NPC

PETROCHEMICAL
COMPLEXES

May 2019

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INTRODUCTION

Petrochemical is a major industry in Iran. As an important source of non-oil revenues, it plays a significant role in the expansion of local industries, the development and indigenization of technologies and the growth of its downstream industries. It is also important for the industry's research and development activities. Diversity of feedstocks, access to international waters and highly-qualified workforce are among the major advantages of the industry.

The history of Iran's petrochemical industry goes back to 1963 when a fertilizer plant was built in the city of Shiraz. One year later, the state-owned National Petrochemical Company was established to spearhead the development and policy-making for the industry. During 1964-1977, Razi (ex-Shahpour), Abadan, Pazargad, Ahwaz Carbon Black (ex-Iran Carbon), Kharg, Farabi (ex-Iran-Nippon) and Shiraz expansion projects were implemented. During this period, a large portion of Bandar Imam Petrochemical Co. (ex-Iran and Japan Petrochemical Co.) was completed. This growth trend was, however, disrupted after Iraq invaded Iran in early 1980s. When the war came to an end, Iran implemented its first five-year development plan (1989- 1994) after the victory of Islamic Revolution.

Under the plan, NPC reconstructed its war-damaged facilities and built two new plants in Esfahan and Shazand (Arak).In 1997, NPC's output reached 13 million tons and in 2018 it rose to 70.2 million tons.

Iran's Petrochemical Complexes

Based on the envisaged plans for Iranian calander year 1397 (begins March 20, 2018)

Total number: 57

Region	No	Annual Capacity (MT/Y)
Mahshahr	21	25.6
Assaluyeh	18	31.1
Other regions	18	13.5
Total output capacity		**70.2 (MT/Y)**

Including Bandar Imam 3rd NF 72.9 mt/y

Total Number of Mahshahr & Assaluyeh Complexes including Fajr, Mobin & Damavand Petrochemical utility Companies.

Petrochemical Special Economic Zone

Mahshahr

PETROCHEMICAL
COMPLEXES

Khuzestan Province

The southwestern Khuzestan province spreads over an area of 64,057km2. It is bordered by Lurestan, Chaharmahal-va-Bakhtiari, Kohkiloyeh-va-Boyerahmad and Ilam provinces. Persian Gulf and Iraq are located on its south and west respectively.

According to a 2011 census, it had a population of over 4.5 million of which about 67 percent of the population lives in urban areas. In summer time, Khuzestan and its coasts are extremely hot. According to the census, the annual average temperature was 26.3º C and annual rainfall in the center of province was around 184.3 millimeters.

The census also showed that the majority of people in the province speak Farsi. Other ethnic languages are Arabic and Lori Bakhtiari; Dezfooli and Shooshtari are also spoken. Khuzestan is home to one of the man's most ancient civilizations. About six thousand years ago, a civilization emerged in the city of Shoosh or Susa. Two thousand years later, led to the formation of the powerful kingdom of Elam. The kingdom was vastly developed under the Achaemenian, Arsacides and Sassanids dynasties. Khuzestan is very important to the Iranian Economy. The province contains enormous oil and gas resources. Due to the availability of well-developed marine, air and land connections as well as access to the international waterways, Khuzestan offers lucrative investment opportunities. The province consists of 27 cities, 77 towns, 67 districts and 144 villages. The provincial capital is Ahwaz.

Tourist attractions:

The most attractive historical and natural places of interest in Khuzestan are:

- Abadan: Museum, Minoo Island, Arvand Rood (River).
- Andimeshk: Dehloran mineral water springs, Eyn-e-Khosh Fountain and Karkhe protected zone.
- Ahwaz: Suspension Bridge (also known as White Bridge), Karoon River and its riverside parks.
- Izeh and Bagh-e-Malek: Eshkaft-e-Salman (Salman Chasm), Bard Nebeshteh (Stone Inscription), Kol Fareh Carvings and Hani Inscription.
- Behbahan: Zohre River, Jarahi (Maroon) River, Arjan Castle, Tang-e-Tak Ab Inscription.
- Khoramshahr: Arvand Rood (River) and its riversides, Grand Mosque.
- Dezful: Dez Dam lake, Dezful Caravansary, The city's ancient bridge, Vazir (vizier) bath, Jondi Shahpour ancient city, Grand Mosque and Yaghoob-e-Leis Mausoleum.
- Ramhormoz: Jarahi (Maroon) River, Ghal-e-Dokhtar (The Girl's Castle).
- Soosangerd: Hoor-al-Azim marshland.
- Shadegan: Shadegan Lagoon.
- Shoosh: Choghazanbil Ziggurat, Apadana Palace, Acropol Castle, Karkh-e- Porch, Ardeshir Palace, Prophet Daniel's Shrine and Shoosh Museum.
- Shooshtar: Waterfalls, ancient water mills, Gorab mineral waters, Grand mosque, Shooshtar Caravansary, and Seyed Mohammad Mahroo Mausoleum.
- Mahshahr: Osk ancient city, Salak ancient village, Basif ancient castle.
- Masjed-Soleiman: Karoon Dam Lake, Ghal-e-Bardi (Stone Castle) and Bard Neshandeh (stone inscription) Temple.

Mahshahr port

Mahshahr port is located at the extreme northeast of Khuzestan province near the Mousa Estuary. It is bounded in the north by Ahwaz and Ramhormoz cities; in the east by the city of Behbahan; in the west by the city of Khoramshahr and in the south by the Persian Gulf. Mahshahr covers an area of over 7304km and its altitude is 3m above the sea level. It consists of 3 districts: Central, Bandar Imam and Hendijan.

Its distance from Tehran is 1032km, from Ahwaz is 151km, from Abadan is 95km, from Aghajari is 72km and from the nearby Bandar Imam Khomeini is 18km.

It has sultry weather and maximum summer temperature is as high as 50ºC. The average annual temperature is about 25ºC. Average humidity is 65% at 06:30am and 40% at 06:30pm. Average annual rainfall in Mahshahr is about

196mm.
Zohreh and Jarahi (Maroon) Rivers run through the city outskirts. Mahshahr, literally meaning ‘the moon city’, is one of the most ancient ports located on the Persian Gulf. Formerly called Mashoor, the city consists of two districts; the old and the new Mahshahr.
The new Mahshahr came into existence when an oil-exporting port was constructed. It was the country’s largest oil-exporting port before the Kharg Island oil export terminal was built. The old section of the city, which is home to the majority of the population, is 3km from the new one. Most of the government organizations and institutions are located in this section.
In 1991, NPC unfolded a new development plan for the petrochemical industry in the region, which has boosted its economy. In addition to its oil and gas export facilities, Mahshahr is notably important for its petrochemical industry. Bandar Imam Khomeini, one of Iran’s major ports, is located 20km from Mahshahr.

Imam Khomeini Port

The port lies at the extreme northwest part of the Persian Gulf. It is bordered in the east by the cities of Abadan and Khoramshahr and in the southeast by the provincial capital Ahwaz. Imam Khomeini Port is connected to the Persian Gulf via Mousa Estuary. It is one of the world’s most important natural canals. Vessels of up to 100,000 tonnes capacity ought to pass through this canal en route the Bandar Imam Khomeini and Mahshahr. In 1973, the residents of Bandar Imam Khomeini were relocated to the nearby Sar Bandar. Imam Khomeini Port is currently Iran’s largest marine terminal. Annual loading/unloading capacity of this port is over 50 million tonnes. The development of the petrochemical industry in the region in the past recent years has culminated the considerable growth of the port. Currently, the port annually handles about 35 million tonnes of various goods.

Petrochemical Special Economic Zone (MAHSHAHR)

The Petrochemical Special Economic Zone is located in the southwest of Mahshahr city, in Khuzestan province, southern Iran, near the northern coast of the Persian Gulf. The Zone now covers an area of 2,600 hectares. When it was first established, it only encompassed an area of 1,700 hectares. The expansion came after Bandar Imam, Razi and Farabi Petrochemical Complexes were annexed to the Zone, which is linked to international waterways via Bandar Imam Port and has access to Turkey, Europe and Central Asian countries via Iran's national railroad. The main reason behind establishing the Zone was to bring about industrial development especially in the petrochemical sector and its

NPC

COMPLEXES OF PETROCHEMICAL INDUSTRY

downstream industries. The zone offers a wide range of economic and social benefits at local and national levels including the applying the state-of-the-art technologies and creating job opportunities.The Organization of Petrochemical Special Economic Zone, which is a subsidiary of NPC, is responsible for promoting and developing the Zone. It began its activities in 1997 after receiving the respective sanction from the nation's High Council for Free Trade and Industrial Zones. Among its major activities are developing the infrastructural facilities with the aim of attracting domestic and foreign investors. It is an outstanding gateway to Iran's abundant oil and gas resources.

Bandar Imam Petrochemical Complex

- **Area:** 270 hectares
- **Founded in:** 1971 (two years later a joint venture with five Japanese companies was signed)
- **Ownership:** Persian Gulf Petrochemical Co. (69.27%), Justice Shares Broker Co. (30%), Preferred Stock (0.73%).
- **Capital:** IRR 13,103,000,000,000
- Management Structure In 2002, in line with non-centralized directorate, BIPC restructured its management organization by establishing five independent subsidiaries each responsible for a number of plants to boost its productivity and to have a better improvement potentiality.

- BIPC located at a 270-hectares area in southeast of Khuzestan province. It is 160km away from Ahwaz and 84km from Abadan.

