

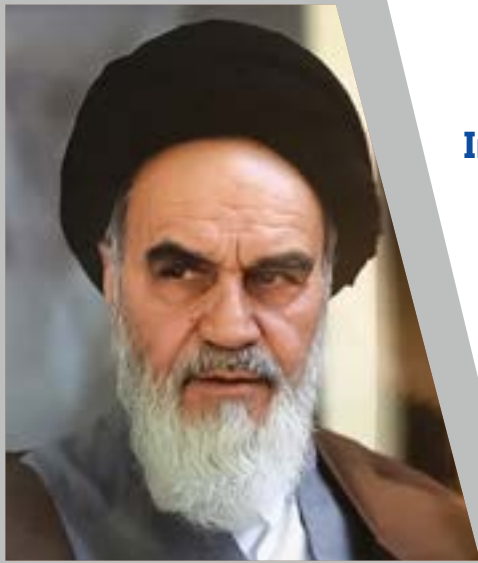


National Petrochemical Company  
Investment Directorate

## Iran's Petrochemical Industry Investment Opportunities

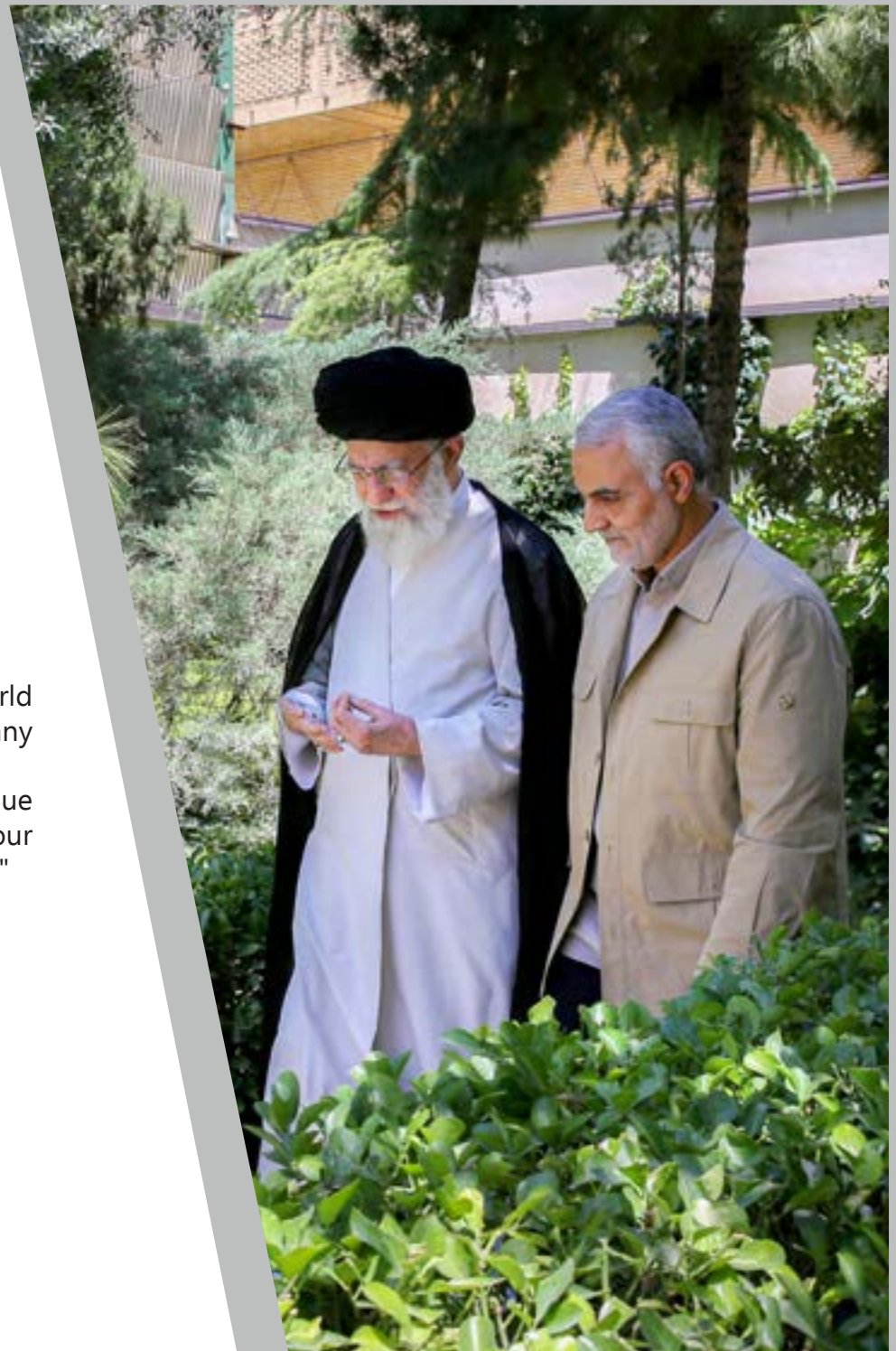
April 2024





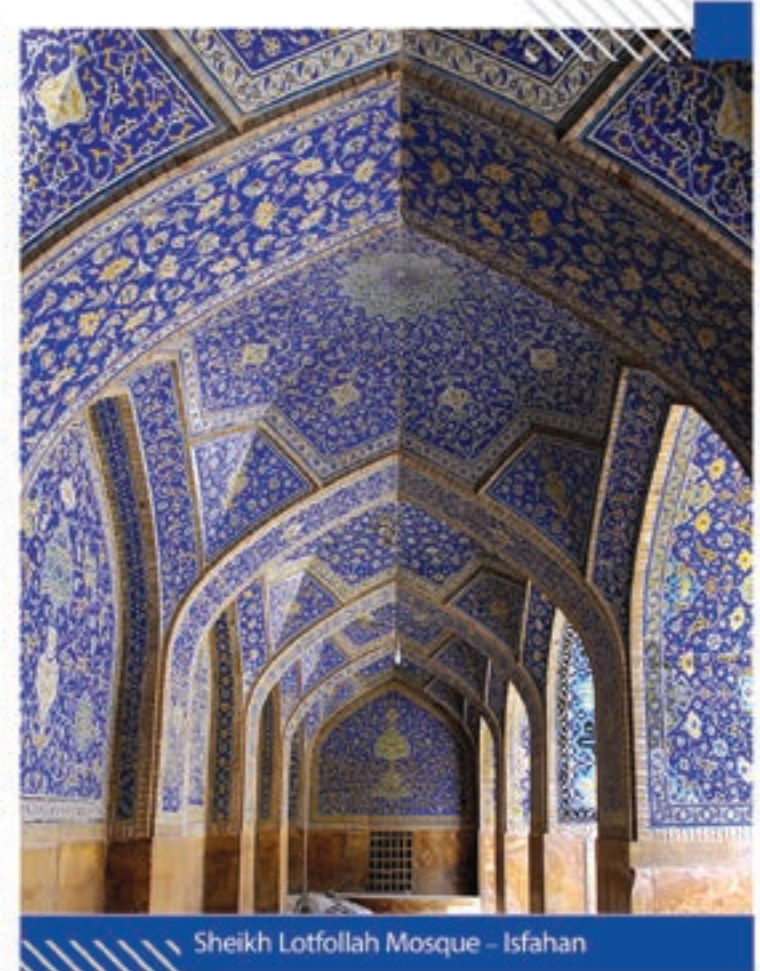
## In The Name Of God

Imam Khamenei stated on March 11th, 1997: "The world relies on oil, and we have no intention of oppressing any country. However, we must take action to highlight the true value of oil for the world. The petrochemical industry in our country can play a crucial role in achieving this goal."

