

Investment opportunities in Iran Natural Gas Industry

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The existence of 34 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 as one of the most reliable active companies in the natural gas arena.

The existence of lots of advantages in Iran geopolitically, abundant reservoirs, necessary infrastructures being ready and the codification of the required laws and regulations in accordance with the development plans have provided the adequate conditions for the investment and participation of the international companies in the Iran's gas industry and among them is 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.

A Glance at the NIGC Administration and Organization Staff

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 thirteen departments which directly report to the managing director as follows: Public Relations, Legal Affairs, Inspection and Complaint Consideration Affairs, Internal Auditing, Selection Kernel, Security, Assembly Affairs, Executive Affairs of Violation Investigation, Technical Inspection, Health, Safety and Environment (HSE), Information and Communication Technology, Commercial Expertise Affairs, and Structural Engineering 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

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 \$4.1 billion in 2011

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 32000 km gas pipelines all over the country.

d) Gas processing plants Companies

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

- Bidboland I and Masjed Soleyman Gas processing plants with the capacity of 28.1 MMC per day
- Parsian Gas processing plant with the capacity of 82.5 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 2014
- Fajr Jam gas processing plant with the capacity of 110 MMC per day
- Sarkhun and Qeshm Gas processing plant with the capacity of 16.5 MMC per day
- Shahid Hasheminezhad Gas processing plant with the capacity of 49 MMC per day
- South Pars Gas processing plant with the capacity of 208 MMC per day
- Bidboland II Gas processing plant with the capacity of 57 MMC per day that is expected to be launched in 2014

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 220 reservoirs over a year. The company started the underground gas storage in the tank of Sarajeh of Qom in 2006 and finished it in 2011 with gas injection. Moreover, in the beginning of 2013 the processing installations of the mentioned tank were launched and about 69 million cubic meters of gas has been delivered so far. 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 processing plant 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) 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.

The NIGC 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 120MCM 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

- Impressing 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
- Having the 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 34 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 for investment to be fed financially				
Item	Project Title	Date		Required Credit (Billion rials)
		Start	Finish	
1	Gas underground storage in Shoorijeh	2010	2013	2200
2	Gas pressure booster station construction	2009	2013	8600
3	2 nd phase of Ilam gas processing plant ⁽¹⁾	2011	2014	1624
4	Continuation of the 6 th trans-Iranian Pipeline (Ahvaz / Dehgolan/Miandoab) ⁽¹⁾	2011	2014	49362
5	Continuation of the 7 th trans-Iranian Pipeline ⁽¹⁾ (Iranshahr to Zahedan and Pakistan border)	2011	2015	29804
6	The 9 th trans-Iranian Pipeline from Dehgolan to Bazargan	2012	2015	40638
7	The 11 th trans-Iranian Pipeline	2012	2016	63042
8	Gas transmission line Damghan, Kiasar, Sari, Neka	2011	2015	3035
9	Gas transmission line Bafgh-Yaz	2011	2014	566
10	Gas transmission line Ahvaz-Khoramshahr	2011	2014	1400

11	Reinforcing gas transmission line Mahshahr	2011	2014	800
12	Gas transmission line Delijan-Khomein	2011	2014	450
13	Gas transmission line Bidboland-Gachsaran	2011	2014	522
Total				202043

Natural gas underground storage plans

Tank Name	Specifications					Plan Implementation Cost Estimation (Billion Rials)	
	Maximum Daily Injection for storage (MCM)	Injection Time (Months per year)	Maximum Storage Volume Annually (MCM)	Extraction Time (Months per year)	Maximum Periodical Extraction Possible (MCM/day)		
Yortsha	3	8	230	4	4.8	€ 141m	Rls. 200b

Project Introduction	
Underground natural gas storage in Shoorijeh tank 1 st Phase	
Execution Location	Khorasan-e Razavi province
Tank Type	Hydrocarbon
Project Scheduled Time	2010-2013
Maximum daily injection for storage	10 million cubic meters in the 1 st phase
Maximum periodical extraction possible per day	20 million cubic meters in the 1 st phase
Investment Level	2200

(Billion rials)	
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Project Introduction	
Construction of gas pressure booster installations in the 8th trans-Iranian Gas Pipeline	
Execution Location	Fars and Esfahan Provinces
Explanation	Kheyrgoo, Khanj, Jahrom, Arsanjan, Safashahr, Dehshir, Nadushan, Ardestan and Kashan stations
Capacity	About 110 million cubic meters per day for each station
Project Scheduled Time	2009-2013
Investment Level (Billion rials)	8600