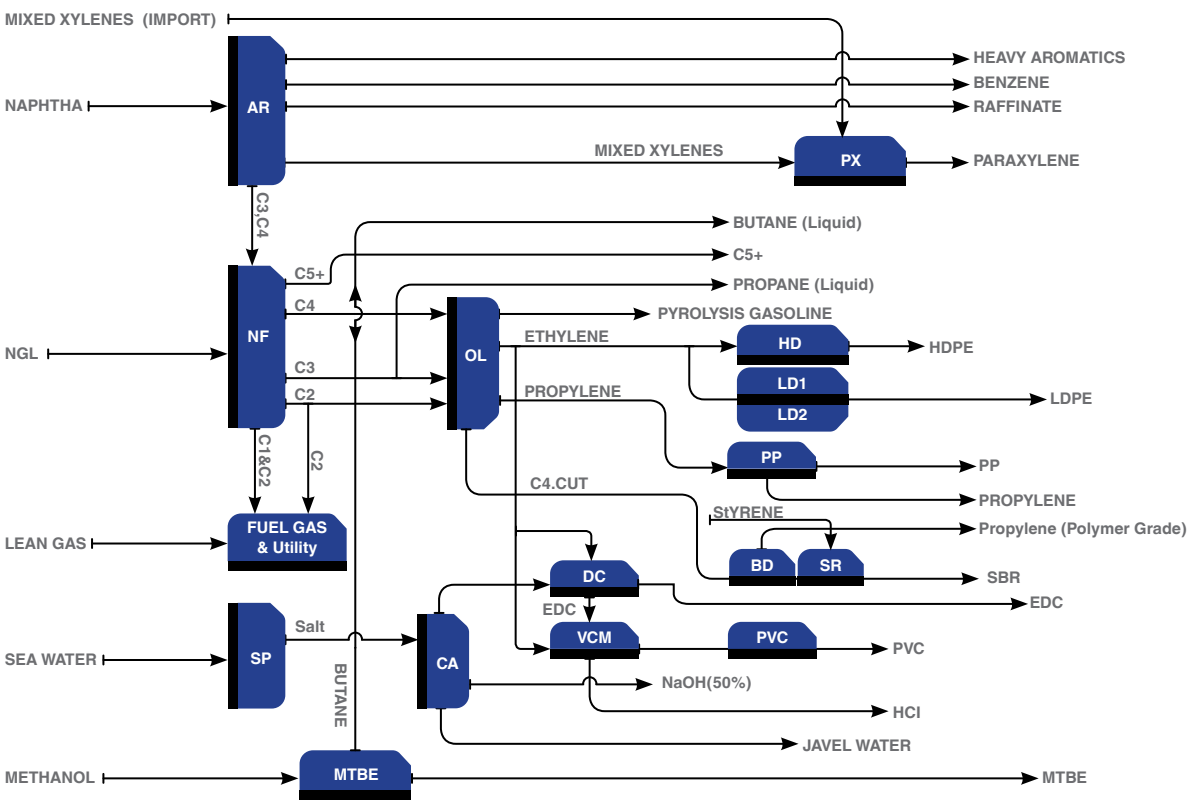
BIPC's subsidiaries include

Kharazmi | Kimiya | Faravaresh | Basparan | Abniroo

ISO Certifications

certificate
ISO
50001

Production Process Diagram



Kharazmi
Bandar Imam Co.

- Kharazmi Company is responsible for projects, maintenance and services management.
- **Projects management:** scope covers supervising, planning and progress control of projects.
- **Maintenance management:** includes maintenance services, main workshop, instrument, electricity, telecommunication and critical machine services.
- **Services management:** includes social welfare services, transportation, general and specialized services and housing and maintenance services.
- **Ownership:** Bandar Imam Petrochemical Co. (BIPC) (100%)
- **Capital:** IRR 10,000,000

ISO Certifications

certificate ISO 14001 | certificate ISO 18001 | certificate ISO 9001 | certificate ISO 50001 | certificate EFQM

Faravaresh
Bandar Imam Co.

Nominal Capacity
4,748
KT/Y

- **Location:** Petrochemical Special Economic Zone
- **Area:** 120 hectares
- **Founded in:** 1999
- **Ownership:** BIPC (100%)
- **Capital:** IRR 10,000,000

Products application

NF plant products such as C2, butane and C5 provide the feedstock for olefins & fuels. Output from the olefin plant provides the main feedstock for the BIPC's polymer plants. Output from Aromatic plants like benzene, mixed xylenes & paraxylenes are used in the production of paints and plastic industries as well as the production of PTA and chemical industries solvents.

Production Capacity (KT/Y)

Product	Nominal Capacity	Feedstock	Licensor	Start up date
Ethane	565	NGL	Parsons	
Propane	1,090	〃	〃	NF2 (1990)
Butane	908	〃	〃	NF1 (1995)
C5+	768	〃	〃	
Ethylene	411	Ethane, $C5^{+}$	Lummus	1993
C4 Cut	80	〃	〃	〃
Pyrolysis gasoline	113.5	〃	〃	〃
* Fuel oil	21.6	〃	Parsons	NF2 (1990) NF1 (1995)
Benzene	230	Naphtha	Engel Hard, UOP, HRI	1996
Mixed xylenes	140	〃	〃	〃
Aromatic raffinate	241	〃	〃	〃
Paraxylene	180	Mixed Xylenes	IFP	2000

* The 3rd NF plant of BIPC with annual production capacity 443,000 tons of Ethane, 870,000 tons of Propane, 688,000 tons of Butane, 649,000 tons of C5+ and 35,000 tons of gas fuel is onstream will be used as a replacement for existing units

Input feed	Amount (KT/Y)	Source
NGL	3,200	NISOC
Naphtha	1,000	Abadan refinery
Mixed xylenes	72	Import

ISO Certifications

Kimiya
Bandar Imam Co.

Nominal Capacity
1,440
KT/Y

- **Location:** Petrochemical Special Economic Zone
- **Area:** 31 hectares including production units and 1550 hectares salt lake
- **Founded in:** 1999
- **Ownership:** BIPC (100%)
- **Capital:** IRR 10,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Caustic soda	250	Salt	Denora	1994
HCL (33%)	63.3	Chlorine / Hydrogen	Lorrian,Carbon+SGL	〃
Sodium hypochlorite	6.6	Chlorine, Caustic Soda	Denora	〃
EDC (DC)	300	Chlorine, Ethylene	Tosoh	〃
EDC (OXY)	140	HCL, Ethylene	〃	〃
VCM	180	EDC	〃	〃
MTBE	500	Methanol, Butane	UOP	2002

Products application

Detergents, industrial solvents, PVC, sugar industry, paper industry, unleaded gasoline, water and sewage treatment

Input feed	Amount (M^3/y)	Source
Sea water	21,000,000	Persian Gulf
DM water	159,135	Abniroo Co.

Input feed	Amount (KT/Y)	Source
Butane	382	Faravaresh Co.
Ethylene	126	Faravaresh Co.
Methanol	176	Fanavaran petrochemical Co.

ISO Certifications

Basparan Bandar Imam Co.

Nominal Capacity
668 KT/Y

- **Location:** Petrochemical Special Economic Zone
- **Founded in:** 1999
- **Ownership:** BIPC (100%)
- **Capital:** IRR 10,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
HDPE	150	Ethylene	Mitsui	1994
LDPE	2*50	〃	Tosoh Corp.	LD-1(1995), LD-2(1994)
Polypropylene	50	(polymer grade)	Mitsui, Toatsu	1994
* Propylene (polymer grade)	64	Propylene(Chemical grade)	〃	〃
PVC	175	VCM	HULS (Germany)	1995
C4 raffinate	62.6	C4 cut	BASF (Germany)	1994
1,3 Butadiene	26	C4 cut	〃	〃
Synthetic rubber	40	1,3 Butadiene & Styrene	JSR (Japan)	〃

* According to National Petrochemical Company board of directors approval, production of this unit has been stopped from early 2006 and produced propylene being sent to Rejal Petrochemical Company.

Products application

HDPE: pipes, cables, various plastic bags, food & chemical containers

LDPE: cable coatings, various nylon films, plastic bags, household appliances, pipes, sport goods and laboratory equipment

PP: kitchen ware, stationary, toys, food packing, auto parts, cereal bags, bottles

PVC: cable coatings, transparent films, pipes and joints, door & window panes, shoe industry, electronic industry

SBR: auto parts tires, floor coatings, shoe soles, toys

Input Feed	Amount (KT/Y)	Source
Ethylene (HD plant)	151.5	Faravaresh Bandar Imam Co.
Ethylene (LD plant)	108	〃
Propylene (PP plant)	117	〃
VCM (PVC plant)	180	Kimiya Bandar Imam Co.
C4Cut (SBR plant)	80	Faravaresh Bandar Imam Co.
Styrene (SBR plant)	8	Pars Petrochemical Co.

ISO Certifications

certificate ISO 9001 | certificate ISO 14001 | certificate OHSAS 18001 | certificate EN 16001 | certificate EFQM | certificate ISO 50001

Ab Niroo
Bandar Imam Co.

- **Location**: Petrochemical Special Economic Zone
- **Area:** 22 hectares
- **Founded in:** 1999
- **Ownership:** BIPC (100%)
- **Capital:** IRR 10,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
DM water	2,500 m^3/h	Raw water	Kurita	1990
Steam	1,500 t/h	DM water, returned condensate	Kawazaki	〃
Power	260 Mw	Fuel	Toshiba/ABB	〃
Industrial air	92,000 m^3/h	Air	Mitsui	〃
Nitrogen	18,000 Nm^3/h	Compressed air	Kobe, Airproduct	〃
Liquid nitrogen	1,500 kg/h	〃	〃	〃

Products application

Utilities for BIPC units

Input Feed	Amount (Mm^3/y)	Source
Fuel Gas	1155	NIGC
Raw water (Karoon river)	36.5	Water Organization

ISO Certifications

certificate ISO 50001 · certificate ISO 14001 · certificate ISO 9001 · certificate OHSAS 18001 · certificate EFQM · certificate ISO 29001

Nominal Capacity
2,834
KT/Y

Arvand Petrochemical Co.

- **Location:** Petrochemical Special Economic Zone
- **Area:** 108 hectares
- **Founded in:** 2000
- **Ownership:** Persian Gulf Petrochemical Co. (79%), Petroleum Ministry Retirement & Welfare Fund (20%), Ghadir Investment (1%)
- **Capital:** IRR 400,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
PVC (Suspension)	300	VCM	VENOLIT (GERMANY)	2011
PVC (Emulsion)	40	VCM	〃	〃
EDC	890	Chlorine, ethylene	〃	2010
VCM	343	EDC	〃	2011
Chlorine	585	DM Water,Salt	Udeh	2010
Caustic Soda	660	〃	〃	〃
Sodium Hypochlorite	16.2	Chlorine, Caustic Soda	〃	〃

Products application

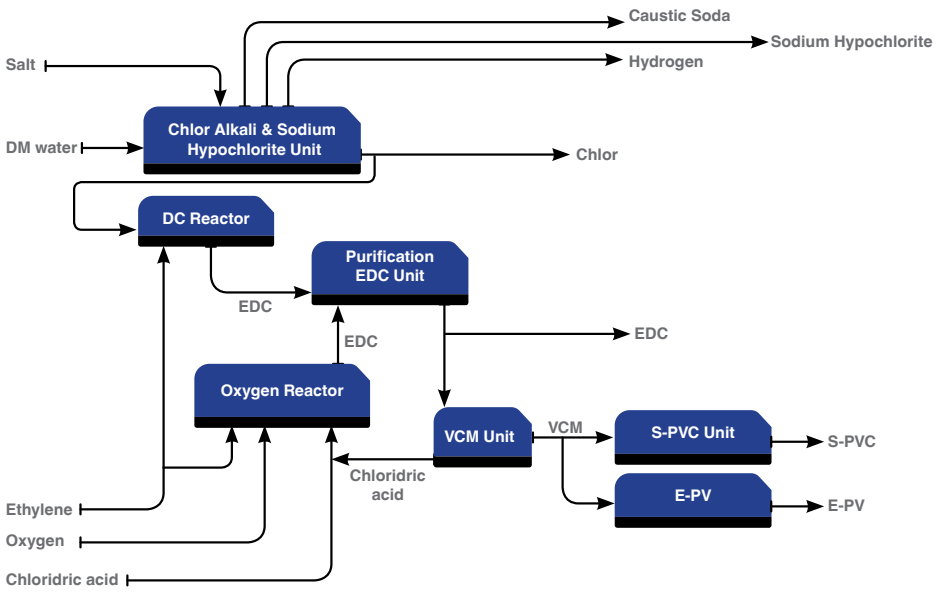
Production of detergents, industrial solvents, paper & sugar industries, sewage and water treatment, antiseptic . . .