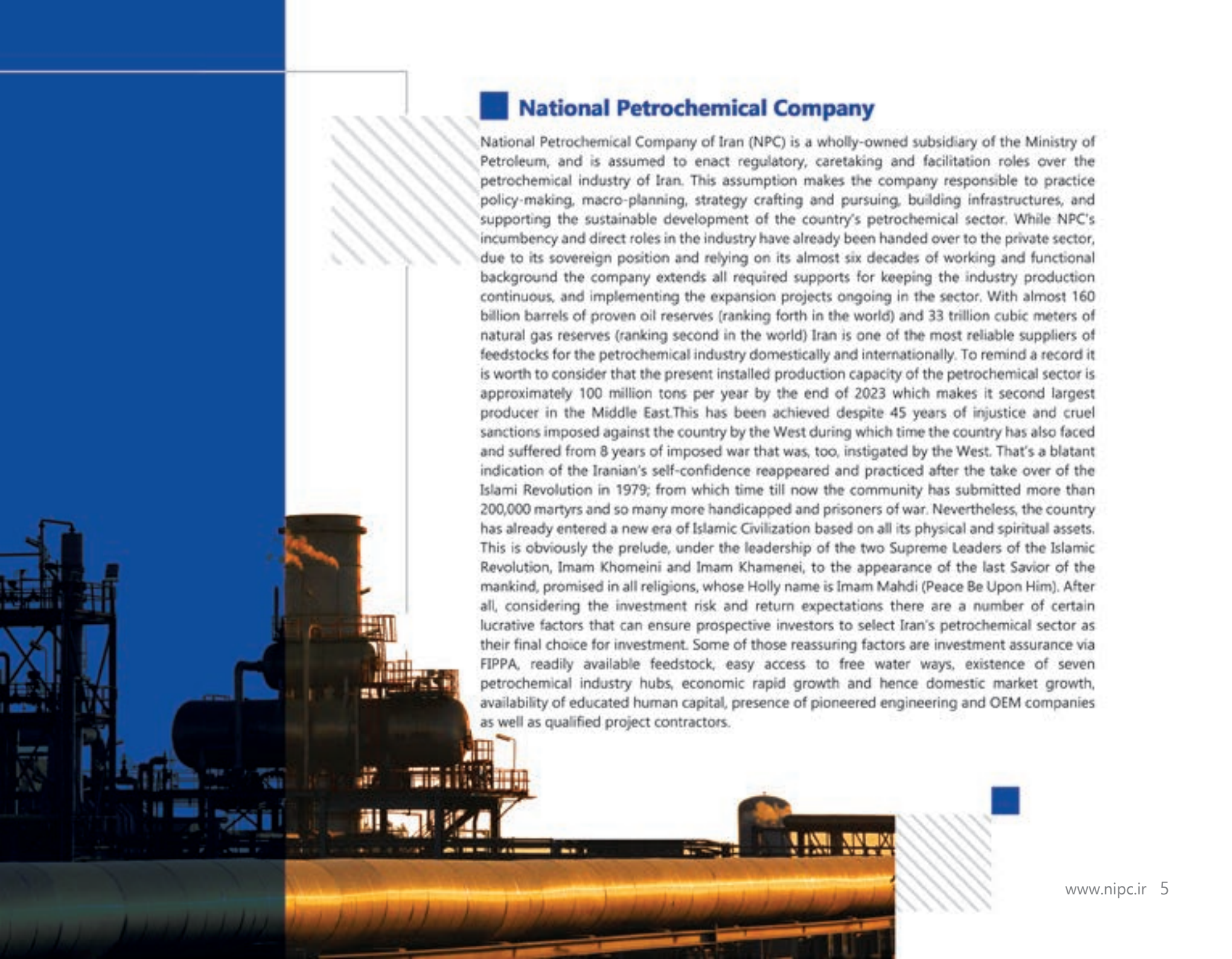


## Iran, one of the oldest cradles of civilization

Iran, with a proven history of more than 7000 years, is known to be one of the oldest cradles of world civilization. It is located in the south west of Asia and embraces a significant portion of the ancient Silk Road, occupying a land area of more than 1.6 million square kilometers. It has a four-season climate and is home to various kinds of plants and animals. The country is geographically well located in the center of the world connecting both west to east and north to south giving it geo-strategic and geo-politic importance. Its neighborhood to the Arabian desert caused it to enjoy the redemptive rays of Islam, brought by the Lord's last messenger, over the last 14 centuries. The community so enjoyed portrays a rich culture that encompasses kindness, compassion, sympathy, and respect for others. Iran is mostly known for its historical contribution in the advancement of chemical and medical science, literature and poetry, artifice, technical and architectural antiques as reflected on its numerous fascinating historical books, buildings, outstanding works and monuments, that makes it eligible to be listed as the World's Heritage Site internationally. To name just a few of Iranian unique and historical characters one can recall Zakaria Razi, Abu Nasr Farabi, Avicenna, Ferdowsi, Molana Rumi, Attar of Nishapur, Saadi Shirazi, Hafez Shirazi, Omar Khayyam, Abu Reyhan Biruni. Their reference books, written several centuries ago, have already been translated to many different languages and will be as the most referred ones for the years ahead. And in the contemporary history of Iran, the country is proud and has the honor to respect martyrs of the country's independence, freedom and self-sufficiency such as Sheikh Fazlullah Noori, Rais Ali Delwari, Lieutenant General Qasim Soleimani, Dr. Mostafa Chamran, Dr. Mostafa Ahmadi Roshan and Arman Ali Verdy who will be renown as the top shining personalities of the country forever. Nowadays, the geo-strategical and geo-political situation of Iran combined with the vast natural reserves and young population of the country gives it a crucial role in the regional and international scenes so that for many initiatives Iran can play a vital role such as revitalizing the ancient Silk Road that can bring together several countries for common good of all. Additionally, the huge hydrocarbon reserves, limestone and iron stone resources, coalmine, goldmine, etc. are inevitably strong contributors to the country's economic growth. Therefore, it's a wise strategy for the country officials and decision-makers to focus on promoting the value chains originated from each of the aforementioned natural reserves in order to harvest the adequate value added for the country's wealth. One of the major industries that can help achieve that outcome is petrochemical industry which is downstream to the oil and gas industries from one perspective and upstream to enormous number of SMEs from another perspective. And that's why it has been expanding continuously over the preceding decades. The industry ranks number one in non-oil export of the country and is a major contributor for supporting its trade balance, employment and GDP growth.



Sheikh Lotfollah Mosque - Isfahan



## National Petrochemical Company

National Petrochemical Company of Iran (NPC) is a wholly-owned subsidiary of the Ministry of Petroleum, and is assumed to enact regulatory, caretaking and facilitation roles over the petrochemical industry of Iran. This assumption makes the company responsible to practice policy-making, macro-planning, strategy crafting and pursuing, building infrastructures, and supporting the sustainable development of the country's petrochemical sector. While NPC's incumbency and direct roles in the industry have already been handed over to the private sector, due to its sovereign position and relying on its almost six decades of working and functional background the company extends all required supports for keeping the industry production continuous, and implementing the expansion projects ongoing in the sector. With almost 160 billion barrels of proven oil reserves (ranking forth in the world) and 33 trillion cubic meters of natural gas reserves (ranking second in the world) Iran is one of the most reliable suppliers of feedstocks for the petrochemical industry domestically and internationally. To remind a record it is worth to consider that the present installed production capacity of the petrochemical sector is approximately 100 million tons per year by the end of 2023 which makes it second largest producer in the Middle East. This has been achieved despite 45 years of injustice and cruel sanctions imposed against the country by the West during which time the country has also faced and suffered from 8 years of imposed war that was, too, instigated by the West. That's a blatant indication of the Iranian's self-confidence reappeared and practiced after the take over of the Islami Revolution in 1979; from which time till now the community has submitted more than 200,000 martyrs and so many more handicapped and prisoners of war. Nevertheless, the country has already entered a new era of Islamic Civilization based on all its physical and spiritual assets. This is obviously the prelude, under the leadership of the two Supreme Leaders of the Islamic Revolution, Imam Khomeini and Imam Khamenei, to the appearance of the last Savior of the mankind, promised in all religions, whose Holly name is Imam Mahdi (Peace Be Upon Him). After all, considering the investment risk and return expectations there are a number of certain lucrative factors that can ensure prospective investors to select Iran's petrochemical sector as their final choice for investment. Some of those reassuring factors are investment assurance via FIPPA, readily available feedstock, easy access to free water ways, existence of seven petrochemical industry hubs, economic rapid growth and hence domestic market growth, availability of educated human capital, presence of pioneered engineering and OEM companies as well as qualified project contractors.

**Investment Directorate**





Development and economic growth of countries is dependent on investment using either domestic financial resources or foreign ones; and this is of special importance for all economy sectors. Due to the country's dependence on the oil, gas and petrochemical industries and their strategic status for supporting its economic growth, investment in these sectors is uniquely paramount. Despite the need for sophisticated technologies under prevailing embargos, and the huge capex requirement for petrochemical plants, investment in the petrochemical sector is an undeniable necessity in order to streamline and smooth the rising trend of this value-creating industry. Investment Directorate, as one of the professional functional pillars of NPC, was formed and organized in order to pursue the major goals of attracting capital, partnership formation, and financing for the Iran's petrochemical projects. Among the most important objectives of this directorate are: identifying, developing and introducing the investment opportunities; performing the business process of handing the projects over to the qualified investors; scheming financing instruments and facilitating the investment business process to take place in the shortest time via one window approach. In this regard, guiding domestic-foreign partnership through assessing technical and financial capabilities of prospective investors, seconding the processes of attracting capital, upholding the current investment funds and establishing new investment funds in line with NPC desired objectives are among major tasks of the directorate. Considering NPC plans to reach a production capacity of 131 and 188 million tons per annum on the years 2028 and 2033 respectively, the industry has the potential to absorb 7 billion Euros annually. In line with this, the investment directorate, in coordination with other departments of NPC, seeks to attract competent investors, and using its legal capacities has provided a suitable atmosphere for the contribution of prospective domestic and foreign investors in the value-creating petrochemical industry of Iran.



Advantages of Iran's Petrochemical

Industry for Investment






Possessing one of the world's largest oil and gas reserves is only one advantage. There are other lucrative advantages, outlined as follows :

- A unique geographical situation that connects the Middle East to Asia and Europe .
- Availability and continuous supply of feedstock.
- Reasonable feed price during the operation period based on approved formulas designed for reasonable discounts.
- Defined step-by-step feed price discounts to encourage the establishment of the petrochemical projects in the under-developed areas and for those completing downstream value chains.
- Tax exemptions in free zones, special economic zones and less developed regions from the plant start up time.
- Access to free and international water ways.
- Accessibility to export and import facilities.
- Possibility of using the potential of the country's growing capital market (now being 120 B€) .
- Developed infrastructures (airport ,railway ,port,jetty ,roads ,etc.) in petrochemical industry hubs.
- Availability of a young, educated, competent and professional human capital.
- A growing domestic market with a population of more than 84 million people and possibility of quick access to neighboring markets.
- Supporting and backing the development of the petrochemical sector by NPC .
- Access to Iranian competent engineering companies, OEMs, suppliers and producers .
- Presence of efficient trade markets such as Mercantile Exchange and Energy Exchange markets for adequate selling and pricing of the products.
- Presence of active and up-to-date university and research networks inside the country.

- Enjoying benefits and customs exemptions in free and special economic zones including:
  - Exporting goods with minimal customs and legal formalities.
  - Importing goods with minimal customs formalities.
  - Allocating land to qualified applicants after evaluation.
  - Guaranteeing foreign investment based on the law of free zones.
  - Providing Security and guarantees of permission to withdraw capital and acquired profit.
  - Tax exemption for the import of goods, equipment, and catalyst.
  - No need for entry visa in free zones.
  - Exemption of first-hand machinery and equipment of production lines from payment of duties and customs duties.
  - Reimbursement of duties and customs for the entry of raw materials used in the production of export goods.
  - Exemption from payment of customs tariffs for the transfer of semi-finished goods into the country.
  
- Benefits for investors under the Foreign Investment Promotion and Protection Act (FIPPA) include:
  - No restrictions on the volume and percentage of foreign investment participation.
  - Possibility of transferring the original capex, profits, and gains coming out of the utilization of capital in the form of currency or goods.
  - Similarity and equivalent treatment with foreign investor as with domestic ones.
  - The possibility of investing in all permissible fields for the private sector.
  - Granting protection coverage to all methods of foreign investment.
  - A Short and quick process of applying for the acceptance and approval of foreign investment.
  - Issuance of multi-year residential permit for investors, managers, foreign experts, and their immediate relatives.



## Iran Petrochemical Industry Projects

### 1.The projects defined by National Petrochemical Company (Investment opportunities) (Table No. 1)

These projects are proposed by the National Petrochemical Company (NPC) based on the strategies and industry priorities for the development of the petrochemical industry, and qualified investors can apply for the process of evaluation and basic authorization.

