

# Gas industry as a reliable bed for investment

By Mr Hedayat Omidvar, National Iranian Gas Company

## Abstract

*The existence of 32 trillion cubic meters of natural gas reservoirs in the Islamic Republic of Iran beside the other capabilities in the oil and gas industry and also the experience in continuous activities of this field for more than one century has made the National Iranian Gas Company (NIGC) one of the most reliable active companies in the natural gas arena. In this article, Mr Hedayat Omidvar overviews the NIGC before focusing on fifteen real investment opportunities.*

## About the Author

Mr Hedayat Omidvar  
Member of IGU Marketing Committee  
Head of Communication Affairs with Science & Research Centers  
Research & Technology Dept.  
National Iranian Gas Company  
No.77-Southern Aban St.  
Karimkhan Ave.  
Tehran  
1598753113-Iran  
Tel:+98-21-81315646  
Fax:+98-21-81315682  
Email: [omidvar@nigc.ir](mailto:omidvar@nigc.ir)

## Table of Contents

### Page Chapter

3	Preamble
3	Overview of NIGC's administration and organization staffs
6	The subsidiary companies of the National Iranian Gas Company
7	NIGC's strategic objectives
7	Iran's special advantages to enter the global gas market
8	Pioneer investment opportunities
9	Project Details for the investment opportunities
24	Natural gas underground storage plans
24	Other investment areas in the gas industry related fields
25	The important developmental research plans of the NIGC

## **Preamble**

The existence of 32 trillion cubic meters of natural gas reservoirs in the Islamic Republic of Iran beside the other capabilities in the oil and gas industry and also the experience in continuous activities of this field for more than one century has made the National Iranian Gas Company one of the most reliable active companies in the natural gas arena.

Iran offers plenty of advantages, such as abundant reservoirs, existing infrastructures and the codification of the required laws and regulations in accordance with the development plans. This means that adequate conditions do exist for the investment and participation of international companies in the Iranian gas industry. This includes the necessary preparation for the participation and investment in the natural gas production, transmission and underground storage sectors and also the sale and export of gas through the pipelines or as LNG and other commodities.

It is completely obvious that with the discovery activities related to the common energy carriers such as oil, coal, nuclear and solar energy etc. for at least next 40 years, the dominant energy will be supplied by natural gas. At the present time, the average consumption and production of this invaluable energy carrier has the required stability on the international level and its continuation is predicted and hence, the National Iranian Gas Company having followed the prevailing national viewpoint in the country is ready to participate and interact with all the active national and international companies in the natural gas industry.

## **Overview of NIGC's administration and organization staffs**

The National Iranian Gas Company is comprised of eight directorates as follows:

- 1- Financial Affairs Directorate
- 2- Planning Directorate
- 3- Research and Technology Directorate
- 4- Human Resource Development Directorate
- 5- Gas Distribution Directorate
- 6- Natural Gas Distribution Coordination and Supervision Directorate(Dispatching)
- 7- Production Coordination and Supervision Coordination Directorate
- 8- International Affairs Directorate

In addition to the mentioned directorates, there are twelve departments which directly report to the managing director as follows: Public Relations, Legal Affairs, Inspection and Complaint Consideration Affairs, Internal Affairs, Security, Assembly Affairs, Executive Affairs of Violation Investigation, Technical Inspection, Health, Safety and Environment (HSE), Information and Communication Technology, Commercial Expertise Affairs and Designation Affairs.

The subsidiary companies of the National Iranian Gas Company

The National Iranian Gas Company is also comprised of 54 subsidiary companies that each of them is active in different fields of natural gas industry with independent directorates. These companies are as follows:

**a) Provincial gas companies**

At present, there are 31 provincial gas companies throughout Iran which are responsible for gas delivery to the cities, villages, power plants, industries and commercial centers.