Project Introduction	
Ilam Gas processing plant Construction (2nd Phase)	
Execution Location	Ilam province
Explanation	Building gas processing plant capacity of 3.4 MCM /day
Products capacity by product kind	Ilam processing plant capacity was 6.8 MCM/day in the 1 st phase that will increase 3.4 MCM/day and reach 10.2 MCM/day. By-products of this increase include production of 876 million cubic meters of methane, 58 million cubic meters of ethane, 189800 CM of C ₃ ⁺ , 175200 CM of C ₅ ⁺ and 51100 tons of sulfur.
Project Scheduled Time	2011-2014

Investment Level (Billion rials)	1624
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Project Introduction	
Continuation of the 6th trans-Iranian Gas Pipeline from Ahvaz to Dehgolarand Koohdasht-Naftshahr Transmission Line (Gas Export to Iraq)	
Execution Location	Khuzestan, Ilam, Lorestan, Kermanshah and Kordestan provinces
Explanation	Continuation of the 6 th trans-Iranian Gas Pipeline from Ahvaz to Dehgolan/Miandoab with a 600 kilometer length and 56 inch diameter and gas transmission pipeline from koohdasht to Naftshahr (Gas export to Iraq) with a 215 kilometer length and 48 inch diameter together with Abdanan, Kuhdasht and Sanandaj branches with 6 gas pressure boosting stations
Project Scheduled Time	2011-2014
Investment Level (Billion rials)	49362

Project Introduction	
Continuation of the 7th trans-Iranian Gas Pipeline (Iranshahr-Zahedan-Pakistan border)	
Execution Location	Sistan and Baluchestan province
Explanation	Continuation of the 7 th trans-Iranian Gas Pipeline from Iranshahr to Pakistan border with a 315 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, 36 inch line and the secondary lines up to 480 kilometer in length

	and 8-30 inch in diameter.
Capacity	With the implementation of the mentioned project, in addition to supplying natural gas to Sistan and Baluchestan province, gas transmission to Pakistan will be provided.
Project Scheduled Time	2011-2015
Investment Level (Billion rials)	29804

Project Introduction	
The 9th trans-Iranian Gas Pipeline from Dehgolan to Bazargan border	
Execution Location	Kurdestan, East Azarbaijan and West Azarbaijan provinces
Explanation	The 9 th trans-Iranian Gas Pipeline from Dehgolan to Bazargan border with 608 km length and 56 inch diameter together with 5 pressure booster stations
Capacity	With the implementation of the mentioned plan, the necessary infrastructures for transmission of extra transmitted gas to Turkey and the European Union countries will be provided.
Project Scheduled Time	2012-2015
Investment Level (Billion rials)	40638

Project Introduction

The 11th trans-Iranian Gas Pipeline	
Execution Location	Bushehr, Fars, Yazd, Isfahan and Semnan provinces
Explanation	The 11 th trans-Iranian Gas Pipeline in three extensions of Assaluyeh-Khavarani gas pressure booster station with 327 kilometer length and 56 inch diameter, Khavarani gas pressure booster station-Abarkuh with 273 kilometer length and 56 inch diameter and Abarkuh-Damghan with 600 kilometer length and 56 inch diameter together with 7 gas pressure booster stations
Products capacity by product kind	By utilization of the mentioned plan, gas transmission with a 110 million cubic meters per day capacity produced by 13, 20 and 21 phases will be provided.
Project Scheduled Time	2012-2016
Investment Level (Billion rials)	63042

Project Introduction	
Gas transmission line Damghan/Kiasar/Sari	
Execution	Semnan and Mazandaran provinces

Location	
Explanation	Damghan/Kiasar/Sari transmission pipeline with 162 km length and 42 inch diameter in Ghusha of Damghan branched from the 48-inch north and northeast line passes through Damghan, Kiasar, Sari and Neka cities.
Products capacity by product kind	By utilization of the mentioned pipeline, it will be possible to transmit 40 MCM/day gas through the north and northeast 48-inch line to Neka
Project Scheduled Time	2011-2015
Investment Level (Billion rials)	3035

Project Introduction

Gas transmission line Bafgh-Yazd

Execution Location	Yazd province
Explanation	Bafgh-Yazd 100 km, 24 inch transmission line
Products capacity by product kind	By utilization of the mentioned pipeline, it will be possible to deliver natural gas to Bafgh city and the industrial units in the region from the existing Taft-Mehriz pipeline located in the southwest of Yazd city.
Project Scheduled Time	2011-2014
Investment Level (Billion rials)	566