### 2.Projects with basic license and potential of utilizing finance and accepting foreign partnership. (Table No. 2)

These projects already have basic license and, in line with NPC's development goals, have started implementation activities based on their owner's respective plans . In case of their inquiry,foreign banks and financial institutions can either take up to financing them or enter into partnership with them.

### 3.Projects introduced by the investors

In addition to the Investment opportunities (Table 1), investment applicants can submit their proposals for partnership or grass root projects to be evaluated by Investment Directorate for the eligibility of issuing basic licence.



## Geographical Distribution of Petrochemical Projects and Complexes





## Process of Basic license Issuance

From the beginning of 2022, all applicants for investment in Iran's petrochemical industry must submit their request through the portal at g4b.ir.

The steps for processing applicants' requests are as follows:

**First step:**

- Evaluate the availability and possibility of allocation the feed to the respective project.
- Assess the alignment of the respective project with Iran's petrochemical industry strategic plan.

**Second step:**

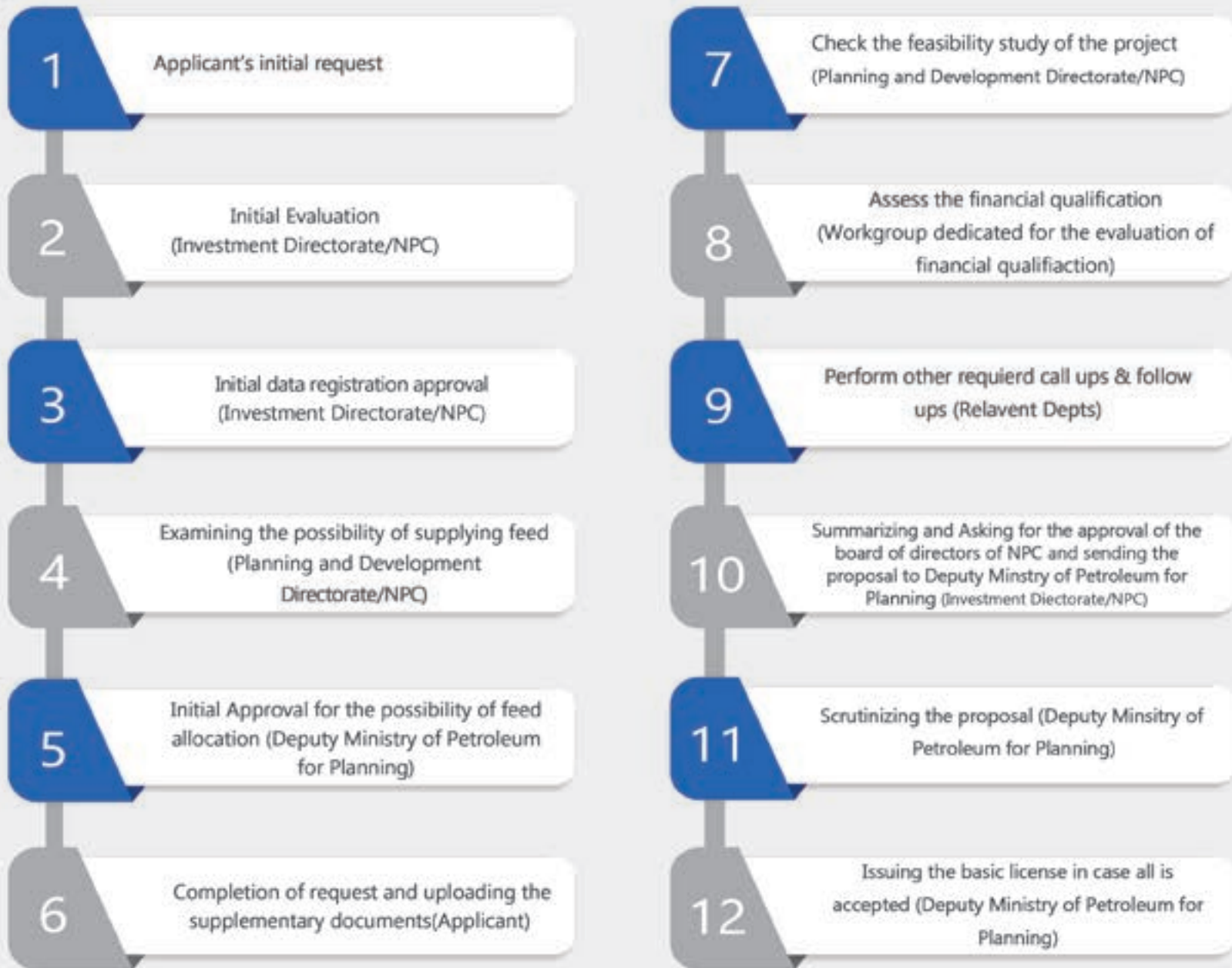
- Verify the applicant company's technical and executive competence.
- Verification of the applicant company's financial capability.
- Obtain necessary inquiries from ministries and other relevant organizations.

**Third step:**

- Report the summary of the project evaluation, including professional and financial quantification to NPC's board of directors and asking for their approval.
- Announce the initial approval of Iran's National Petrochemical Company to the Deputy Ministry of Petroleum for Planning.
- Issue the basic license by the Deputy Ministry of Petroleum for Planning including the obligations of applicant over a certain period of time.

## The process of issuing investment license

Initial registration through the national portal of Iran's business licenses (g4b.ir) then transferring to the Oil industry Portal of projects and licenses (L4P.nipc.ir)





## Investment Directorate reliable consultant of investors

- Investment Directorate of NPC as the main contact point is the ultimate authority for responding to investment applicants in Iran's petrochemical industry.
- All information sent by the applicants are kept safely and securely confidential with The Investment Directorate of NPC.
- For any further information applicants can directly communicate with The Investment Directorate of NPC Via: [investment@nipc.ir](mailto:investment@nipc.ir)

## Investment Opportunities

Table No.1

Iran's Petrochemical Industry Investment Opportunities (Table No.1 Cont.)						April 2024
No.	Project	Feed	Capacity (KT/Y)	Products	Capacity (KT/Y)	Estimated Investment * (Million USD)
1	MTO (DMTOIII)	Methanol	1650	Ethylene Propylene LPG C5+	320 300 42 7	350
2	Styrene Monomer	Benzene Ethylene**	235 85	Styrene Monomer	300	225
3	VAM	Ethylene** Acetic Acid	51 104	VAM	150	60
4	Ephichlorohydrin	Propylene** Chlorine	24 66	Ephichlorohydrin	30	35
5	Poly Vinyl Alcohol	VAM	40	Poly Vinyl Alcohol Acetic Acid Recycled	20 25	70
6	Phenol/ Acetone	Propylene** Benzene	65 115	Phenol Acetone	125 75	145
7	Acrylonitrile	Propylene** Ammonia Caustic H2SO4	120 55 15 10	Acrylonitrile NaCN Ammonium Sulfate Acetonitrile	110 20 15 5	140
8	Methionine	Propylene** H2S Methanol Ammonia	22 13 11 12	Methionine	50	85

\* Battery Limit investment

\*\* Supply of Ethylene and Propylene feedstock is possible only through MTO and MTP units for which there is no designated downstream projects, or there are supplied via import.



## Investment Opportunities

Iran`s Petrochemical Industry Investment Opportunities(Table No.1 Cont.)						April 2024
No.	Project	Feed	Capacity (KT/Y)	Products	Capacity (KT/Y)	Estimated Investment * (Million USD)
9	Mega MTG	Methanol	1650	Gasoile LPG	600 82	270
10	MTG1	Methanol	550	Gasoile LPG	200 27	130
11	MTG2	Methanol	550	Gasoile LPG	200 27	130
12	MTG3	Methanol	550	Gasoile LPG	200 27	130
13	MTG4	Methanol	550	Gasoile LPG	200 27	130
14	MTG5	Methanol	550	Gasoile LPG	200 27	130
15	Chlor-alkali	NaCl	450	Caustic Chlorine	280 250	190
16	EDC/VCM	Ethylene** Chlorine Oxygen	140 180 -	VCM	300	120

\* Battery Limit investment

\*\* Supply of Ethylene and Propylene feedstock is possible only through MTO and MTP units for which there is no designated downstream projects, or there are supplied via import.

## Investment Opportunities

Iran`s Petrochemical Industry Investment Opportunities(Table No.1 Cont.)						April 2024
No.	Project	Feed	Capacity (KT/Y)	Products	Capacity (KT/Y)	Estimated Investment * (Million USD)
17	PVC	VCM	300	PVC	300	210
18	Acrylic Acid	Propylene** Oxygen	65 -	Acrylic Acid Glacial	93	96
19	SAP	Acrylic Acid Glacial Caustic 100%	93 39	SAP	120	100

\* Battery Limit investment

\*\* Supply of Ethylene and Propylene feedstock is possible only through MTO and MTP units for which there is no designated downstream projects, or there are supplied via import.

Note : Due to changes caused by inflation, investment figures are presented in hard currency form. In practice, about 40% of the total project investment will be spent in Iranian Riyal and about 60% in hard currency.

## Projects

### Iran's petrochemical industry

Table No.2

Petrochemical projects below 20 % progress								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
1	Aria Oil & Gas Development	Ethane LPG Light Naphtha Heavy Naphtha	Olefin and Aromatic	Ethylene	1320	KT/Y	Siraf	5631
				Propylene	345			
				HDPE	1000			
				LLDPE	300			
				PP	300			
				Paraxylene	897			
				Benzene	480			
				Butadiene	136			
2	Hormoz Persian Gulf Petrochemical	Ethane Butane	Olefin and downstream chain	Ethylene	2516	KT/Y	SouthPars	4056
				Propylene	632			
				C4 cut	592			
				HDPE	1200			
				LDPE	300			
				HD/LLDPE	600			
				PP	600			
				Butadiene	132			
				Fuel Oil (Mazut)	58			
				Pygas	230			
				C4 Raffinate	460			
Hydrogen	4							
3	Almas Mahshahr Petrochemical co.	Ethane C3 C4 C5 +	Olefin and downstream chain	Ethylene	1260	KT/Y	Mahshahr	2812
				HDPE	300			
				HD/LLDPE	600			
				EG	500			
				PP	420			
				Butadiene	85			

\* The information of a number of projects are being changed. The latest changes will be included in the brochure once they are finalized.