**b) Iranian Gas Engineering and Development Company**

The Iranian Gas Engineering and Development Company is one of the subsidiaries of the NIGC. Based on the executive system of oil industry projects, the company is responsible for the implementation of National Iranian Gas Company master plans. In terms of the volume of under implementation projects, the company is the biggest one in the NIGC and is responsible for over 70 percent of the total planned investments.

The company is authorized to deal with the following tasks:

- Carrying out economic and feasibility studies of the projects left to the company.
- Carrying out fundamental and detailed engineering affairs and implementing all the projects left to the company.
- Design, supervision and implementation of all the engineering and construction operations such as construction and development of oil and gas production, collection and transfer systems, wellhead facilities, processing plants and dehydration facilities, underground gas storage, transfer pipelines and gas supply, gas pressure booster and reducer stations and C.N.G, telecommunication systems, pumping stations, infrastructural and building tasks and kinds of marine structures and the related installations inside and outside of the country.
- Performing the required material procurement operations to provide the goods from inside and outside of the country
- Performing the scientific, technical, financial, commercial and service activities needed to develop the company operations and the value of the plans under implementation is more than \$20 billion and the total approved credit of the company was about USD 4 billion in 2010

**c) Iranian Gas Transmission Company**

The most important task of the company is receiving natural gas, ethane, LPG and gas liquids from domestic and foreign production sources and transferring it to domestic production terminals and export terminals. The Iranian Gas Transmission Company is comprised of seven managerial districts and 10 operational zones. The company is responsible for operation management of about 33000 km gas pipelines all over the country.

**d) Gas processing companies**

Gas processing companies act under the supervision of the production coordination and supervision directorate. This directorate supervises and utilizes thirteen gas processing companies. It is projected that through implementation of the development projects by 2025, the number of the gas processing companies is enhanced and based on this prediction, the total gas processing capacity of NIGC will add up to 1200 Million Cubic Meters (MMC) per day,

provided that all processing plants development projects are realized by 2025. The gas processing companies which work under the supervision of this directorate are as follows:

- Bidboland I and Masjed Soleyman Gas processing plants with the capacity of 23.5 MMC per day
- Parsian Gas processing plant with the capacity of 81 MMC per day
- Ilam Gas processing plant with the capacity of 6.8 MMC per day that regarding its enhancement, the capacity will add up to 10.2 MMC per day by 2012
- Fajr Jam gas processing plant with the capacity of 110 MMC per day
- Sarkhun and Qeshm Gas processing plant with the capacity of 14.4 MMC per day
- Shahid Hasheminezhad Gas processing plant with the capacity of 44.5 MMC per day
- South Pars Gas processing plant with the capacity of 190 MMC per day
- Bidboland II Gas processing plant with the capacity of 57 MMC per day that is expected to be launched in 2012

**e) Iranian Underground Gas Storage Company**

Iranian Underground Gas Storage is one of the other major subsidiary companies of the NIGC established in 2008 aiming at building and maintaining balance between the natural gas production and consumption in specific circumstances (sudden temperature drop) and also organizing, expanding, developing and speeding up underground gas storage activities in Iran. The company is responsible for continuing the current projects and defining new projects. It started momentum for surveying and studying in various parts of the country to identify potential underground structures suitable for gas storage; and studied 217 reservoirs over a year. At present, the company is implementing numerous projects namely Sarajeh, Shoorjeh, Yortsha, Nasrabad, Ghezel Tapeh, Mokhtar, etc.

**f) Iranian Gas Commerce Company**

Iranian Gas Commerce Company as one of the other NIGC subsidiary companies was established on January 21, 2008 in line with the macro objectives and policies related to energy especially oil, gas and petrochemicals to carry out the important and critical projects in order to extract, produce, process, transmit and distribute energy and its products in various sectors including household, industry, power plant and export ones and replacement of clean and inexpensive fuels with other energy carriers to fulfill the following detailed tasks:

- Commerce activities including marketing, purchase, sales, import, export, goods and equipment commissioning and some hydrocarbon derivatives including natural gas, Liquid Petroleum Gas (LPG), Liquefied Natural Gas (LNG), gas liquids, gas condensates, sulfur and other gas processing products
- Carrying out goods-related tasks including warehouse keeping, customs formalities, and other relevant activities
- Rendering technical and expertise services, goods technical inspection, updating and classifying goods, developing vendor lists and some other relevant activities