Input Feed	Amount (KT/Y)	Source
Ethylene	252	West Ethylene Pipeline
Salt	1,300	Local Sources
Chloridric acid	50	Karoon Petrochemical Co.
DM water	1400	Fajr Petrochemical Co.

ISO Certifications

certificate ISO 50001
certificate ISO 14001
certificate OHSAS 18001
certificate ISO 9001
certificate EFQM
certificate ISO 29001

Production Process Diagram



Amir Kabir Petrochemical Co.

Nominal Capacity
1,760 KT/Y

- **Location:** Petrochemical Special Economic Zone (Mahshahr)
- **Area:** 55 hectares
- **Founded in:** 1998
- **Ownership:** Navid Zar Shimi (20%), Civil Pension Fund Investment (10.8%), Sader Far Co. (10.2%), Refah bank (52%), Other shareholders (7%)
- **Capital:** IRR 3,600,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Ethylene	520	Ethane/LPG	Linde	2005
Propylene	154	Raffinate/	〃	〃
C4 Cut	105	light ends	〃	〃
Pyrolysis gasoline	134.2	Butane/ pentane	〃	〃
Fuel oil	23.5		〃	〃
Butene-1	20	Ethylene	IFP	2002
HDPE	140	〃	Hoechst	〃
LLDPE	260	〃	B.P. (Innovene)	2005
LDPE	300	〃	Basell	2010
Butadiene	51	C4Cut	Lurgi	2005
C4 Raffinate	52	〃	Lurgi	〃

Products application

HDPE: pipes, cables, plastic bags, containers, barrels for holding chemicals and foodstuffs

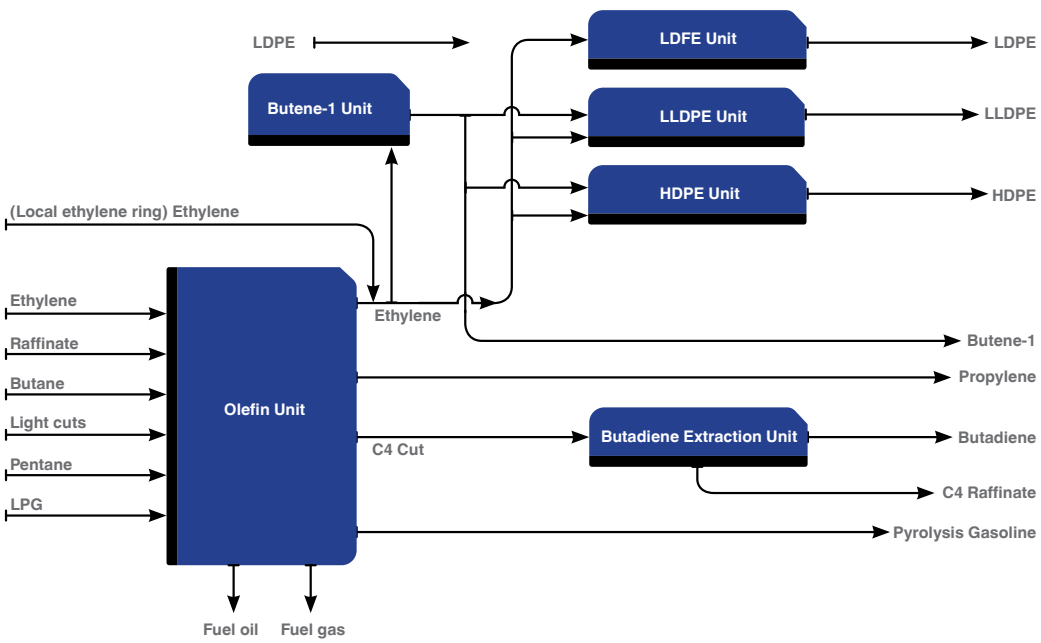
LLDPE: packing, films, foodstuff container, water and sewage canals, oil, milk & juice packages, containers for holding chemicals

LDPE: cable coating, packing, films, general applications for different kinds of films

Butadiene: production of synthetic rubber and other resistant polymers

Input Feed	Amount (KT/Y)	Source
Ethane	233	BIPC
Raffinate	210	〃
Butane	117	〃
Raffinate	199	Buali Sina Petrochemical Co.
Light ends	350	〃
C5	21	〃
Liquid gas	39	〃
Ethylene	210	Local ethylene ring

Production Process Diagram



ISO Certifications

certificate ISO 50001 | certificate ISO 9001 | certificate ISO 29001 | certificate ISO 14001 | certificate OHSAS 18001 | certificate ISO 50001 2012 | certificate EFQM

Buali Sina Petrochemical Co.

- **Location:** Petrochemical Special Economic Zone
- **Area:** 36 hectares
- **Founded in:** 1998
- **Ownership:** Persian Gulf Petrochemical Co. (70%), Justice Shares Broker Co. (30%)
- **Capital:** IRR 3,500,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Benzene	179	Condensates,Pyrolysis Gasoline	Axens, Uhde,Sinopec	2004
Paraxylene	400	〃	〃	〃
Orthoxylene	30	〃	〃	〃
Light cuts naphta	350	〃	〃	2003
Raffinate	199	〃	〃	〃
LPG	39	〃	〃	〃
C5 cuts	21	〃	〃	〃
Heavy cuts naphtha	488	〃	〃	〃
Heavy cuts pyrolysis gasoline	11	〃	〃	〃
Heavy aromatics	23	〃	〃	2004

Products application

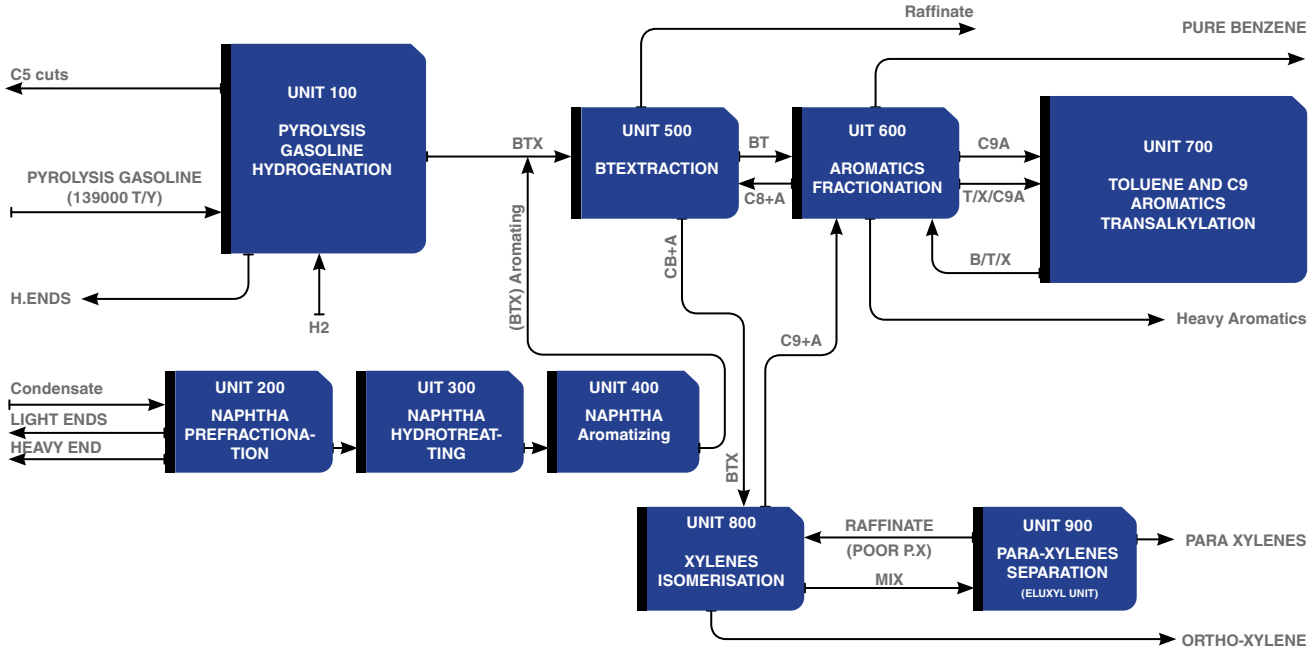
Paraxylene: production of terephthalic acid or dimethyl terephthalic as well as intermediate material for polyesters and fibers.

Benzene: production of styrene, 2-decylbenzene for producing detergents, cyclohexene for producing nylons, phenol and nitrobenzene for producing aniline and solvents.

Orthoxylene: production of softeners, pharmaceuticals, pesticides, paints and phthalic anhydride (PA).

Input feed	Amount (KT/Y)	Source
Condensate	1,718	South oil fields (Pazanan)
Pyrolysis gasoline	139	Amir Kabir Petrochemical Co.

Production Process Diagram



ISO Certifications

certificate ISO 9001
certificate ISO 14001
certificate OHSAS 18001
certificate ISO 17025 2009
certificate EFQM

Shahid Tondguyan Petrochemical Co.