## Projects

### Iran's petrochemical industry

Petrochemical projects below 20 % progress								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
4	Kian Petrochemical	Ethane LPG C3+	Olefin and Aromatic	Ethylene	1260	KT/Y	South Pars	2798
				Propylene	327			
				Butadiene	177			
				Benzene	202			
				HDPE	500			
				Styrene Monomer	265			
				Propylene Oxide	150			
				Oxo Alcohol	275			
5	Tadbir Energy Development Group	Naphta	Olefin and downstream chain	Ethylene	344	KT/Y	Bandar Abbas	2082
				Propylene	222			
				HDPE/LLDPE	300			
				Acrylonitrile	100			
				Nitrile Rubber	40			
				MTBE	54			
				HCN	10			
				Polyether Polyol	150			
				Styrene	170			
				Paraxylene	46.5			
Toluene	54							
6	Vista Energy Arghavan Petrochemical Co.	Ethane Butane	Olefin and downstream chain	Ethylene	900	KT/Y	Kangan	1990
				Propylene	88			
				HDPE	300			
				LLDPE	600			
				C4cut	72			
				Pygas	46			
				CFO	25			
7	Pardis Azarbajjan Petrochemical Industries Co.	NG	GTPO	Methanol	1850	KT/Y	Maku	1962
				MTO	730			
				PP	480			
				Polyethylene	250			

## Projects

### Iran's petrochemical industry

Petrochemical projects below 20 % progress								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
8	Soroush Energy Paydar*	NG	GTO & Chain	Methanol	1650	KT/Y	Parsian	1824
				Ethylene & Propylene	622			
				Polyethylene	250			
				PP	310			
				EPDM	50			
9	Zagros Petrochemical	Methanol 1-Hexene Caustic (100%) NG	MTO and downstream chain	Propylene	403	KT/Y	Parsian	1711
				Ethylene	242			
				PP	300			
				HDPE	125			
				LLDPE	125			
				Acrylic Acid	135			
				SAP	175			
				C4	36			
				C4 +	33			
LPG	14							
10	Lorch Petrochemical Industries	NG	GTP and downStream chain	Methanol	1650	KT/Y	Parsian	1637
				Propylene	470			
				PP	300			
				Propylene Oxide	200			
				Polyether/ Polyol	220			
				Ethylene Oxide	22			
				Pygas	179			
				Ethylene	20			
				LPG	38			
11	Parsian Mapna Pet- rochemical Complex	NG	GTPO	Methanol	1650	KT/Y	Parsian	1595
				Ethylene	645			
				Polyethylene	240			
				PP	405			

\* Physical Progresses for Phase 1 of the project

## Projects

### Iran's petrochemical industry

Petrochemical projects below 20 % progress								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
12	Qeshm International Petrochemical Industries Co.(QIPICO)	NG	GTPP	Methanol Propylene PP Pygas Ethylene LPG	1650 470 482 180 20 36	KT/Y	Qeshm	1515
13	Fanavaran Petro olefin Co.	NG	GTPO	Methanol Ethylene HDPE Propylene PP	1200 320 320 292 300	KT/Y	Mahshahr	1308
14	Kimaia Andimeshk Petrochemical Industries. Co (phase 1&2)	NG	Ammonia and Urea and MEG	Urea Ammonia MEG (textile) MEG (Mixture)	1075 680 200 26	KT/Y	Andymeshk	1300
15	PetroFrahang	Methanol Caustic soda	MTP and downstream chain	Propylene Ethylene Pygas LPG PP Acrylic Acid Poly Acrylic Acid (Glass) Super Absorbent polymer	470 20 180 36 380 161 155 200	KT/Y	Parsian	1267
16	Persian Gulf Bidboland Gas Refining Co.	Propane Ethylene	PDH/PP	Propylene PP	600 600	KT/Y	Behbahan	1160

## Projects

### Iran's petrochemical industry

Petrochemical projects below 20 % progress								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
17	Kangan Petrochemical Development	Propane	PDH/PP	Propylene PP	600 600	KT/Y	Kangan	1063
18	Rahpouyan Asre Khavarmiyaneh Trading Co.	NG	GTPP	Methanol Propylene PP	1650 500 500	KT/Y	Jask	1046
19	Tadbir Petrochemical Industrial Development	Propane	PDH/PP	Propylene PP Acrylic Acid Super Absorbent Polymer	450 300 145 100	KT/Y	South Pars	1015
20	Fateh Kimia Petrochemical Co.*	NG	Chemical Park	Methanol Propylene Ethanol PP Super Absorbent Polymer Acetic Acid Ammonia Acrylic Acid LPG Pygas	1000 135 100 80 100 150 60 80 10 51	KT/Y B/d KT/Y	Dayer	999
21	Pars Petrochemical Co.	Propane	PDH/PP	Propylene PP	600 500	KT/Y	SouthPars	932
22	Razavi oil and Gas Development	Propane	PDH/PP/ACN	Propylene PP Acrylonitrile	450 480 130	KT/Y	Kangan	923

\* Physical Progresses for Phase 1 of the project

## Projects

### Iran's petrochemical industry

Petrochemical projects below 20 % progress								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
23	Petro Pardis Sina	Propane	PDH/PP/ACN	Propylene	450	KT/Y	Kangan	848
				PP	300			
				Acrylonitrile	150			
				Ammonium Sulfate	16			
				Sodium Cyanide	30			
				Acetonitrile	5			
24	Setareh Parsian Petrochemical	Methanol Ammonia Sulfuric Acid Caustic soda	MTP/ PP/ ACN	Propylene	470	KT/Y	Parsian	845
				Ethylene	24			
				PP	300			
				Pygas	178.2			
				LPG	36			
				Acrylonitrile	142.4			
				Sodium Cyanide	25.5			
				Acetonitrile	4.2			
Ammonium Sulfate	14							
25	Besat kordestan Petrochemical Co.	p-Xylene Ethylene glycol Acetic acid	PTA-PET	PET -Fiber grade	500	KT/Y	Bijar	810
				PTA	440			
26	Kalhorshimi Mahidashte Kermanshah	Propane Ammonia Caustic Soda 100% Sulfuric acid	PDH/PP/ACN	Propylene	450	KT/Y	Parsian	795
				pp	300			
				Acrylonitrile	140			
				Sodium Cyanide	26			
				Ammonium Sulfate	15			
				Acetonitrile	4			



## Projects

### Iran's petrochemical industry

Petrochemical projects below 20 % progress								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
27	Pishro Paydar Parsian Petrochemical	NG	Phenol & Acetone	Phenol	125	KT/Y	Parsian	622
				Acetone	76.8			
				Polycarbonate	100			
				Methyl Methacrylate	50			
				Poly Methyl Methacrylate	20			
				Alpha-Methylstyrene	7.4			
				Hydrogen Cyanide	4.5			
Carbon Monoxide	23.3							
28	Propylene and Polypropylene Entekhabe Kangan	Propane	PDH/PP	Propylene	700	KT/Y	Kangan	614
				PP	700			
29	Tadbir Energy Development Group (Chemical Fertilizer)	NG	Chemical fertilizer	Ammonia	400	KT/Y	Bandar Abbas	604
				Ammonium Sulfate	300			
				Urea Ammonium Nitrate	300			
				Ammonium Nitrate	500			
				Calcium Ammonium Nitrate	350			
30	Golestan Petrochemical Industries	NG	Ammonia and Urea	Ammonia	677	KT/Y	Aghghala	591
				Urea	1073			
31	Arvand Petrochemical Co	EDC Ethylene Oxygen	PVC	PVC VCM	300 40	KT/Y	Mahshahr	576

## Projects

### Iran's petrochemical industry

Petrochemical projects below 20 % progress								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
32	Fakoor Sanat Tehran Engineering Co.	Methanol Caustic Soda NG	MTP	Propylene	120	KT/Y	Chabahar	570
				Acrylic Acid	80			
				Acrylic Acid Aster	36			
				Super Absorbent Polymer	80			
				2EH	23			
				n-Butanol	66			
				Isobutanol	11.5			
				LPG	10			
		Pyrolysis Gasoline	46					
33	Mahtab Petrochemical Development	Propane Ethylene Oxide	PDH/PP	Propylene	155	KT/Y	Parsian	552
				Propylene Oxide	180			
				Flexible Polyol	187			
				Propylene Glycol	19			
				Dipropylene Glycol	2			
				Tripropylene Glycol	0.2			
34	Kosar Sanatt Parsian Technical Engineering	Propylene Ethylene oxide ENB Ethylene Glycerol Oxygen Sodium Hydroxide (50%) Hydrogen	Propylene Park	Acrylic Acid	80	KT/Y	Mahshahr	500
				Glacial Acrylic Acid	48			
				Super Absorbent Polymer	80			
				Propylene Oxide	115			
				Polyol	100			
				Propylene Glycol	30			
				EPDM	40			
35	Idea Energy Civil Development	Propane Ethylene NG	PDH and downstream chain	Propylene	150	KT/Y	South Pars	436
				PP	100			
				Acrylic Acid	80			
				Butyl Acrylate	80			
				Super Absorbent Polymer	50			

## Projects

### Iran's petrochemical industry

Petrochemical projects below 20 % progress								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
36	Pishgaman Siraf Refinery Development Co.	Heavy Naphtha	Aromatic	Benzene	106	KT/Y	Kangan	435
				Toluene	203			
				Mixed Xylenes	289			
				Heavy Aromatic Raffinate	161			
				LPG	38			
37	Kourosh Petrochemical Industries Development	Propane	PDH and Acrylates Chain	Propylene	150	KT/Y	Mahshahr	427
				Acid Acrylic	80			
				Acrylic Esters	60			
				Super Absorbent Polymer	45			
38	Kazeroun Petrochemical	Ethylene	PE	HDPE/LLDPE	300	KT/Y	Kazeroun	336
39	Persian Gulf Company (Andimeshk Ibnesina)	Ethylene	EO & Chain	Ethylene Oxide	120	KT/Y	Andimeshk	336
				Ethanolamine	50			
				MEG	8			
				Glycol Ether	50			
				Ethoxylate	100			
40	Petrokimiya Ibnesina*	Methanol PTA Buthane	Maleic anhydride PBT, BDO	Maleic Anhydride	110	KT/Y	Mahshahr	330
				Butanediol	75			
				PBT	60			
				Tetrahydrofuran	18			
				Recycled Isoboutan	50			
41	Hemmat Petrochemical	Carbon dioxide Ammonia	Urea	Urea	1073	KT/Y	South pars	322