**g) Iranian non-industrial gas services**

Iranian Non-industrial Gas Services Company is operating adjacent to Fajr Jam and Parsian gas processing plants and Asaluyeh giant gas processing plant which are being constructed and utilized in line with providing services to gas residential towns located in Jam. The company is responsible for providing, developing and implementing Construction plans and maintenance operations (electricity, mechanics, utilities, civil and greenery), company's residential houses, public places and non-industrial facilities. It is also involved in conducting activities including cultural, sports, training and welfare ones such as transportation services (ground and air), clubs, restaurants, and managing cultural, sports and religious centers in the NIGC subsidiary companies.

#### **h) National Iranian Gas Export Company**

Since the oil industry policy is the turning of our dear country into an important factor in the global gas market, the National Iranian Gas Export Company was founded in 2002 with the mission of natural gas export project development and in May 2010, the gas export activities via the pipelines was separated from the National Iranian Oil Company and transferred to the National Iranian Gas Company.

### **NIGC's strategic objectives**

The NIGC major objectives can be surveyed in two different sections: national and international. In both sectors, the main principle is customer satisfaction and maximum productivity achievement. In line with this and based on the outlook document (2025 horizon), the NIGC aims at ranking the third among natural gas producers in the world to achieve 8 to 10 percent of the global gas trade share. The second objective of the NIGC is ranking the first in the region in terms of gas technology. Plans and policies of the NIGC in international level and ranking the third in the world; and achieving a share of 10 percent of natural gas trade in the world as follows:

- Processing about 1200 MCM per day of natural gas
- Enhancing production capacity while prioritizing joint reservoirs, especially South Pars
- Enhancing natural gas share in the energy basket of the country by 70 percent, through substituting liquid oil products for natural gas
- Making efforts to export natural gas to neighboring countries through pipeline, other countries in the world and Far East through Liquefied Natural Gas production
- Attracting foreign investment through capital markets and/or joint projects
- Economic firms running vision and improving structure to maximize profitability and competition in international markets
- Maximization of the added value through using gas in energy consuming industries and/or establishment of industries like GTL
- Reinforcing private sector in downstream and gas distribution industries
- Cooperation with the countries in the region in production and transmission affairs
- Improving gas management status in the region
- Benefiting from natural gas adjusted pricing system
- Complete privatization of natural gas industry in Iran

- Creating the required infrastructures for the development of gas industry in its upstream and downstream sectors, especially in the regions. The company has foreseen plans including interaction with the countries and companies which own advanced technology, establishment of a center for the promotion and improvement of modern oil, gas and petrochemical industry technologies in the Persian Gulf region and strengthening research and development institutions of domestic research centers.

### **Iran's special advantages to enter the global gas market:**

- The shortest route to global markets
- Has huge infrastructures for transferring gas abroad
- The minimum required investment
- Possibility of transit to Turkey, Europe and Persian Gulf region countries
- Possibility of gas swap to the adjacent countries
- Existence of potential major consumers
- Owning 33 TCM proven gas reserves and ranking the second among gas owning countries with the current trend by the next hundred years
- Ranking the fourth among producers that will rank the third in twenty years
- Having necessary infrastructures for gas export and swap and transit to Europe, East Asia and Persian Gulf region countries

### **Pioneer investment opportunities**

The private sector participation enhancement in carrying out the infrastructural projects of the Iranian gas industry has been one of the strategic approaches of the National Iranian Gas Company during the recent years.