Project Introduction	
Gas transmission line Ahvaz-Khoramshahr	
Execution Location	Khuzestan province
Explanation	Ahvaz-Khoramshahr 138 km, 36 inch transmission pipeline
Products capacity by product kind	The construction of this line aims at supplying for the future industrial units in the region including steel units and oil refinery
Project Scheduled Time	2011-2014
Investment Level (Billion rials)	1400

Project Introduction
Mahshahr gas transmission reinforcing line and Shadgan branch

Execution Location	Khuzestan province
Explanation	Mahshahr gas transmission reinforcing line with a 68 km length and 36 inch line and Shadgan 34 km, 12 inch branch.
Products capacity by product kind	The execution of this plan aims at supplying for Mahshahr power plant, Bandar-e Imam petrochemical development plan and city and Shadgan steel
Project Scheduled Time	2011-2014
Investment Level (Billion rials)	800

Project Introduction	
Gas transmission line Delijan-Khomein	
Execution Location	Markazi province
Explanation	Delijan-Khomein 70 km, 24 inch transmission pipeline
Products capacity by product kind	Supplying gas to cement unit, industrial consumption and the villages on the Khomein route is the goal of this plan
Project Scheduled Time	2011-2014
Investment Level (Billion rials)	450

Project Introduction	
Gas transmission line Bidboland-Gachsaran	
Execution Location	Khuzestan province
Explanation	Bidboland-Gachsaran 94 km, 20 inch transmission line.
Products capacity by product kind	By utilization of the mentioned pipeline, it will be possible to transmit at least 2.4 MCM and at most 9 MCM of sweet gas from Shahid Kaveh gas pressure boosting station located close to Bidboland Gas processing plant to Gachsaran Refinery
Project Scheduled Time	2011-2014
Investment Level (Billion rials)	522

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. The general information about some of these plans are shown below.

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.

Research Plan: Development of Technical knowledge, Design and Construction of Intelligent pigs for oil and gas lines	
Achievements	<ul style="list-style-type: none"> • Native-making the new generation of Intelligent and pigging gas and oil pipelines 3000 km annually by the domestic companies and preventing currency exit up to \$3.5 million per annum • Building a pipeline evaluator system to establish suitable infrastructure for development and native-making of intelligent pig knowledge • Building a test structure of the intelligent pig to test the performance of the intelligent pigs • Compiling the pipeline fault bank and processing the received information
Required Investment Amount	Estimated required credit: \$ 22 million
Time	Plan completion time: 10 years, 5 phases
Internal Rate of Return (IRR)	Capital Return Rate: 19 percent
Demand Estimation	Native-making of at least five kinds of pigs (TFI, MFL, EMAT and UT and active cleaning) and pigging at least 6000 km per annum by the domestic companies

Research Plan: Building Sulfur Recovery Unit (SRU) catalyst and Technical Knowledge Development of Sulfur Producing Units

Achievements	<ul style="list-style-type: none"> • Design and construction of a Sulfur Producing Unit for the Bidboland 1 Gas processing plant • Technical knowledge development of building the Al₂O₃, TiO₂, Co/Mo and modified alumina for the sulfur producing units technical knowledge development • SRU Process technical knowledge compilation and development of new sulfur producing technologies • Accessing the technical knowledge of design and construction of main equipment in sulfur producing units including furnaces and reactors
Required Investment Amount	Estimated required credit: \$ 855,000
Time	Plan completion time: 3 years
Internal Rate of Return (IRR)	Capital Return Rate: 20 percent
Demand Estimation	<ul style="list-style-type: none"> • Building 10 SRU units at least and prevention of buying licenses • Producing about 1000 tons of different kinds of catalysts inside the country

Research Plan: Design and Construction of Odorant Substance Production Unit with a Capacity of 800 tons per annum	
Achievements	Building and launching the odorant substance production unit in the 1 st phase of the South Pars Gas Complex with a capacity of 800 tons per annum
Required Investment Amount	Estimated required credit: \$ 5 million + € 8.5 million
Time	Plan completion time: 24 months
Internal Rate of Return (IRR)	Capital Return Rate: 20 percent
Demand Estimation	<ul style="list-style-type: none"> • Making the production of this strategic substance native • Excess substance export possibility and stopping currency exit to \$1 million per annum <p style="text-align: right;">up</p>