\* Physical Progresses for Phase 2 of the project

## Projects

### Iran's petrochemical industry

Petrochemical projects below 20 % progress								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
42	Ibn-e-Sina Hamedan Industries	Ethylene	EO & Chain	Ethylene Oxide MEG Ethoxylate Glycol Ether Ethanolamine	110 11 101 55.2 31	KT/Y	Famenin	320
43	Nakhl Asmari Petrochemical Co.	Methanol Terephthalic acid Adipic acid Oxygen	PBAT	BDO PBAT Acetylene Formaldehyde 37%	44 60 13.6 88	KT/Y	Mahshahr	263
44	Zagros Petrochemical Co.	Methanol NG	Synthesis Ethanol	Synthesis Ethanol	300	KT/Y	Asalouyeh	255
45	Persian Gulf Star	Hydrogen	Ammonia	Ammonia	450	KT/Y	Parsian Gulf Special Eco- nomic Zone	227
46	Fajre Kerman Petrochemical Complex.	NG	Methanol & Chain	Methanol Polyacetal Formaldehyde	66 40 45	KT/Y	Kerman	212
47	Petrokimiaye Qeshm	Methanol	MTPP	PP Pygas LPG	120 46 10	KT/Y	Parsian	203
48	Nakhl Asmari Petrochemical	Methanol Ethylene glycol	Polyacetal (POM)	Polyacetal (POM)	40	KT/Y	Mahshahr	200

## Projects

### Iran's petrochemical industry

Petrochemical projects below 20 % progress								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
49	Boalisina Petrochemical	Benzene Ethylene	Styrene Monomer	Styrene Monomer Toluene Hydrogen	300 6 11	KT/Y	Mahshahr	192
50	Kermanshah Petrochemical	Urea	Crystal Melamine	Crystal Melamine	60	KT/Y	Harsin	155
51	Ghadir Petrochemical	NACL	Chlor-alkali	Caustic Chlorine Liquid Chlorine Hydrochloric Acid (33%) Hydrogen	170 90 60 3.6 4	KT/Y	Mahshahr	142
52	Tabriz Petrochemical	Benzene Ethylene	EB/SM	Styrene Monomer Ethylbenzene	100 106	KT/Y	Tabriz	128
53	Farsa Chimie Petrochemical Co.	PTA MEG	PET	PET Textile Grade PET Bottle Grade PET Film Grade	150 117 33	KT/Y	South pars	123
54	Sheikh Bahaie Petrochemical	Raffinate Ethanol Isobutane	Alkylate & ETBE	Alkylate ETBE Butane 1 Normal butane	44 17 26 24	KT/Y	Mahshahr	105
55	Petro Pardis Jonoub	Propylene	PP	PP	50	KT/Y	Zahedan	100

## Projects

### Iran's petrochemical industry

Petrochemical projects below 20 % progress								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
56	Rangdaneh Sirjan	CFO NG (Feed)	Carbon black- Naphthalene	Carbon black-Naphthalene	30 2.5	KT/Y	South Pars	83
57	Hazhir Sazeh Iranian	Ethylene	PE	LDPE	200	KT/Y	Asalouyeh	71
58	Modaberan Shimi Chemical	Normal Butane Styrene Monomer Phthalic- anhydride Dicyclopenta- diene Diethylene glycol	Maleic Anhy- dride	Maleic Anhydride Fumaric Acid Polyester Resin Isobutane	20 4 15 15.8	KT/Y	Mahshahr	62
59	Sadra Kouzestan Petrochemical	Pygas MTBE Hydrogen	Benzene and Gasoline	Gasoline Benzene CFO	47.53 36.6 1.7	KT/Y	Mahshahr	58
60	Servat Paya Managment	Butane	Maleic Anhydride	Maleic Anhydride Isobutane	20 23	KT/Y	Persian Gulf Industrial Park	55
61	Talash Mehrabanan Petrochemical	Propylene	PP	PP	30	KT/Y	Nahavand	41
62	Exir Danesh Arash Chemical Industries	Mono ethanol- Amine Ammonia NG	Ethyleneamines	EDA DETA AEEA Piperazine Other amines	10.05 1.45 1.5 0.5 70	KT/Y   KG/Y	Petrochemical Downstream Industrial Park	40

## Projects

### Iran's petrochemical industry

Petrochemical projects below 20 % progress								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
63	Pishgaman pars Hormoz Gas Liquefaction co.	Ethane	Ethane Liquefaction	Liquid Ethane	240	KT/Y	SouthPars	32
64	Petro Exir kangan	Condensate (C5*)	Solvent pentane	Pentane Isopentane Hydrocarbon residues	22.4 31.2 26.4	KT/Y	Kangan	28
65	Takteh Jamshid Petrochemical Industries	C4 Cut Solvent NMP Sodium Nitrite Silicone Oil TBC	Butadieane - Raffinate	Butadieane Raffinate	35 35	KT/Y	Mahshahr	26
66	Mahan Shimi Zagros	Ammonia Methanol	Formaldehyde	Formaldehyde (37%) Paraformaldehyde Hexamin	40 8 3	KT/Y	Eslam Abad Gharb	25
67	Damoun Palayesh Giti	Pygas	Benzene and Toluene	Benzene Toluene Gasoline octane Mazut	34.2 7.6 32 4	KT/Y	Mahshahr	19
68	Petro Exir Atlas	Styrene Monomer	GPPS & HIPS	GPPS HIPS	20 20	KT/Y	Torbat-e Heydariyeh	13
69	Hormoz Star Petrorefinery	Caustic Soda Ammonia	sodium cyanide	Sodium Cyanide Hydrogen Cyanid	7 3.9	KT/Y	Lamerd	10
70	Isfahan Petro Chemical	Phthalic Anhydride DMT 2EH	Plasticizer	Plasticizer	30	KT/Y	Isfahan	5

## Projects

### Iran's petrochemical industry

Petrochemical projects with 20 - 50 % progress(Table No.2 Cont.)								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
1	Damavand Energy Asaloyeh Phase 1	NG	UT	UT	-	-	South Pars	3000
2	Sina Chemical Industries Development	NG	GTPO	Methanol MTO PP Polyethylene	1650 645 420 225	KT/Y	Mokran	1887
3	Dehloran Petrochemical*	C2 + Butene 1	Olefin and downstream chain	Ethylene Propylene Pygas HDPE PP LLDPE Mazut	620 140 43 300 160 300 6.7	KT/Y	Dehloran	1179
4	Mehr Petro Kimiya Petrochemical	Propane	PDH/PP	Propylene PP	455 450	KT/Y	South Pars	908
5	Kharg Petrochemical**	NG	Methanol and chain	Methanol downstream chain(under study)	1400	KT/Y	Kharg	883
6	Alaye Mahestan Petrochemical	Propane	PDH/PP	Propylene PP	450 450	KT/Y	Kangan	727

\*Physical progress for phase 1 of the project

\*\* Capex estimation is approximate.



## Projects

### Iran's petrochemical industry

Petrochemical projects with 20 - 50 % progress(Table No.2 Cont.)								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
7	Eslamabad Gharb Petrochemical Industries	NG	GTPP	Methanol Propylene PP	660 120 120	KT/Y	Eslam Abad Gharb	545
8	Hirsa Polymer Sahand	Propane	PDH/PP	Propylene PP	300 300	KT/Y	Mahshahr	518
9	Rayan Polymer Pouya	Ethylene	HDPE	HDPE	300	KT/Y	South Pars	343
10	Dehdasht Petrochemical Industries	Ethylene Butene 1	HDPE	HDPE	300	KT/Y	Kelacho	284
11	Arya Sasol Polymer	Ethylene	PE	MD/HDPE	300	KT/Y	South Pars	267
12	Holeylan Petrochemical	Ethylene	PE	HDPE	200	KT/Y	Holeylan	105
13	Petrosamin Sepahan Chemical Industries	Propylene	2EH	2EH Normal Butanol Isobutanol	40 17 8	KT/Y	Shahreza	85
14	Petro Sanaat Pishtaz	C4 (Cuts)	ETBE	ETBE	130	KT/Y	Shazand	45
15	Ehda Polymer Pak	Ethylene Butene 1	MLLDPE	Methallocene- LLDPE	36	KT/Y	Mahshahr	29

## Projects

### Iran's petrochemical industry

Petrochemical projects with 50 - 70% progress (Table No.2 Cont.)								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
1	Badre Shargh Petrochemical Complex*	NG	GTO & Chain	Methanol	1650	KT/Y	Mokran	2004
				Ethylene & Propylene	650			
				PP	300			
				Ethylene Oxide	350			
				Ethylene Glycol	266			
				2EH	130			
				Ethanolamines	60			
Isobutyl Alcohol	14							
2	Siraf Energy Investment	NG	Methanol	Methanol	1650	KT/Y	Dayer	677
3	Zanjan Petrochemical Industries	NG	Ammonia and Urea	Ammonia	677	KT/Y	Ijrud	607
				Urea	1073			
4	Lavan Industry Development	NG	Methanol & Ammonia	Methanol	1000	KT/Y	South Pars	400
				Ammonia	300			
5	Seraj Gostaran Rejal	Propylene	PP	PP	291	KT/Y	Mahshahr	170
6	Tabriz Petrochemical Co.	Ethylene	PE	HDPE	300	KT/Y	Tabriz	128
7	Petronad Asia Petrochemical Co.	Ethylene Oxide	EO & chain	Ethylene oxide	50	KT/Y	Mahshahr	108
				Ethoxylates	80			
				Sulfuric acid	30			
				Ethanolamines	18			
				Choline chloride	7.5			
				Pharmaceutical glycerin	16.9			
EG	7.5							
8	Negin Songhor Chemical Industries	Ammonia Methanol	Methylamine	Methylamines	23	KT/Y	Songhor	58

## Projects

### Iran's petrochemical industry

Petrochemical projects with 20 - 50 % progress(Table No.2 Cont.)								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)

9	Petro Zomorod Sabz Industries	Methanol Formalin	Methylal	Methylal	9	KT/Y	Mahshahr	2
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Petrochemical projects higher than 70% progress(Table No.2 Cont.)								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)