- **Location:** Petrochemical Special Economic Zone
- **Area:** 34 hectares
- **Founded in:** 1998
- **Ownership:** Persian Gulf Petrochemical Co. (75%), Petroleum Ministry Retirement & Welfare Fund (15%), Justice Shares Broker Co. (10%)
- **Capital:** IRR 23,957,666,000,000

Production Capacity (KT/Y)

Phase - 1

Product	Nominal Capacity	Feed	Licensor	Start up date
PTA	350	Paraxylen, Acetic Acid	Tecnimont (Italy)	2005
PET-A (bottle grade)	60	MEG, PTA	Lurgi Zimmer (Germany)	2004
PET-B (fiber grade)	117.5	〃	〃	2005
PET-C (fiber grade)	117.5	〃	〃	2005
PET-D (bottle grade)	117.5	〃	〃	2005

Phase - 2

Product	Nominal Capacity	Feed	Licensor	Start up date
PTA	350	Paraxylen,Acetic Acid	MHI	2006
PET-F (bottle grade)	158.4	MEG, PTA	Noyvallesina	2007
PET-G (fiber grade)	158.4	〃	〃	2013
PET (staple & poy grade)	158.4	〃	〃	2011

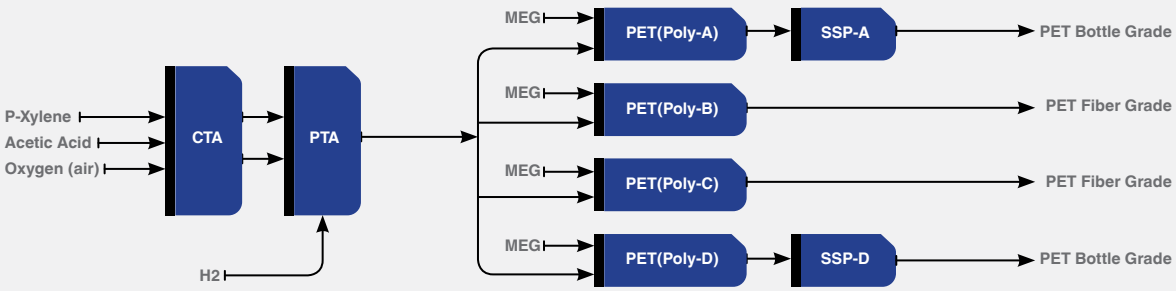
Products application

PET (bottle grade): production of various bottles (for mineral water and other beverages), cans, packing for food and pharmaceuticals, photography and radiology films, solid food packing.

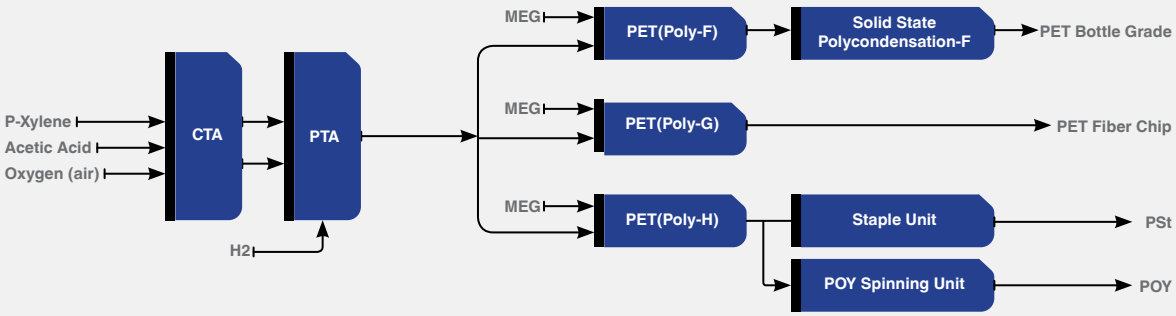
PET (fiber grade): production of various fibers for textile, cotton and artificial thread.

Input feed	Amount (KT/Y)	Source
Paraxylene	468	BIPC & Buali Sina Petrochemical Co.
Acetic acid	37	Fanavaran Petrochemical Co.
MEG	290	Marun Petrochemical Co.

Production Process Diagram . Phase 1



Production Process Diagram . Phase 2



ISO Certifications

certificate ISO 9001 | certificate ISO 29001 | certificate ISO 17025 | certificate OHSAS 18001 | certificate ISO 14001 | certificate EFQM

Khuzestan Petrochemical Co.

Nominal Capacity
35
KT/Y

- **Location:** Petrochemical Special Economic Zone
- **Area:** 10 hectares
- **Founded in:** 1998
- **Ownership:** Persian Gulf Petrochemical Co. (70%), Justice Shares Broker Co. (30%)
- **Capital:** IRR 360,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Liquid epoxy resin	5	Epichlorohydrin, Bisphenol A	Salzgitter	2003
Solid epoxy resin	5	Epichlorohydrin, Bisphenol A	〃	2003
Polycarbonates	25	Phosgene, Bisphenol A	〃	2007
* Bisphenol A	-	Phenol, Aceton	〃	2003

* Since Bisphenol internal production is not cost_effective, it is imported as a raw material for downstream units with aproduction capacity of 30,000 T/Y.

Products application

Epoxy resin: interior protective coatings of oil and gas pipes to prevent corrosion, in production of paints, adhesive, floor covering, reinforced containers and polymer cements used for buildings & bridges construction.

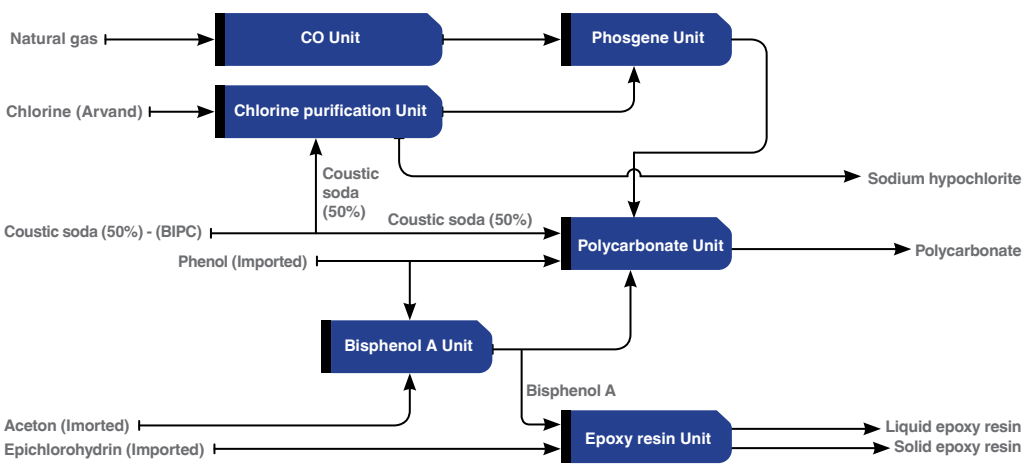
Polycarbonate: in auto industry, hygienic & pharmaceutical industry, medical & Industrial eye glasses, contact lens, dialysis equipments..., and electricity & computer industries.

Input feed	Amount (KT/Y)	Source
Caustic soda (100%)	38	BIPC
Acetone	8.5	Imported
Phenol	26.7	〃
Epichlorohydrin	5.2	〃
Chlorine	10	BIPC

ISO Certifications

certificate ISO 9001 certificate ISO 14001 certificate OHSAS 18001 certificate EFQM

Production Process Diagram



Fajr Petrochemical Co.

- **Location:** 2nd & 4th sites of Petrochemical Special Economic Zone
- **Area:** 54 hectares
- **Founded in:** 1999
- **Ownership:** Persian Gulf Petrochemical Co. (59.6%), Justice Shares Broker Co. (30%),Other Shareholders (10.6%)
- **Capital:** IRR 6,500,000,000,000

Product	Nominal Capacity	Feed	Licensor	Start up date
Electricity	1,483 MW-H	Natural gas, gas oil	Alstom	2003
Steam	1,788 t/h	DM water		
Nitrogen (gas)	51,000 Nm^3/h	Air	Air product (1st & 2nd train); Air liquid (3rd train)	2002 (Train 1&2) 2006 (Train 3)
Nitrogen (liquid)	3 t/h	〃		
Oxygen (gas)	40,500 Nm^3/h	〃		
Oxygen (liquid)	42 t/h	〃		
Instrument air	42,500 Nm^3/h	〃	Air product	2002
Service air	31,500 Nm^3/h	〃		
Argon (liquid)	375 kg/h	〃	Air liquid	2006
RO water	10,530 m^3/h	Service water	Vatech	2006
DM water	3,430 m^3/h	RO water		
Service water	800 m^3/h	Clarified water		
Clarified water	16,800 m^3/h	Karoon river		
Potable water	450 m^3/h	Mixed RO+DM water		
Boilers water	2,784 m^3/h	DM water		
Firefighting water	14,630 m^3/h	Clarified water		

Sewage treatment capacity is 980 m3/h

Products application

Supply of utilities required by the production complexes in Petrochemical Special Economic Zone.

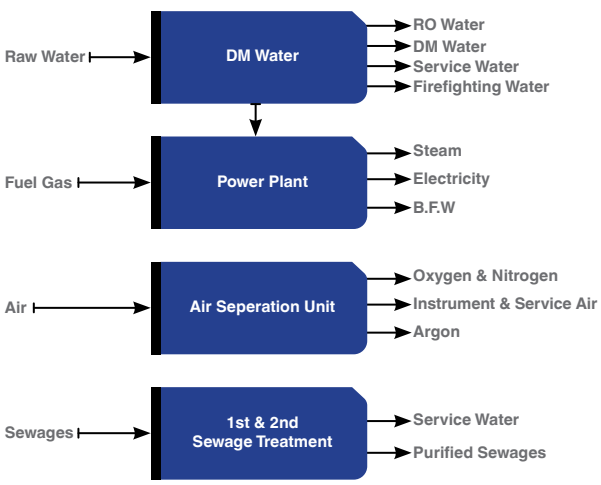
Input feed	Amount	Source
Raw water (Karoon river)	7,000 m^3/h	Water Organization
Natural gas	12 Mm^3/d	NIGC

ISO Certifications

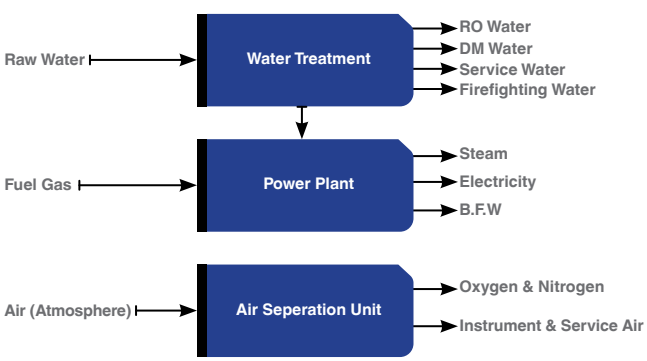
certificate ISO 9001 · certificate ISO 14001 · certificate IMS · certificate OHSAS 18001 · certificate ISO 16001 · certificate ISO 50001 · certificate EFQM

Production Process Diagram

Phase 1



Phase 2



Karoon Petrochemical Co.