In this regard, utilizing the capabilities of the domestic and foreign private sector in supplying the financial sources of the gas industry plans has created a new environment for the National Iranian Gas Company to interact with the private sector and has formed a win-win relationship for both parties. Along these lines, relying on its successful experiences in the joint investment with the private sector and trusting the reliable capabilities and capacities in this sector, the National Iranian Gas Company has offered a vast range of investment options for the energy field investors in several sectors of this strategic industry including processing, transmission, underground storage and distribution ones. What follows introduces some of the most important investment opportunities in the form of the National Iranian Gas Company plans and projects which are ready to attract the financial resources.

## The NIGC prioritized plans four investment to be fed financially

The NIGC prioritized plans for investment to be fed financially				
Item	Project Title	Date		Required Credit (Billion rials)
		Start	Finish	
1	Gas underground storage in Shoorijeh	2010	2013	1700
2	Gas pressure booster station construction	2009	2012	6000
3	2 <sup>nd</sup> phase of Ilam gas processing plant <sup>(1)</sup>	2010	2012	1624
4	Continuation of the 6 <sup>th</sup> trans-Iranian Pipeline (Ahvaz / Dehgolan/Miandoab) <sup>(1)</sup>	2011	2014	53470
5	Continuation of the 7 <sup>th</sup> trans-Iranian Pipeline <sup>(1)</sup> (Iranshahr to Zahedan and Pakistan border)	2011	2015	28994
6	The 9 <sup>th</sup> trans-Iranian Pipeline from Dehgolan to Bazargan	2011	2015	40638
7	The 11 <sup>th</sup> trans-Iranian Pipeline	2011	2015	57429
8	Line of gas export to Iraq	2011	2013	4200
9	Gas transmission line Damghan, Kiasar, Sari, Neka	2011	2015	2942
10	Gas transmission line Bafgh-Yaz	2011	2013	565
11	Gas transmission line Ahvaz-Khoramshahr	2011	2013	1400
12	Reinforcing gas transmission line Mahshahr	2011	2013	800
13	Gas transmission line Delijan-Khomein	2011	2013	450
14	Continuation of the 7 <sup>th</sup> trans-Iranian Pipeline (Zahedan-Zabol)	2011	2015	17300
15	Gas transmission line Bidboland-Gachsaran	2011	2013	520
<b>Total</b>				<b>218032</b>

(1) The operational contractor was selected on an EPCF basis

**Project Details for the 15 specific NIGC plans listed above**

<b>Project Introduction</b>				
<b>Underground natural gas storage in Shoorijeh tank 1<sup>st</sup> Phase</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Khorasan-e Razavi province			
<b>Explanation</b>	This project with a tank capacity of 4.8 billion cubic meters has a very appropriate capability for underground natural gas storage			
<b>Products capacity by product kind</b>	According to the National Iranian Oil Company managing board approval, in the 1 <sup>st</sup> phase the gas injection facilities with 10 MCM/day and processing facilities with 20 MCM/day and in 2 <sup>nd</sup> phase these values increase to 20 MCM/day in injection unit and 40 MCM/day in the processing unit			
<b>Project Scheduled Time</b>	4 years (2010-2013)			
<b>Investment Level (Billion rials)</b>	1700			

<b>Project Introduction</b>				
<b>Construction of gas pressure booster installations</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Several provinces			
<b>Explanation</b>	Gas pressure booster installations of Hamedan, Bijar, Parchin, Semnan, Dasht and Dahaghigh with 1+1, 2+2, 2+1, 1+1, 1+2 and 3+1 turbine arrangements, respectively. Also, providing a part of turbo compressors of the other gas pressure boost stations is among the goals of the plan.			
<b>Products capacity by product kind</b>				
<b>Project Scheduled Time</b>	4 years (2009-2012)			
<b>Investment Level (Billion rials)</b>				

<b>Project Introduction</b>				
<b>Ilam Gas processing plant Construction (2<sup>nd</sup> Phase)</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Ilam province			
<b>Explanation</b>	Building gas processing capacity of 3.4 MCM /day			
<b>Products capacity by product kind</b>	Ilam gas processing plant capacity was 6.8 MCM/day in the 1 <sup>st</sup> phase that will increase 3.4 MCM/day and reach 10.2 MCM/day. By-products of this increase include production of 189800 CM of C <sub>3</sub> <sup>+</sup> , 175200 CM of C <sub>5</sub> <sup>+</sup> and 51100 tons of sulfur. The project was left to the contractor in an EPCF contract form.			
<b>Project Scheduled Time</b>	4 years (2011-2014)			
<b>Investment Level (Billion rials)</b>	1624			

