gas, it will be loaded onto the 42” pipeline from Assalouyeh to Kangan, which can carry half of the available gas (500 mcf/d) to Fajr gas refinery”.

As for the completion date of development of phases 6, 7&8, he noted: “This will take some time yet, but we hope to complete the task next (Iranian) year”.

Earlier in January Rahim Tabrizi, manager of onshore sector of development of Phases 6-8 of South Pars with PetroPars had said: “the gas refinery of Phase 6 of Iran’s South Pars gas field is ready for the pre-commissioning stage and its pilot flare was lit in December 2006”.

Latest with Aghajari injection wells

Drilling of 19 gas injection wells in Aghajari oil field will probably finish in July or August this year.

Using ‘NK 101’ drilling rig, Naftkav, the project contractor, has drilled 18 wells so far, six of which have reached their Down-hole Completion stage.

Naftkav was supposed to utilize the Chinese Great Wall’s “GWDC-30C” drilling rig for the task, which is laying idle in Masjid Solaiman region; however, the two sides have failed to reach an agreement on the issue.

Naftkav is also holding some talks with PEDEX for using its drilling rigs. If the talks prove to be conclusive and the rigs are made available to Naftkav, drilling of the wells will be completed in July or August this year.

This \$40 Mln contract was signed between Naftkav and PEDEC towards end of 2003. The project entailed drilling of 19 injection wells and the work-over of another 4 wells in 14 months.

Completing the said wells are pending securing of the needed drilling facilities such as wellhead equipments, Christmas Tree and also leasing of a work-over rig.

2D seismic of Abadan plain inactive for environmental concerns

The 2D seismic of phase 2 of Abadan plain, covering a length of 1,320 km, has been halted for the past two months because of environmental concerns.

This project, which was assigned to Dana Geophysical Co. in April 2004 and was to be completed in a year, has not yet been completed due to a variety of reasons.

The project, indicating a 72% physical progress, was halted twice before. Once for the same environmental reason and the second time because the contractor had failed to provide in time the needed seismic equipments for the swampy area.

Dana Geophysical Co. secured the said seismic equipments in November 2006; however, these equipments have not yet been cleared off the customs, causing further delay in the job.

The managers of Dana Geophysical Co. believe that the client’s failure to resolve the problematic issues, raised by the Environment Protection Organization plus those caused by the customs office, is the reason for the suspension of the said seismic activities

Rig for Khesht drilling stuck at customs: NDC MD

Asghar Rafyie, managing director of North Drilling Company (NDC) said: “Drilling of the wells of Khesht oil field was to start in October 2006 upon the arrival of ‘Naftoun 1’ drilling rig; however, the project is still suspended because the said rig has not been cleared off the customs yet”, ISNA reported

He did not disclose any likely date for that clearance.

As for drilling in the Iranian waters of the Caspian