- **Location:** Petrochemical Special Economic Zone
- **Area:** 34 hectares
- **Founded in:** 2002
- **Ownership:** BIPC (98.6%), Petrochemical Industries Investment Co. (1%),PCC (0.4%)
- **Capital:** IRR 16,869,037,000,000

Production Capacity (KT/Y)

Phase - 1

Product	Nominal Capacity	Feed	Licensor	Start up date
TDI	40	Chlorine, CO, Hydrogen, Toluene, Nitric acid	Chematur	2008
Chloridric acid (33%)	116.3			
Sodiom hypochlorite	4.2	Caustic soda, Chlorine		
Nitric acid	92.3	Ammonia		2011

Phase - 2

Product	Nominal Capacity	Feed	Licensor	Start up date
MDI	40	Benzene, Chlorine, Soda	Chematur	2016
Chloridric acid (33%)	73.2	Chlorine, Soda		
Sodium hypochlorite	2.6	Chlorine, Soda		

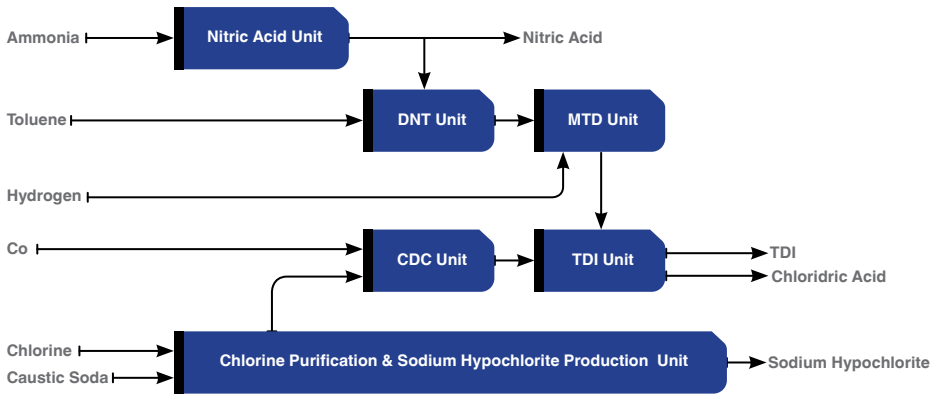
Products application

Raw material for production of various kinds of polyurethanes, construction industry, auto industry, insulations, false ceilings, sponges, adhesives, refrigerator parts.

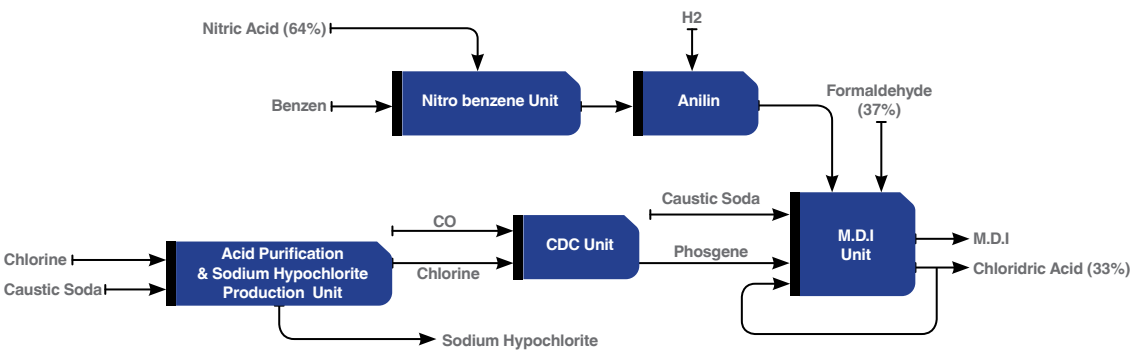
Input feed	Amount (KT/Y)	Source
Toluene	25.2	BIPC
Chlorine	60.5	Arvand Petrochemical Co.
Hydrogen	8	Fanavaran Petrochemical Co.
CO	24.8	Fanavaran Petrochemical Co.
Ammonia	17.1	Razi Petrochemical Co.
Caustic soda (48.5%)	42.7	Arvand Petrochemical Co.
Formaldehyde (Formalin 37%)	14.8	Shahid Rasouli Petrochemical Co.
Benzene	28	Buali Sina Petrochemical Co.
Sulfuric acid	0.7	Razi Petrochemical Co.

Production Process Diagram

Phase 1

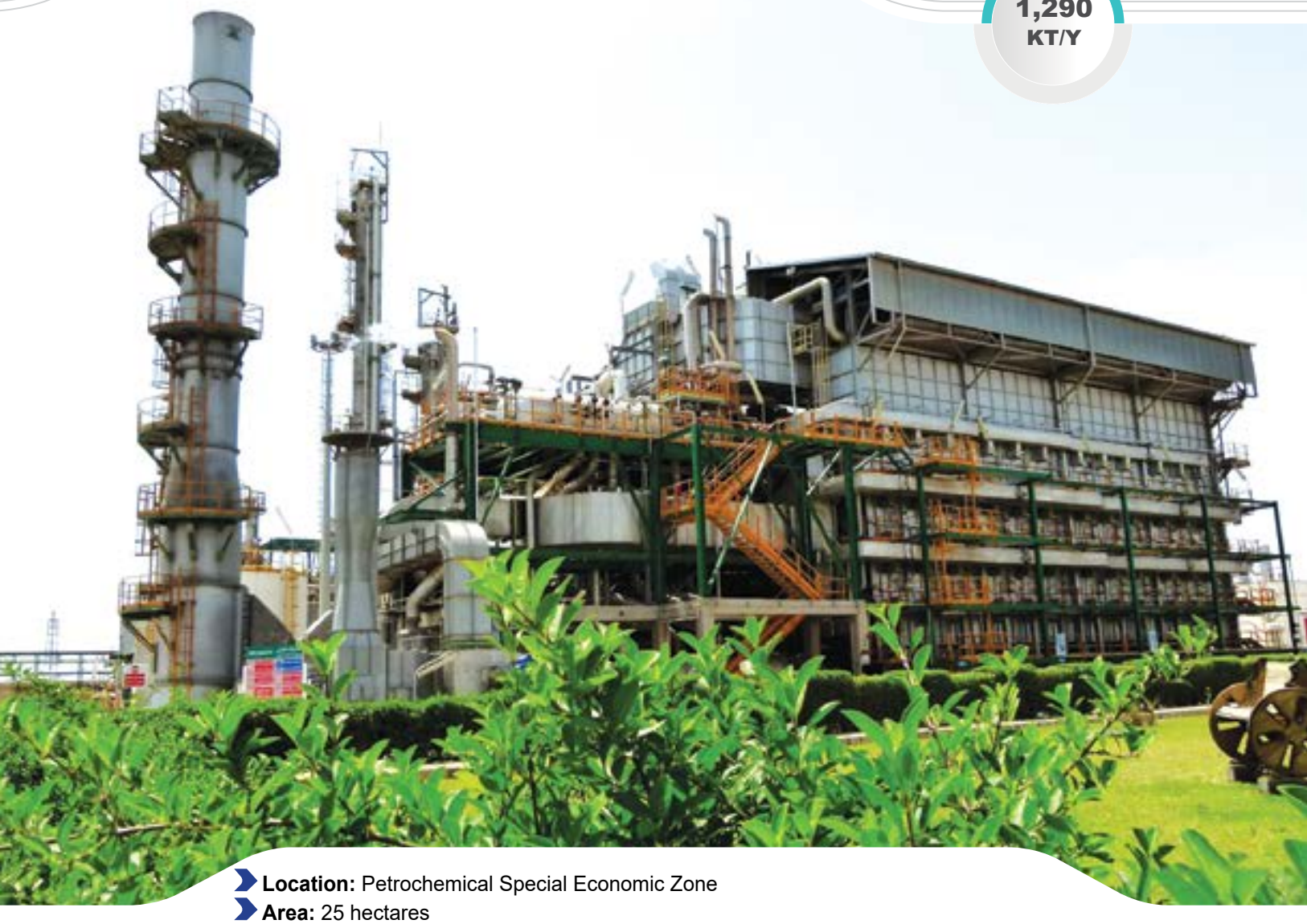


Phase 2



Fanavaran Petrochemical Co.

Nominal Capacity
1,290
KT/Y



- **Location:** Petrochemical Special Economic Zone
- **Area:** 25 hectares
- **Founded in:** 1998
- **Ownership:** Tamin Oil & Gas & Petrochemical (49.2%), Civil Pension Investment Co. (16.3%), Taban Farda Petrochemical Group (16.3%), Other Shareholders (18.2%),
- **Capital:** IRR 950,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Methanol	1,000	Natural gas, CO_2	Haldor Topsoe (Denmark)	2004
CO	140	Natural gas	〃	2006
Acetic acid	150	Methanol, CO	Khimteknologia (Ukraine)	2006

Products application

Methanol: acetic acid, formaldehyde, MTBE, solvent for organic materials

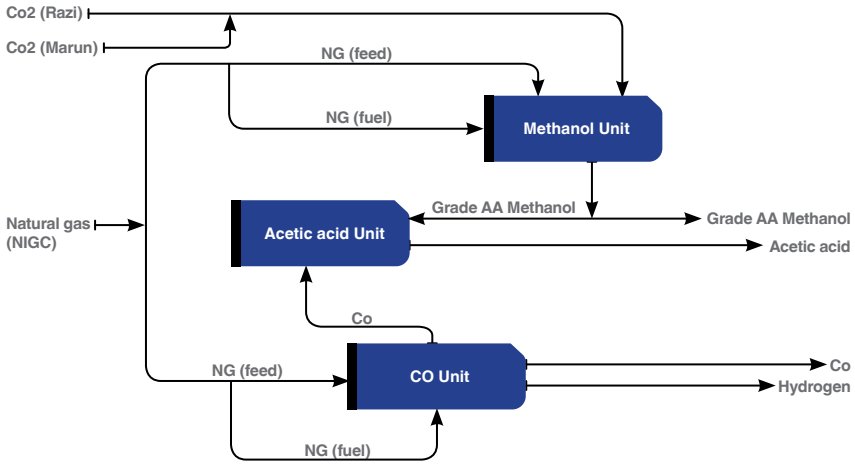
CO: acetic acid, phosgene

Acetic acid: VAM, purification of terephthalic acid, cellulose acetate, solvents, pharmaceutical products, paints

Input feed	Amount	Source
* Natural Gas	991.7 Mm^3/hr	NIGC
CO2	91.5 KT/Y	Razi Petrochemical Co.
CO2	175.7 KT/Y	Marun Petrochemical Co.

* Includes feedstock & fuel

Production Process Diagram



ISO Certifications

ISO 9001 · ISO 14001 · OHSAS 18001 · ISO 29001 · EFQM

Razi Petrochemical Co.