1	Boushehr Petrochemical Co.*	Rich Gas	Olefin & MEG	Ethylene	1000	KT/Y	South Pars	3161
				HDPE	310			
				Ethylene Glycol	554			
				Acetic Acid	300			
				VAM	250			
				Methanol	1650			
c3 +	85							
				Sulfor granules	125			

2	Kangan Petrochemical Development**	Ethane	Olefin and downstream chain	Ethylene	1000	KT/Y	Kangan	1314
				HDPE	810			
				LLDPE	90			
				C3 +	89			
				EPDM	70			

3	Dehloran Petrorefinery (NGL3100)	Associated Gas	NGL3100	Sweet Natural Gas	159	MMcf/d KB/d B/d T/d	Cheshmehk-hosh	1165
				C2+	40			
				Gas Condensate	850			
				Sulfur	400			

4	Padjam Polymer Development Co.	Styrene Monomer Butadiene Acrylonitrile	ABS/Rubber	ABS Rubber	200 60	KT/Y	South Pars	648
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\* Physical progress for Phase 1 of the project

\*\* Physical progress for Phase 2 of the project

## Projects

### Iran's petrochemical industry

Petrochemical projects higher than 70% progress (Table No.2 Cont.)								April 2024
Row	Company	Feed	Type	Product	Capacity	Unit	Location	Capex (Million USD)
5	Hengam Petrochemical Co.*	NG	Urea	Urea	726 1072	KT/Y	South Pars	573
6	Persian Gulf Appadana Petrochemical Co.	NG	Methanol	Methanol	1650	KT/Y	South Pars	551
7	Dena Petrochemical	NG	Methanol	Methanol	1650	KT/Y	South Pars	457
8	Kermanshah Petrochemical (phase 2)	NG	Ammonia & Urea	Ammonia Urea	396 660	KT/Y	Harsin	413
9	Salman Farsi	Propane	PDH	Propylene	450	KT/Y	Mahshahr	366
10	Sadaf Asalouyeh	Styrene Monomer Butadiene	ESBR	ESBR	136	KT/Y	South Pars	360
11	Alvand Polypropylene	Propylene	PP	PP	180	KT/Y	Shazand	126
12	Kimia Sanayeh Petro Entekhab	Styrene Monomer	PS	EPS	50	KT/Y	South Pars	65
13	Nakhl Asmari	Methanol	Pentaerythritol	Formalin Pentaerythritol Acetaldehyde	66 23.3 5.6	KT/Y	Mahshahr	59
14	Arman Sepahan	Propylene	IPA	Isopropyl Alcohol Di-Isopropyl Ether	33 3.3	KT/Y	Shahreza	43
15	Kimia Sanayeh Dalaho	Styrene Monomer	PS	HIPS GPPS	60 60	KT/Y	South Pars	27

\* Physical progress for urea unit.

## Value Chain Projects

### Propylene | Methionine production Project\*

Nominal Capacity (KT/y)

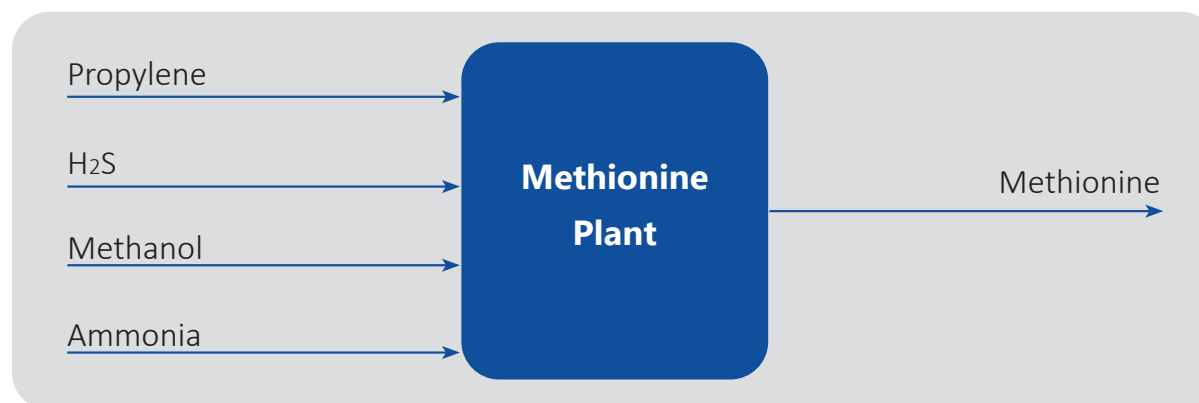
100

Amount of Investment (mn\$)

140

Annual Sales (mn\$)

310



#### Status of License

Licensor	Status
Sumitomo, Degussa, Adisseo, Novus, Dupont	Negotiable

#### Required Feedstocks

Source of feedstock supply	Type of feedstock	The amount of feedstock (KT/y)
Strategic plans	propylene	44
Existing complexes	H <sub>2</sub> S	25
Existing complexes	Methanol	22
Existing complexes	Ammonia	24

#### Products

Product Name	Production Capacity (KT/y)	The Final Salable Product (KT/y)		Value (based on the prices in the 2016s) (mn\$)	
		Domestic	Export	Domestic	Export
Methionine	100	40	60	124	186

Consumer Market Concentration	Required land (Hectare)	Water Consumption (MM <sup>3</sup> /y)	Required Gas(fuel) (MM <sup>3</sup> /d)	Employment during construction (person)
Tehran, Khuzestan, Fars, Razavi Khorasan, Isfahan, Alborz, Qazvin, Semnan, Zanjan, Bushehr	8	2	0.47	225

\*. The details of value chain projects related to investment opportunities are presented solely for the purpose of familiarizing the investors with the overall outlines of the plans and do not create any obligation for this company

## Value Chain Projects

### Methanol | Polyacetal production Project

Nominal Capacity (KT/y)

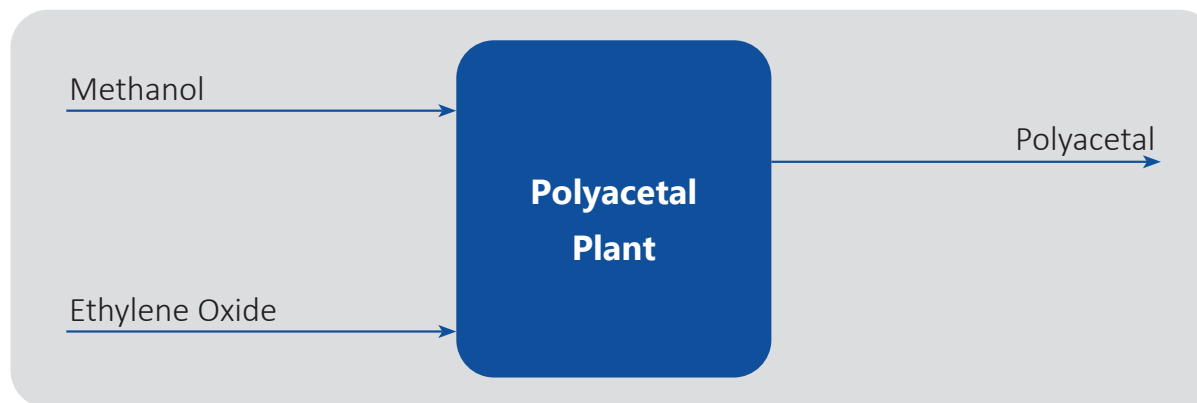
40

Amount of Investment (mn\$)

105

Annual Sales (mn\$)

80



#### Status of License

Licensor	Status
Ticona, Dow Dupont, Asahi, BASF, Mitsubishi Gas Chemical, Celanese, Daicel Chemical	Under Negotiation

#### Required Feedstocks

Source of feedstock supply	Type of feedstock	The amount of feedstock (KT/y)
Petrochemical Plants In Zagros and Asaluyeh and methanol units	Methanol	60
Morvarid and Maroon petrochemical plants	Ethylene oxide	2

#### Products

Product Name	Production Capacity (KT/y)	The Final Salable Product (KT/y)		Value (based on the prices in the 2016s) (mn\$)	
		Domestic	Export	Domestic	Export
Polyacetal	40	12	28	24	56

Consumer Market Concentration	Required land (Hectare)	Water Consumption (MM <sup>3</sup> /y)	Required Gas(fuel) (MM <sup>3</sup> /d)	Employment during construction (person)
Kermanshah	10	0.5	0.01	700

## Value Chain Projects

### Methanol | Acetic Acid production Project

Nominal Capacity (KT/y)

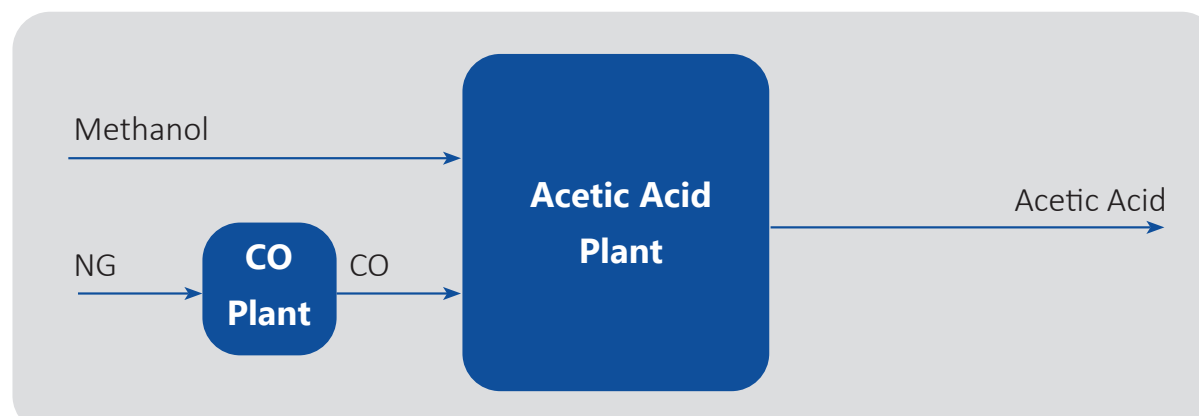
150

Amount of Investment (mn\$)

105

Annual Sales (mn\$)

42



#### Status of License

Licensor	Status
Chiyoda Corp., Hoechst, Khimtechnologia	Negotiable

#### Required Feedstocks

Source of feedstock supply	Type of feedstock	The amount of feedstock (KT/y)
Existing complexes in strategic plans	Methanol	80
National gas pipeline	Natural Gas	0.242 NMM <sup>3</sup> /d