Research Plan: Gas processing plant Design (with national mark)	
Achievements	<ul style="list-style-type: none"> • Accessing technical knowledge of all the units required by the gas processing plants • Prevention of buying several licenses
Required Investment Amount	Estimated required credit: EPCF through entrusting the Khatam-Al-Anbia Base
Time	Plan completion time: 5 years
Internal Rate of Return (IRR)	Capital Return Rate: At least 20 percent
Demand Estimation	<ul style="list-style-type: none"> • Building a natural gas processing plant with a capacity of 20 MCM per day relying on the native knowledge

Research Plan: Using Sulfur in Several Applications and Managing its Usage

<p>Achievements</p>	<ul style="list-style-type: none"> • Accessing the know-how of producing sulfur commodities especially agricultural sulfur and sulfuric asphalt • Modifying the granularizing units in the gas processing plants to produce different agricultural sulfurs and other sulfuric fertilizers needed • Solving the industrial and strategic problems about the excess sulfur of the processing plants and conversion of the substance into new high added- value products and stopping currency exit up to \$43 million per annum • Commercializing sulfur asphalt
<p>Required Investment Amount</p>	<p>Estimated required credit: \$ 675,000</p>
<p>Time</p>	<p>Plan completion time: 7 years (4 years 1st phase, 3 years 2nd phase)</p>
<p>Internal Rate of Return (IRR)</p>	<p>Capital Return Rate: 40 percent</p>
<p>Demand Estimation</p>	<ul style="list-style-type: none"> • Conversion of about 700 thousand tons of excess sulfur produced by the processing plants into agricultural sulfur per annum (reducing the consumption of chemical fertilizers by one-tenth and doubling the extraction amount and promotion of the agricultural products quality and consequently increasing the revenue of the country due to the soil PH modification • Conversion of about 200 thousand tons of sulfur of the processing plants into sulfuric asphalt per annum and substitution of about 30% of the consumed tar into sulfur with a lower price

Research Plan: Identifying the air polluters, carbon dioxide management and execution of the Clean Development Mechanism (CDM) projects

<p>Achievements</p>	<ul style="list-style-type: none"> • Identifying about 5 project potentials to be developed under Kyoto Protocol Clean Mechanism • Registering 2 CDM projects in the gas industries of the country • Receiving about 211000 certificates of annual emission reduction if two projects registered • Revenue of about \$ 21.1 million by selling emission reduction certificates in a ten-year period (assuming \$ 10 for one ton of carbon dioxide)
<p>Required Investment Amount</p>	<p>Estimated required credit: \$ 535000 and € 230,000</p>
<p>Time</p>	<p>Plan completion time: 42 months</p>
<p>Internal Rate of Return (IRR)</p>	<p>Capital Return Rate: regarding the nature of the CDM projects, IRR of these projects is less than 10 percent and it will be justifiable by receiving and selling of the emission reduction certificates</p>
<p>Demand Estimation</p>	<ul style="list-style-type: none"> • Users of the plan are the subsidiary companies of the NIGC and mainly the gas processing companies



Research Plan: technical knowledge development and construction of the Mini Liquefied Natural Gas producing unit (Mini LNG)

Achievements	<ul style="list-style-type: none">• Codification of technical knowledge development and construction of the Mini Liquefied Natural Gas producing unit• Supplying natural gas distribution network in consumption peak time
Required Investment Amount	Estimated required credit: \$ 20 million
Time	Plan completion time: 3 years
Internal Rate of Return (IRR)	Capital Return Rate: 20 percent
Demand Estimation	<ul style="list-style-type: none">• Construction of a Mini LNG unit inside the country for gas distribution to the faraway locations and economizing \$ 1 million• Gas distribution to 1000 residential areas in impassable regions

Research Plan: Integrated Software Development for Design, Optimization and Administration of the Gas Transmission and Distribution Network in Iran

Achievements	<ul style="list-style-type: none"> • Substitution of foreign commercial software with the domestic software required by the National Iranian Gas Company Dispatching Directorate having support and maintenance capability and exiting the sanctions imposed against Iran • optimization of the gas transmission and distribution networks and analysis of the network performance to identify the possible faults
Required Investment Amount	Estimated required credit: \$ 675,000
Time	Plan completion time: 4 years
Internal Rate of Return (IRR)	Capital Return Rate: 20 percent
Demand Estimation	Substitution of the crucial application software packages in the gas transmission network reliable management field including TGNET, SIMONE with the domestic software package (economizing up to \$ 305,000)