Nominal Capacity
3,801
KT/Y

- **Location:** Petrochemical Special Economic Zone
- **Area:** 87.84 hectares
- **Founded in:** 1965
- **Ownership:** Gubre Fabrikalari Amonium (47.81%), Trade Joint Stock Co. & Petrochemicals Energy Asia (23.91%), other shareholders (28.28%)
- **Capital:** IRR 2,800,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
* Sulfuric acid(plant 1&2)	2×313.5	Liquid sulfur	Sim-Chem	1977
* Phosphoric acid	255	Sulfuric acid & phosphate rock	Prayon	1970
DAP (plant 1)	210	Phosphoric acid & ammonia	T.V.A	〃
DAP (plant 2)	240	〃	Stamicarbon	1990
Urea	594	Ammonia & CO2	H.F.T & Stamicarbon	〃
Ammonia 1 (plant 1)	330	Natural gas	Keliogg	1970
Ammonia 2 (plant 2)	330	〃	〃	1977
Ammonia 3 (plant 3)	676.5	Natural Gas & Hydrogen	Ammonia Casale	2007
Sulfur	538.7	Sour gas	Ralph Parsons	1970

* Phosphoric Acid & DAP1 units are not onstream

Products application

Ammonia: production of fertilizers & refrigrant fluid

Urea: production of fertilizers, resins, formaldehyde urea and melamines

Sulphur: production of sulphuric acid and raw material for sulphuric producitons

Sulphuric Acid: chemical industries & phosphoric acid production

Di Ammonium Phosphate: fertilizers

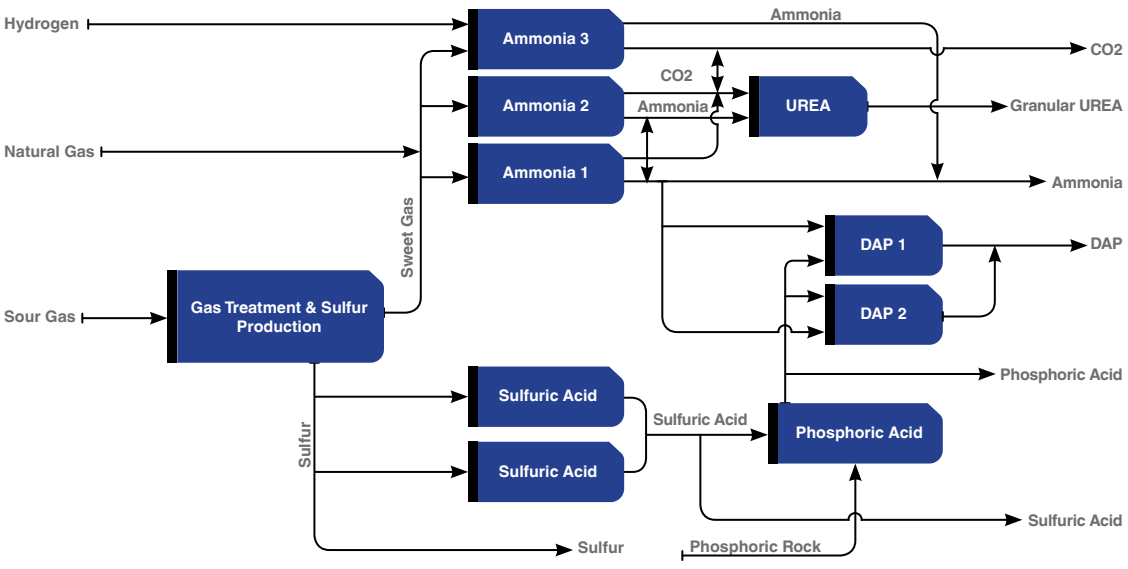
Phosphoric Acid: production of di-ammonium phosphate fertilizer and industrial usage

Input feed	Amount (Mm^3/y)	Source
Sour gas	1,695	Masjid-Soleiman sour gas wells
* Natural gas	1,173	NIGC

* Includes feedstock & fuel

Input feed	Amount ($'000\ m^3/y$)	Source
Phosphoric acid	120	Arya Phosphoric Co. & Import
Hydrogen (for 3rd Ammonia)	90	Petrochemical Special Economic Zone

Production Process Diagram



ISO Certifications

certificate ISO 9001 · certificate ISO 14001 · certificate OHSAS 18001 · certificate ISO 29001 · certificate EFQM

Marun Petrochemical Co.

Nominal Capacity
4,506
KT/Y

- **Location:** Ahwaz & Petrochemical Special Economic Zone
- **Area:** 102.5 hectares (93 hectares in Petrochemical Special Economic Zone located in Site 2 and 9.5 hectares in Ahwaz located in Kritcamp area, 15km from Ahwaz)
- **Founded in:** 1998
- **Ownership:** Justice Shares Broker (30%), Taban-e Farda Petrochemical Group (20.5%), Tamin Oil& Gas & Petrochemical (16.6%),Social Security Organization of Armed Forces (12.5%), Pension Fund of Armed Forces (7%), Amin Tavan Afarn Saz Co. (10.6%), Other Shareholders (2.7%)
- **Capital:** IRR 4,000,000,000,000

Production Capacity (KT/Y)

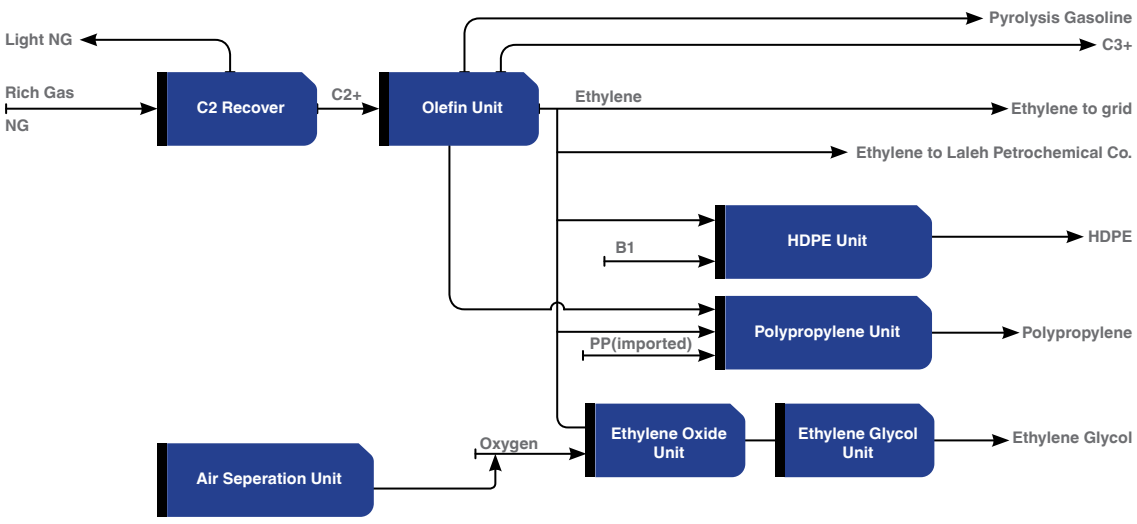
Product	Nominal Capacity	Feed	Licensor	Start up date
C2+	1,912	Rich gas	Linde (Germany)	2005
Ethylene	1,100	C2+	〃	2006
Propylene	200	〃	〃	〃
C3+	168	〃	〃	〃
Pyrolysis gasoline	83	〃	〃	〃
Ethylene glycols	443	Ethylene & oxygen	Shell (Netherlands)	〃
HDPE	300	Ethylene	Basell (Germany)	2005
Polypropylene	300	Propylene	〃	2006

Products application

Production of plastics including; cable coating, films and tapes, bottle box, auto battery coating, liquid containers, pharmaceutical equipments, pipes, as well as feedstock for downstream industries, production of anti-oxide, anti-freeze, textile and synthetic fibers, adhesives, wire insulation, print ink & cosmetics.

Input feed	Amount (KT/Y)	Source
Butene-1	2	Jam Petrochemical Co., import
Oxygen	274	Fajr Petrochemical Co.
Propylene	100	Local sources, import
Rich gas	1,900	National Iranian South oil Co.

Production Process Diagram



ISO Certifications

certificate ISO 9001

certificate ISO 14001

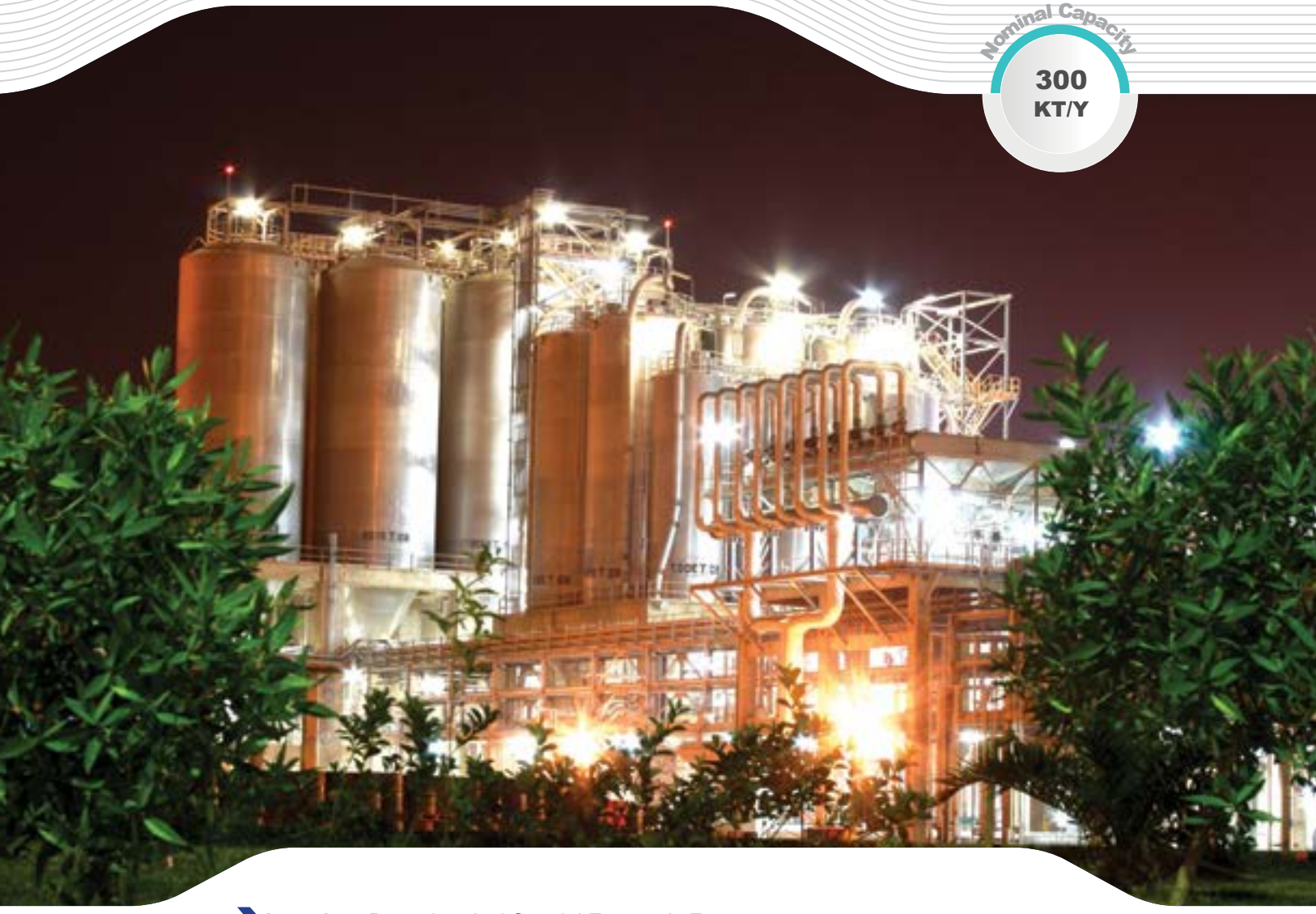
certificate OHSAS 18001

certificate ISO 50001

certificate EFQM

Laleh Petrochemical Co.