#### Products

Product Name	Production Capacity (KT/y)	The Final Salable Product (KT/y)		Value (based on the prices in the 2016s) (mn\$)	
		Domestic	Export	Domestic	Export
Acetic Acid	150	100	50	28	14

Consumer Market Concentration	Required land (Hectare)	Water Consumption (MM <sup>3</sup> /y)	Required Gas(fuel) (MM <sup>3</sup> /d)	Employment during construction (person)
Tehran, Khuzestan, Fars, Razavi Khorasan, Isfahan, Alborz, Qazvin, Semnan, Zanjan, Bushehr	5	0.5	0.01	1,400

## Value Chain Projects

### Methanol | Synthesis Ethanol production Project

Nominal Capacity (KT/y)

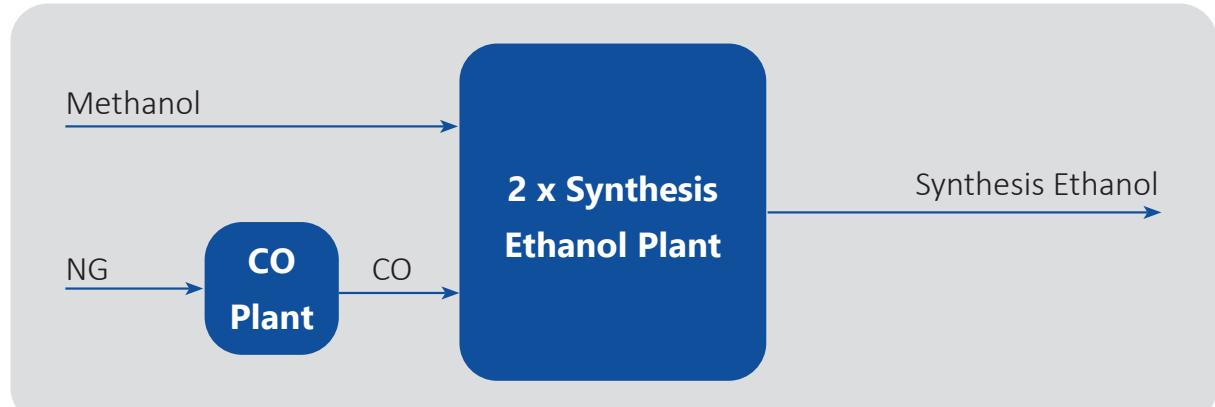
2 \* 100

Amount of Investment (mn\$)

2 \* 95

Annual Sales (mn\$)

2 \* 53



#### Status of License

Licensor	Status
DMTE	Under Negotiation

#### Required Feedstocks

Source of feedstock supply	Type of feedstock	The amount of feedstock (KT/y)
Petrochemical Plants In Zagros and Asaluyeh and methanol units	Methanol	2 * 80
National gas pipeline	Natural gas	2 * 0.25 NMM <sup>3</sup> /d

#### Products

Product Name	Production Capacity (KT/y)	The Final Salable Product (KT/y)		Value (based on the prices in the 2016s) (mn\$)	
		Domestic	Export	Domestic	Export
Ethanol	2 * 100	2 * 40	2 * 60	2 * 21	2 * 32

Consumer Market Concentration	Required land (Hectare)	Water Consumption (MM <sup>3</sup> /y)	Required Gas(fuel) (MM <sup>3</sup> /d)	Employment during construction (person)
Kermanshah	2 * 2	2 * 0.5	2 * 0.02	2 * 450



## Value Chain Projects

### Methanol | Methylamines production Project

Nominal Capacity (KT/y)

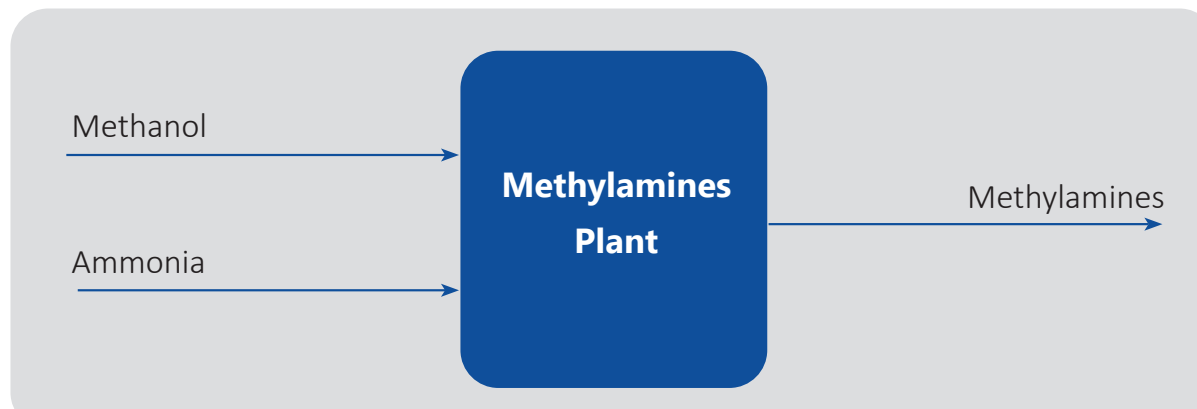
35

Amount of Investment (mn\$)

40

Annual Sales (mn\$)

31



#### Status of License

Licensor	Status
Davy Process Technology, Leonard, NITTO	Negotiable

#### Required Feedstocks

Source of feedstock supply	Type of feedstock	The amount of feed-stock (KT/y)
Petrochemical Plants In Zagros and Asaluyeh and methanol units	Methanol	50
Shiraz and Pardis Petrochemical Plants	Ammonia	15

#### Products

Product Name	Production Capacity (KT/y)	The Final Salable Product (KT/y)		Value (based on the prices in the 2016s) (mn\$)	
		Domestic	Export	Domestic	Export
Methylamines	35	7	28	6	25

Consumer Market Concentration	Required land (Hectare)	Water Consumption (MM <sup>3</sup> /y)	Required Gas(fuel) (MM <sup>3</sup> /d)	Employment during construction (person)
Kermanshah	7	0.2	0.01	600

## Value Chain Projects

### Methanol | Pentaerythritol production Project

Nominal Capacity (KT/y)

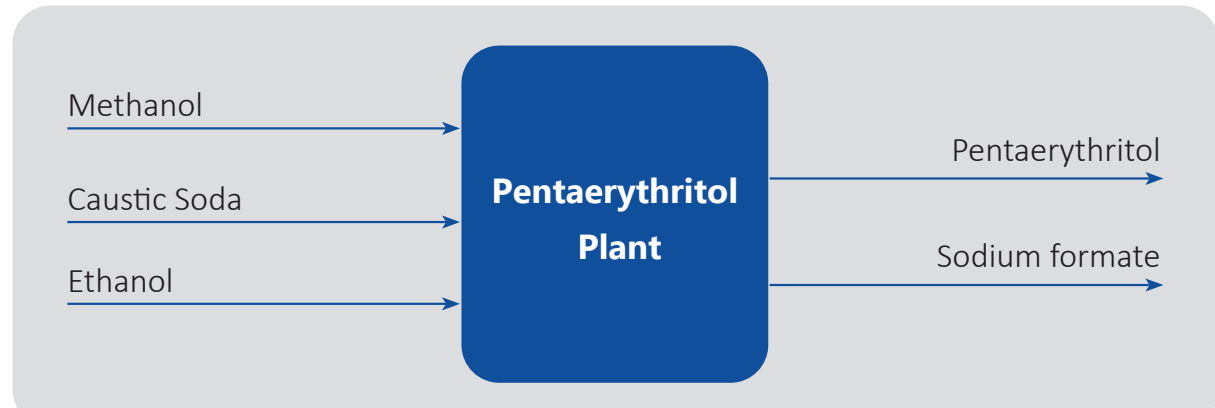
16

Amount of Investment (mn\$)

72

Annual Sales (mn\$)

32



#### Status of License

Licensor	Status
Wonjin, Perstorp	Negotiable

#### Required Feedstocks

Source of feedstock supply	Type of feedstock	The amount of feedstock (KT/y)
Existing complexes	Methanol	16.4
Existing complexes	Caustic Soda	29
Existing complexes	Ethanol	7

#### Products

Product Name	Production Capacity (KT/y)	The Final Salable Product (KT/y)		Value (based on the prices in the 2016s) (mn\$)	
		Domestic	Export	Domestic	Export
Pentaerythritol	16	4	12	7	22
Sodium formate	8	3	5	1	2

Consumer Market Concentration	Required land (Hectare)	Water Consumption (MM <sup>3</sup> /y)	Required Gas(fuel) (MM <sup>3</sup> /d)	Employment during construction (person)
All over the country	4	0.6	0.2	75

## Value Chain Projects

### Methanol | Silicone production Project

Nominal Capacity (KT/y)

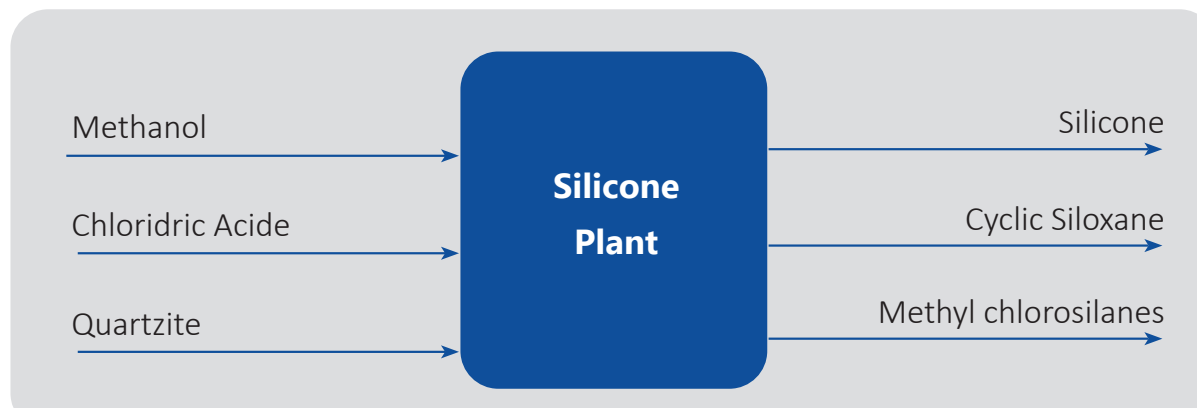
102

Amount of Investment (mn\$)