<b>Project Introduction</b>				
<b>Continuation of the 6<sup>th</sup> trans-Iranian Gas Pipeline from Ahvaz to Dehgolan/Miandoab</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Several provinces			
<b>Explanation</b>	In this plan there are continuation of the 6 <sup>th</sup> trans-Iranian Gas Pipeline from Ahvaz to Dehgolan/Miandoab with a 820 kilometer length and 56 inch diameter together with the secondary lines including Dehloran 103 km, 20 inch, Abdanan 65 km, 12 inch, koohdasht 23 km, 36 inch lines and Sanandaj 34 km, 30 inch reinforcing line and 8 pressure booster stations with a 900 megawatt power totally, 2 operational yards, pressure control stations and feeding network implementation with 1.1 million branches. Some parts of the project from Ahvaz to Dehgolan and Koodasht branches, Dehgolan, and 4 pressure control stations and telecommunication system with the related SCADA and Dehloran and Abdanan branches (together with branch base design) were left to the contractor as an EPCF contract and the negotiations of the other sections are in progress.			
<b>Products capacity by product kind</b>	With the execution of the mentioned plan, natural gas with 110 MCM/day capacity could be transferred to the northern and northwestern provinces of the country			
<b>Project Scheduled Time</b>	5 years (2011-2015)			
<b>Investment Level (Billion rials)</b>	53470			

<b>Project Introduction</b>				
<b>Continuation of the 7<sup>th</sup> trans-Iranian Gas Pipeline</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Sistan and Baluchestan province			
<b>Explanation</b>	<p>In this plan there are continuation of the 7<sup>th</sup> trans-Iranian Gas Pipeline from Iranshahr to Pakistan border with a 290 kilometer length and 56 inch in diameter Chabahar transmission 60 km, 30 inch line, Iranshahr/Zahedan transmission 260 km, 36 inch line with and its continuation to Zabol with 80 km length and the secondary lines including Zabol 120 km, 20 inch line, Mirjaveh 85 km, 10 inch, khash 80 km, 16 inch, Nikshahr 50 km, 16 inch, Ghasrghand 50 km, 16 inch and Rask 20 km, 8 inch lines and pressure control stations and metering in border point and 2 operational yards in cities Zahedan and south of Iranshahr. Some parts of the project including the continuation of the 7<sup>th</sup> trans-Iranian Gas Pipeline EPCF (from Iranshahr to Pakistan border and Chabahar branch and Iranshahr to Zahedan transmission line and LBV, L/R stations, Cathodic protection and the telecommunication system with the related SCADA (with the branch base design) were left to the contractor.</p>			
<b>Products capacity by product kind</b>	With the implementation of the mentioned project, gas transmission to Pakistan and the cities on the route will be provided.			
<b>Project Scheduled Time</b>	5 years (2011-2014)			
<b>Investment Level (Billion rials)</b>	28994			

<b>Project Introduction</b>				
<b>Continuation of the 9<sup>th</sup> trans-Iranian Gas Pipeline from Dehgolan to Bazargan border</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Several provinces			
<b>Explanation</b>	The 9 <sup>th</sup> trans-Iranian Gas Pipeline from Dehgolan to Bazargan border with 614 km length and 56 inch diameter together with 3 pressure booster stations			
<b>Products capacity by product kind</b>	With the implementation of the mentioned plan, the necessary infrastructures for transmission of extra transmitted gas to Turkey and the European Union countries through the 6 <sup>th</sup> trans-Iranian Gas Pipeline will be provided.			
<b>Project Scheduled Time</b>	5 years (2011-2015)			
<b>Investment Level (Billion rials)</b>	40638			