Nominal Capacity
300
KT/Y



- **Location:** Petrochemical Special Economic Zone
- **Area:** 12 hectares
- **Founded in:** 2002
- **Ownership:** Marun Petrochemical Co. (64%), Pushineh Polymer Industrial Group (36%)
- **Capital:** IRR 952,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
LDPE	300	Ethylene	Sabtec	2007

Products application

Various nylon films, plastic bags & packaging industries

Input feed	Amount (KT/Y)	Source
Ethylene	310	Marun Petrochemical Co.
Propylene	6	Local sources

Production Process Diagram

ISO Certifications

certificate
ISO
50001

Farabi Petrochemical Co.

Nominal Capacity
95
KT/Y

- **Location:** Petrochemical Special Economic Zone
- **Area:** 15 hectares
- **Founded in:** 1973
- **Ownership:** Fanavaran Petrochemical Co. (48.7%), Amirkabir Petrochemical Co. (43.7%),Other shareholders (7.6%)
- **Capital:** IRR 150,000,000,000

Production Capacity (KT/Y)

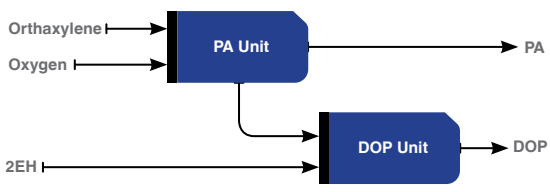
Product	Nominal Capacity	Feed	Licensor	Start up date
Dioctyl phthalate (DOP)	60	Liquid PA, 2EH	Von-Heyden	1977
Phthalic anhydride (PA)	34.5	Liquid PA	Lurgi	〃

Products application

Production of plastics, resin & paints industry

Input feed	Amount (KT/Y)	Source
2EH	42	Shazand (Arak) Petrochemical Co./Import
OX	32	Esfahan & Buali Sina Petrochemical Companies

Production Process Diagram



ISO Certifications

certificate ISO 9001

certificate ISO 14001

certificate OHSAS 18001

certificate TS 29001

Ghadir Petrochemical Co.

Nominal Capacity
270
KT/Y

- **Location:** Petrochemical Special Economic Zone
- **Area:** 15.2 hectares
- **Founded in:** 2001
- **Ownership:** Shasta (67.6%), Bandar Imam Khomeini Investment Co. (10%), Other Shareholders (22.4%)
- **Capital:** IRR 1,300,000,000,000

Production Capacity (KT/Y)

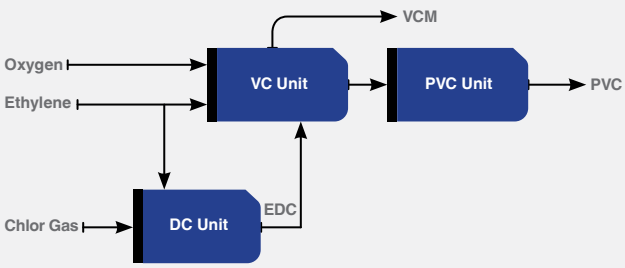
Product	Nominal Capacity	Feed	Licensor	Start up date
PVC	120	Ethylene	BF-Goodrich	2009
VCM	150	Chlorine	Mitsui	〃

Products application

Raw material for hoses, pipes, auto, cabinet industries, ...

Input feed	Amount (KT/Y)	Source
Ethylene	70	Marun, West Ethylene Pipeline
Chlorine	90	Arvand Petrochemical Co.

Production Process Diagram



ISO Certifications

ISO / TS 2900 · ISO 14001 · OHSAS 18001 · ISO 14001 · ISO 29001 · HSE-MS · ISO 50001 · EFQM 210

Shimi Baft Petrochemical Co.

Nominal Capacity
150
KT/Y

- **Location:** Petrochemical Special Economic Zone
- **Area:** 5 hectares
- **Founded in:** 1999
- **Ownership:** Petrochemical Industries Investment Co. (65.4%), EN Bank (27.8%), Othershareholders (6.8%)
- **Capital:** IRR 220,000,000,000

Production Capacity (KT/Y)

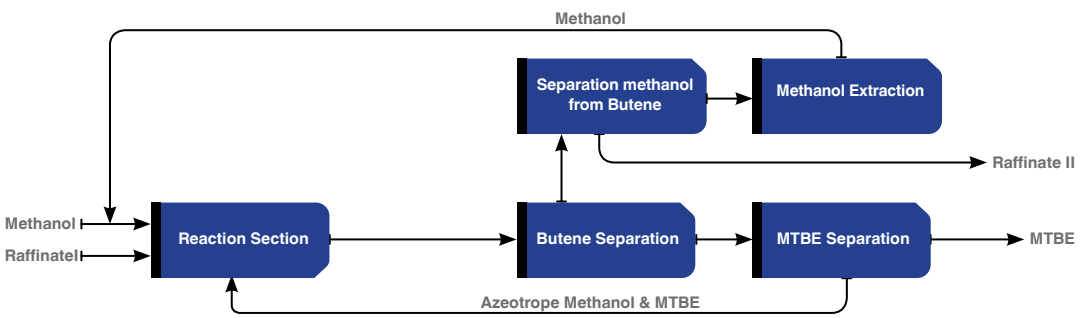
Product	Nominal Capacity	Feed	Licensor	Start up date
MTBE	90	C4 raffinate, methanol	Hulse	2002
C4 raffinate - 2	60	〃	〃	〃

Products application

MTBE is used as additive in gasoline production (octane booster) C4 raffinate 2 is used as feed for MEK production.

Input feed	Amount (KT/Y)	Source
Methanol	32	Fanavaran Petrochemical Co.
Raffinate 1	115	Bandar Imam, Amir kabir, Tabriz & Shazand Petrochemical Co., Abadan Refinery

Production Process Diagram



ISO Certifications

certificate ISO 9001 | certificate ISO 14001 | certificate ISO TS | certificate OHSAS 18001 | certificate ISO 29001 | certificate HSE-MS

Navid Zar Shimi Co.

Nominal Capacity
160
KT/Y

- **Location:** Petrochemical Special Economic Zone - Site 4
- **Area:** 5.7 hectares
- **Founded in:** 1999
- **Ownership:** Sader Far (76.5%), Natural Persons (23.5%)
- **Capital:** IRR 500,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Polypropylene	160	Ethylene, propylene, Butene-1, hydrogen	Basell	2004

Products application

Raw material for plastic, textile, auto parts, packing films, water pipes industries for domestic needs and export.

Input feed	Amount (KT/Y)	Source
Propylene	155	Amir kabir Petrochemical Co.
Ethylene	8	Amir kabir Petrochemical Co.
Hydrogen	0.05	Amir kabir Petrochemical Co.
Butene-1	1	Amir kabir Petrochemical Co.

Production Process Diagram

ISO Certifications

certificate ISO 9001

certificate ISO 14001

certificate ISO TS 29001

certificate OHSAS 18001

Shahid Rasouli Petrochemical Co.

- **Location:** Petrochemical Special Economic Zone - Site 2
- **Area:** 8.6 hectares
- **Founded in:** 2001
- **Ownership:** Petroleum Ministry Retirement Welfare fund (60%), Other Shareholders (40%)
- **Capital:** IRR 700,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Formalin	66	Methanol	Wonjin	2006

Products application

Medical industry, adhesives & production of formaldehyde resins.

Input feed	Amount (KT/Y)	Source
Methanol	30	Fanavaran Petrochemical Co.

Production Process Diagram

Nominal Capacity

5
KT/Y

Shimi Tex Arya Co.

- **Location:** Petrochemical Special Economic Zone
- **Area:** 3 hectares
- **Founded in:** 2006
- **Ownership:** Shimi Baft (85.5%), Firmco Pars Erection & Engineering Co.(14.5%)
- **Capital:** IRR 90,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Methyl ethyl ketone (MEK)	5	Raffinate-2 & sulphuric acid (98%)	Edeleanu (Germany)	2013

Products application

Commercial - industrial solvent with widespread use in base oil production refineries, resin industry, print & imitation leather.

Input feed	Amount (KT/Y)	Source
Raffinate-2	9.6	Shimi Baft Co.
Sulphuric acid (98%)	6.2	Razi Petrochemical Co.

Production Process Diagram

Nominal Capacity

125
KT/Y

Arya Phosphoric Jonoub Co.

- **Location:** Razi Petrochemical Co.
- **Area:** 7844 m2
- **Founded in:** 2004
- **Ownership:** Razi Petrochemical Co. (100%)
- **Capital:** IRR 106,848,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Phosphoric acid	125	Phosphate soil-Sulphuric Acid	Parayon	2009

Products application

Phosphate fertilizer, livestock and poultry feed supplementaries, domestic and industrial detergents, paper, plating, loom and photography industries.

Input feed	Amount (KT/Y)	Source
Sulphuric acid	362.5	Razi Petrochemical Co.
Phosphate Soil	437.5	Internal and external sources

Production Process Diagram

Rejal Petrochemical Co.

Nominal Capacity
180
KT/Y

- **Location:** Petrochemical Special Economic Zone
- **Area:** 12.3 hectares
- **Founded in:** 2002
- **Ownership:** Natural Person (100%)
- **Capital:** IRR 200,000,000,000

Production Capacity (KT/Y)

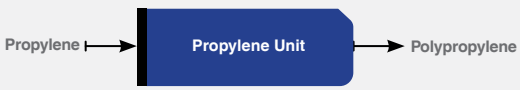
Product	Nominal Capacity	Feed	Licensor	Start up date
Polypropylene	180	Propylene	A.B.B	2006 & 2012

Products application

Pipe, sack, disposable containers & film industries.

Input feed	Amount (KT/Y)	Source
Propylene	187	BIPC & other resources

Production Process Diagram



ISO Certifications

certificate ISO 9001 · certificate ISO 14001 · certificate ISO 10002 · certificate OHSAS 18001

Calibration Laboratory Accreditation Certificate

Takht-e-Jamshid Petrochemical Co.