320

Annual Sales (mn\$)

284



#### Status of License

Licensor	Status
Union Carbide, Motorola & Texas Instrument, Dow, Elem, Wacker, Shin-Etsu	Negotiable

#### Required Feedstocks

Source of feedstock supply	Type of feedstock	The amount of feedstock (KT/y)
Existing complexes	Methanol	77
Existing complexes	Chloridric Acid	106
Existing complexes	Quartzite	86

#### Products

Product Name	Production Capacity (KT/y)	The Final Salable Product (KT/y)		Value (based on the prices in the 2016s) (mn\$)	
		Domestic	Export	Domestic	Export
Silicone	44	16	28	54	94
Cyclic Siloxane	18	3	15	12	60
Methyl chlorosilanes	40	5	35	8	56

Consumer Market Concentration	Required land (Hectare)	Water Consumption (MM <sup>3</sup> /y)	Required Gas(fuel) (MM <sup>3</sup> /d)	Employment during construction (person)
All over the country	8	1	0.3	350

## Value Chain Projects

### Aromatic | PTA production Project

Nominal Capacity (KT/y)

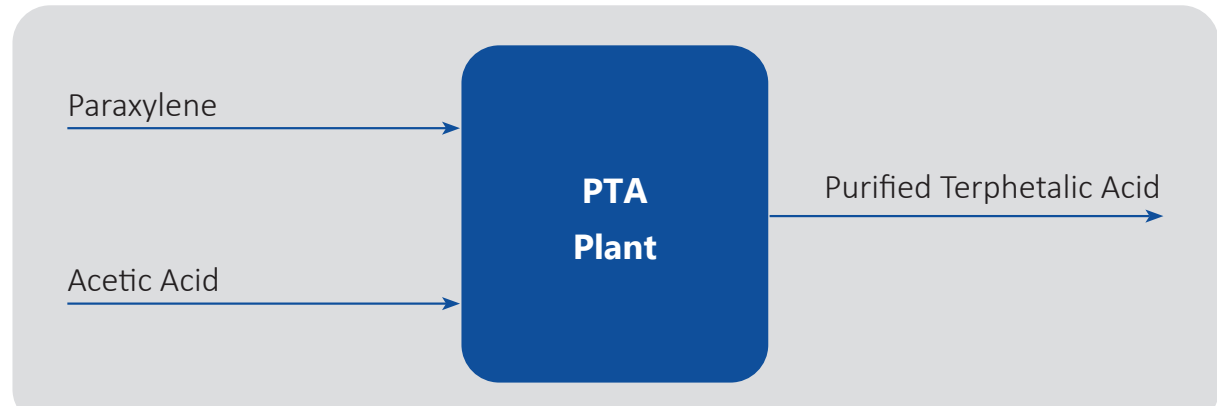
350

Amount of Investment (mn\$)

450

Annual Sales (mn\$)

270



#### Status of License

Licensor	Status
Amoco, Mitsui P(MPC), ICI, Mitsubishi K, Tecnimont, Huels G, Montedison, Std Ind, Mitsui	Negotiable

#### Required Feedstocks

Source of feedstock supply	Type of feedstock	The amount of feedstock (KT/y)
Noori Petrochemical Plant	Paraxylene	240
Fanavaran/ Importation	Acetic Acid	22

#### Products

Product Name	Production Capacity (KT/y)	The Final Salable Product (KT/y)		Value (based on the prices in the 2016s) (mn\$)	
		Domestic	Export	Domestic	Export
Purified Terphthalic Acid	350	350	-	270	-

Consumer Market Concentration	Required land (Hectare)	Water Consumption (MM <sup>3</sup> /y)	Required Gas(fuel) (MM <sup>3</sup> /d)	Employment during construction (person)
PET Units across the country	15	3.5	0.06	300

## Value Chain Projects

### Ethylene | Ethylenediamine production Project

Nominal Capacity (KT/y)

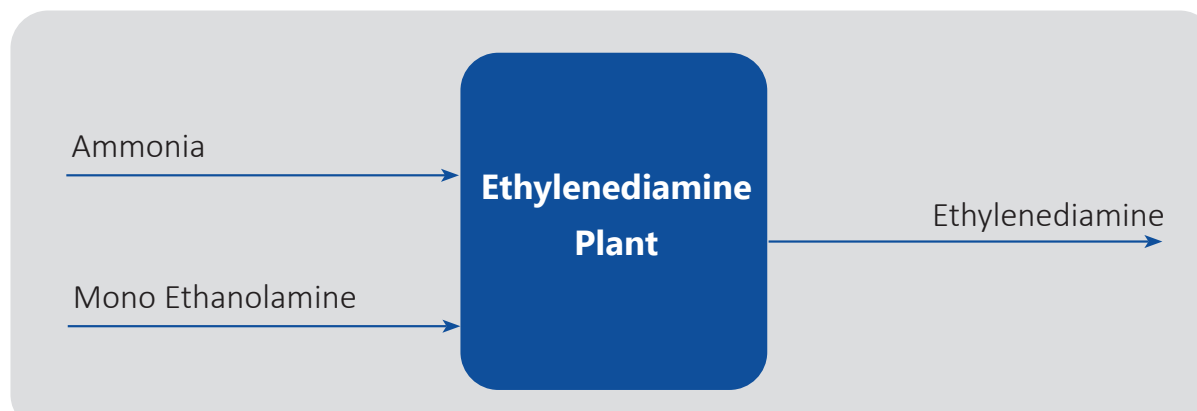
16

Amount of Investment (mn\$)

55

Annual Sales (mn\$)

57



#### Status of License

Licensor	Status
DOW Chemical, DuPont	Can be localized

#### Required Feedstocks

Source of feedstock supply	Type of feedstock	The amount of feedstock (KT/y)
Propulsion Projects	Mono Ethanolamine	18
Propulsion Projects	Ammonia	5

#### Products

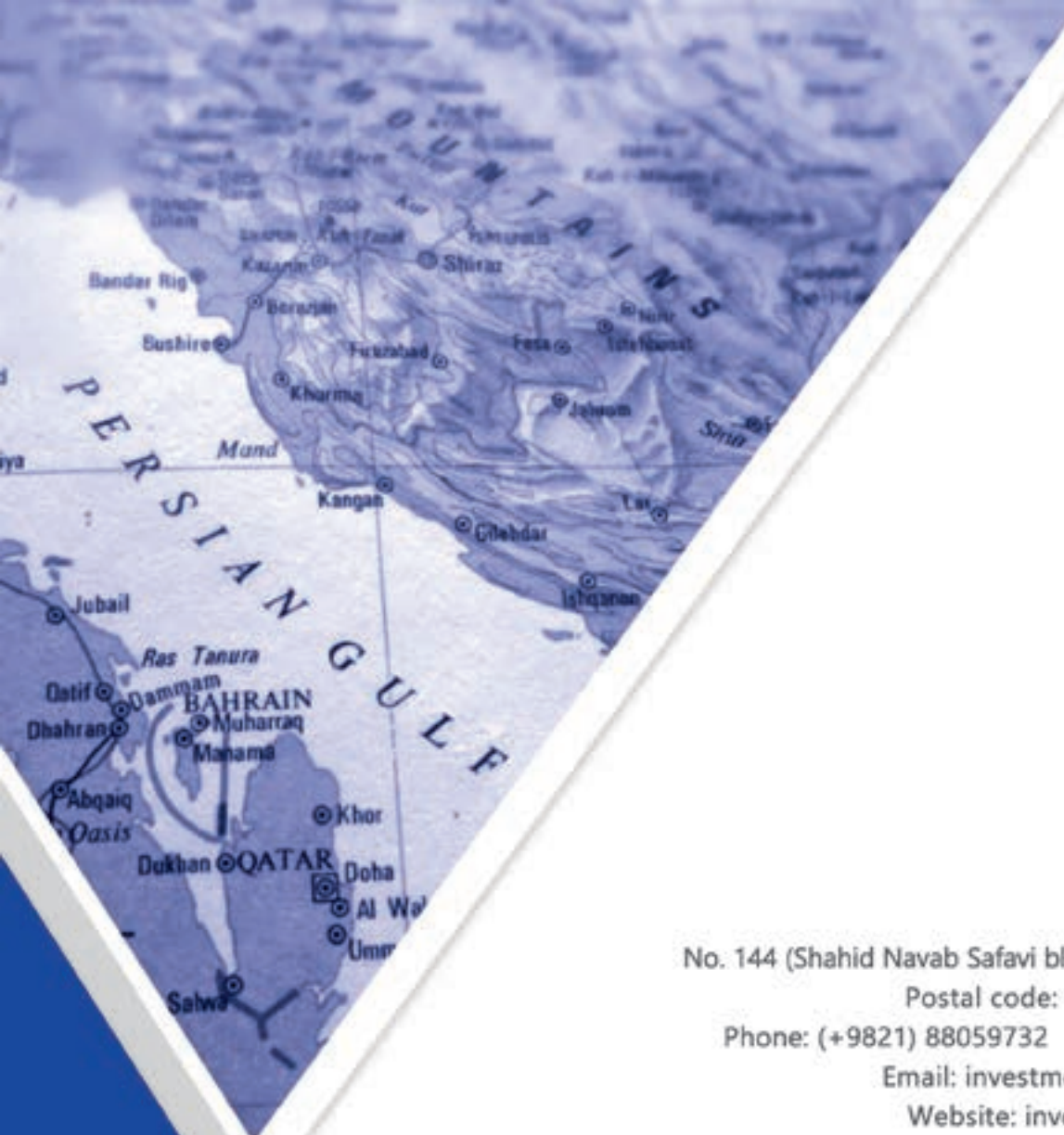
Product Name	Production Capacity (KT/y)	The Final Salable Product (KT/y)		Value (based on the prices in the 2016s) (mn\$)	
		Domestic	Export	Domestic	Export
Ethylenediamine	16	5	11	18	39

Consumer Market Concentration	Required land (Hectare)	Water Consumption (MM <sup>3</sup> /y)	Required Gas(fuel) (MM <sup>3</sup> /d)	Employment during construction (person)
All over the country	5	1	0.25	150







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