<b>Project Introduction</b>				
<b>The 11<sup>th</sup> trans-Iranian Gas Pipeline</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Bushehr, Fars, Yazd, Isfahan and Semnan provinces			
<b>Explanation</b>	The plan includes a 1100 km, 56 inch line with 7 pressure booster stations.			
<b>Products capacity by product kind</b>	By utilization of the mentioned plan, gas transmission with a 110 million cubic meters per day capacity produced by 20, 13 and 12 phases will be provided.			
<b>Project Scheduled Time</b>	5 years (2011-2015)			
<b>Investment Level (Billion rials)</b>	57429			

<b>Project Introduction</b>				
<b>Line of gas transmission to Iraq</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Lorestan and Kermanshah provinces			
<b>Explanation</b>	The plan includes a 203 km, 48 inch line.			
<b>Products capacity by product kind</b>	By utilization of the mentioned pipeline, it will be possible to deliver 25 MCM/day gas through a 48-inch line to Al-Mansuriyeh and Baghdad power plants			
<b>Project Scheduled Time</b>	3 years (2011-2013)			
<b>Investment Level (Billion rials)</b>	4200			

<b>Project Introduction</b>				
<b>Gas transmission line Damghan/Kiasar/Sari/Neka</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Semnan and Mazandaran provinces			
<b>Explanation</b>	The plan includes a 167 km, 42 inch line.			
<b>Products capacity by product kind</b>	By utilization of the mentioned pipeline, it will be possible to transmit 40 MCM/day gas through the northeast 48-inch line to Neka			
<b>Project Scheduled Time</b>	5 years (2011-2014)			
<b>Investment Level (Billion rials)</b>	2492			

<b>Project Introduction</b>				
<b>Gas transmission line Bafgh-Yazd</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Kerman and Yazd provinces			
<b>Explanation</b>	The plan includes a 100 km, 24 inch line.			
<b>Products capacity by product kind</b>				
<b>Project Scheduled Time</b>	3 years (2011-2013)			
<b>Investment Level (Billion rials)</b>	565			

<b>Project Introduction</b>				
<b>Gas transmission line Ahvaz-Khoramshahr</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Khuzestan province			
<b>Explanation</b>	The plan includes a 105 km, 36 inch line.			
<b>Products capacity by product kind</b>	The construction of this line aims at supplying for the future industrial units in the region including steel units and oil refinery			
<b>Project Scheduled Time</b>	3 years (2011-2013)			
<b>Investment Level (Billion rials)</b>	1400			

<b>Project Introduction</b>				
<b>Mahshahr gas transmission reinforcing line and Shadgan branch</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Khuzestan province			
<b>Explanation</b>	The plan includes a 68 km, 36 inch line and a 34 km, 12 inch line.			
<b>Products capacity by product kind</b>	The execution of this plan aims at supplying for Mahshahr power plant, Bandar-e Imam petrochemical development plan and city and Shadgan steel			
<b>Project Scheduled Time</b>	3 years (2011-2013)			
<b>Investment Level (Billion rials)</b>	800			

<b>Project Introduction</b>				
<b>Gas transmission line Delijan-Khomein</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Markazi province			
<b>Explanation</b>	The plan includes a 70 km, 24 inch line.			
<b>Products capacity by product kind</b>	Supplying gas to cement unit, industrial consumption and the villages on the Khomein route			
<b>Project Scheduled Time</b>	2 years (2011-2012)			
<b>Investment Level (Billion rials)</b>	450			

<b>Project Introduction</b>				
<b>Continuation of the 7<sup>th</sup> trans-Iranian Gas Pipeline Zahedan-Zabol</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Sistan and Baluchestan province			
<b>Explanation</b>	The plan includes a 200 km, 20 & 30 inch line.			
<b>Products capacity by product kind</b>	Supplying gas to Zabol city, the industrial units, a power plant on the route and the villages			
<b>Project Scheduled Time</b>	4 years (2011-2014)			
<b>Investment Level (Billion rials)</b>	17300			

<b>Project Introduction</b>				
<b>Gas transmission line Bidboland-Gachsaran</b>				
<b>Type</b>	<b>Oil</b> <input type="checkbox"/>	<b>Gas</b> <input checked="" type="checkbox"/>	<b>Petrochemicals</b> <input type="checkbox"/>	<b>Gas processing plant</b> <input type="checkbox"/>
<b>Execution Location</b>	Khuzestan province			
<b>Explanation</b>	The plan includes a 94 km, 20 inch line.			
<b>Products capacity by product kind</b>				
<b>Project Scheduled Time</b>	3 years (2011-2013)			
<b>Investment Level (Billion rials)</b>	520			

## Natural gas underground storage plans

Item	Tank Name	Specifications					Plan Implementation Cost Estimation (Billion Rials)
		Injection Time (Months per year)	Maximum Injection for storage (MCM/day)	Maximum Storage Volume Annually (MCM)	Extraction Time (Months per year)	Maximum Periodical Extraction Possible (MCM/day)	
1	Sarajeh	8	7.3 in 1 <sup>st</sup> phase	1.5 in 1 <sup>st</sup> phase	4	9.8 in 1 <sup>st</sup> phase	3114
2	Yortsha	6-7	1.6	192	3	5	1581

## Other investment areas in the gas industry related fields

- 1- Investment can be considered in the production of steel and polyethylene pipeline raw materials and the industries related to the manufacturing of the large size polyethylene valves, gas odorizers and also the seamless pipes in several sizes.
- 2- Investment in the sulfur related industries including constructing the industries and installations to utilize sulfur as the primary material for the production of commodities such as sulfur flower sulfuric- production of chemical fertilizers and industries such as pharmaceutical and plastic producing industries; some industries can be created beside the gas processing plants to use and produce such commodities.
- 3- Investment in industries utilizing the oil and gas liquids as the raw materials for the industry commodities such as the following:
  - Solvent material production industries
  - Producing several kinds of oil products resulted from the oil and gas liquid processing including heavy hydrocarbon materials and its compounding with Fuel Oil and producing new commodities with different qualities
  - Industry related to the production of gas from light oil and gas liquids by building new refineries near the oil and gas liquid producing refineries
- 4- Investment to create the industry for utilizing LPG and separation of Ethane, Propane and Methane and making and processing the petrochemical commodities like polypropylene which is used in plastic industries and disposable dishes
- 5- Instrumentation and control system equipment
- 6- Gas distribution, smart gas meter production, polyethylene valves and gas odorants
- 7- Need to have industrial units to produce gas sweetening and dehydration equipment, gas pressure booster station equipment, chemicals, catalysts, dehydrating materials, oils and pipe primers
- 8- The NIGC as the gas transmission authority has plans to implement thousands of kilometers pipelines including thick pipes having wide sheets as their primary materials and cover more than 70 percent of the pipe costs. Also, the required sheets for the under-pressure tanks in gas processing units and stations are supplied from foreign countries

## **The important developmental research plans of the NIGC**

Developmental research enhancement results in the access to advanced technologies in gas field which in turn acts as an important infrastructure along the gas role as the industrial development pillar of the country. The research and technology directorate of the National Iranian Gas Company has been founded since 2004 having the goal of performing the demand-oriented and effective research plans to codify and develop the technical knowledge in the areas related to gas processing, transmission, underground storage and distribution, and producing commodities having higher added value and reaching to the development summits along with the Outlook Document goals.

On these lines, the research and technology directorate has foreseen and created the necessary infrastructures having high potentials to attract the domestic and foreign capitals by creating added value and prosperity through science and technology. At the present time, the directorate has 31 developmental, strategic and application plans including 16 developmental plans, 5 strategic plans and 10 application ones.

The National Iranian Gas Company welcomes the interest and participation of the esteemed domestic and foreign investors in these fields and is ready to offer the complementary information of the plans to the qualified applicants who ask for them.