Nominal Capacity
42
KT/Y

- **Location:** Petrochemical Special Economic Zone
- **Area:** 6.9 hectares
- **Founded in:** 2006
- **Ownership:** PITCO PIT (38.2%), Mehr Pars Co. (17%), PTI Kish (24.8%), Other shareholders (20%)
- **Capital:** IRR 4,500,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
PBR	12	Butadiene	B.F Goodrich	2015
SBR	30	Styrene/Butadiene	Good Year	2015

Products application

Tiers, wire/cable coating, belts, conveyor belts

Input feed	Amount (KT/Y)	Source
Butadiene	35.5	Amir Kabir Petrochemical Co.
Styrene	6.5	Pars Petrochemical Co.

Production Process Diagram

Pars Special Economic Energy Zone

Assaluyeh

PETROCHEMICAL COMPLEXES

Bushehr
Province

The Province of Bushehr is located at 27°16'-30°18' North, 50°06'-52°56' East. Situated on the southern coast of Iran, the province stretches over an area of 22,743sq km. It is bordered in the north by Khuzestan and Kohkiloyeh-va-Boyerahmad provinces; in the east by Fars province; in the northeast by Hormozgan province and in the south and the west by the Persian Gulf. The population of the province is about 886,267 of whom 468,062 are male and 418,205 are female. About 65% of the population is urban. Close to 25.7% of the population are less than 15-year old, 70.25% are between 15-65 and the remaining 4.06% are over 65 years old. Persian is the dominant language in the region. Some residents speak Arabic while the nomads speak Turkish. Average temperature is 23.1° C and average humidity stands at 67%-75% during 6:30 - 12:30 am. The history of Bushehr goes back to the ancient Elam when the Elamite kings used it as a naval base and a port city. Having a 600km border with the Persian Gulf, Bushehr enjoys a strategic position. Resisting aganist the foreign intervention is a major part of the contemporary history of Bushehr. With a host of different huge industrial projects underway in the province, including Bushehr Nuclear Power Plant and Pars Special Economic/Energy Zone, it has attracted a large workforce from other provinces.

Major industries and economic sectors in the region

Oil, gas, petrochemical, fishing and agriculture (date palm groves) are the significant industries in the province. The geographical advantages of Bushehr including its vicinity to the Persian Gulf plus its fishing and date industry play an important role in its economy. But, its huge hydrocarbon reserves have considerably boosted the economy of this province. Bushehr consists of 9 cities, 29 towns, 22 districts and 43 villages.

The major natural, archeological and historical places of interest in the province are as follows:

Bushehr: (in central region) the ancient Siraf region, Qavam ancient underground water reservoir , Malek building, Shaqab cemetery, Sheikh Sadoon mosque, Holy Christ church, (in Kharg Island) the Dutch castle, Pozeidon temple, Mir Mohammad Hanifeh mausoleum, Kharg ancient church

Tangestan: Ahrom, Mir Ahmad and Khanik hot springs, Zar Khezerkhan castle,
Kalat castle and Rais Ali Delvari's house.

Borazjan: Dalaki, Borazjan and Khanik hot springs, Bardak Siah castle, Kooroush
castle, Derakht underground water reservoir, Tooz ancient area, Telesmi and Khandaq hills, Forty-Houses cave

Bandar Dayyer (Dayyer Port): Bardestan mosque, Bardestan castle, islands and
seashore, riverside park, Emamzadeh SeyyedJamaludin shrine

Khormooj: Mand Fortress, Dokhtaar castle, Shirinou building, Shahzadeh Mohammad, Ganoyeh hot spring, Seyyed Mohammad Amin

Bandar Genaveh (Genaveh Port): Gonbad hills, Toodeev, Bi Mareh mausoleum, Khan Hosseiniyeh, Holleh lagoon, seaside

Bandar Deilam (Deilam Port): Emamzadeh Soleiman, Seeniz port, Ememzadeh Hassan, seaside

Kangan

Kangan port is the center of the town of Kangan. It lies on the southwest of the province on the Persian Gulf coast nearby Bandar Dayer. It covers an area of 3,083 sq km and has a population of over 95,000 people. It has an ancient history which goes back to 350 BC. During the Safavids period, it was named Kugana. After the Safavids, the name was changed to Kangan. At the early islamic period it was named Bandar (port) Siraf. In the sixteenth century, Kangan was divided in two regions. The division is still valid ever since despite some minor changes.

Poshtkooh region

Jam district is located in this region which consists of Jam and Riz villages with 129 small hamlets.

Assaluyeh Port

It is located on the northern coast of the Persian Gulf, 70 km southeast of Kangan port. There is no consensus about the origin and the meaning of the word Assaluyeh. Some say that the fresh water that flew down from Bid Khoon to a nearby valley was very tasty and refreshing. As a result, the locals called it ‘Asal’, meaning honey in Farsi. Some others say the word has originated from the Elamite language and was written ‘aslaviyeh’ meaning port. And another interpretation is that the word has its roots in the word ‘asl’ which means ‘pond’.
In 1998, Pars Special Economic /Energy Zone was established based on a cabinet authorization to utilize the gas from the South Pars field in a bid to develop the oil, gas, petrochemical and their related downstream industries. Covering an area of 30,000 hectares, the zone lies on the east of Bushehr province. It is 105km away from the offshore South Pars Gas field. The zone is bounded in the west by Shirino village, in the south by the Persian Gulf, in the north by the Zagros Range and in the east by Chah Mobarak village. Its temperature fluctuates between 5-50 degrees centigrade in the course of the year. The average humidity ranges between 59-88 percent. Average annual rainfall is about 180 millimeters.

Sheibkooh region

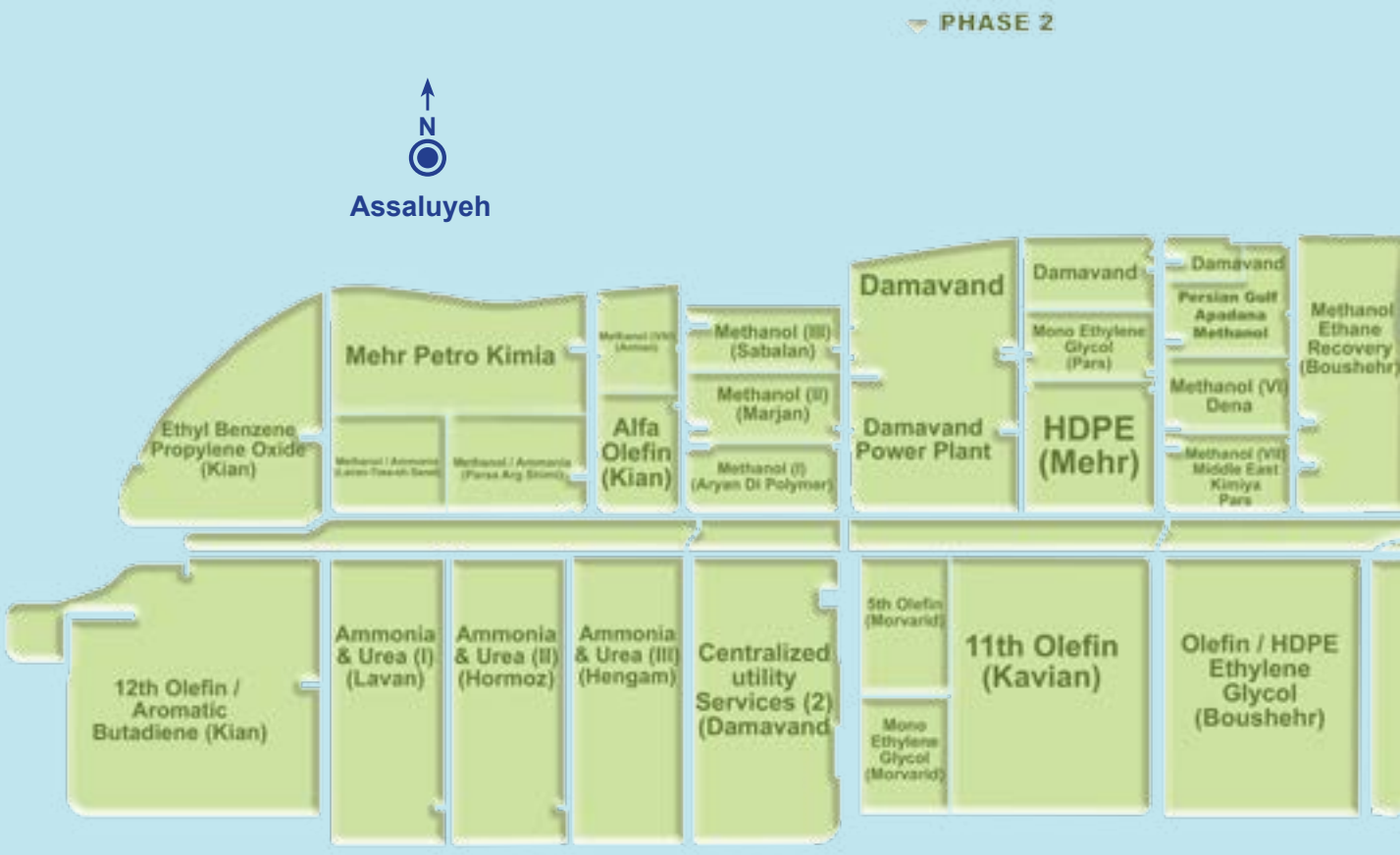
The central section of the town of Kangan is situated in this region. The region covers the coast of Kangan and its suburbs. It consists of 70 villages and 3 hamlets namely Assalouyeh, Nai Band and Taheri. Taheri castle in Bandar Taheri, Mianloo hot spring and Seyyed Gharib mausoleum in Kangan, Jam palm trees and the beautiful Bandar Kangan and Bandar Taheri seashores are the most fascinating places of interest in the area.The exploration of huge gas reserves in Kangan has promoted the region’s role in Iran’s economy. Explorations of Kangan, Nar, South and North Pars fields have led to enormous investment in Kangan. Fajr Refinery in Kangan and South Pars refinery already under construction, are among the world’s largest refineries. Pars region has attracted Iran’s huge domestic investment.

Pars Special Economic / Energy Zone (Assaluyeh)

The Pars Special Economic / Energy Zone Organization on behalf of Iran's Petroleum Ministry and National Iranian Oil Company (NIOC) manages and develops the South and North oil and gas fields in the region. The Zone consists of three regions; Pars 1 (South Pars) with an area of 14.000 hectares, Pars 2 (Pars Kangan) with an area of 16.000 hectares and Pars 3 (North Pars) with an area of 16.000 hectares. The Organization was established in 1999 to support the development of South Pars Gas Field, the world's largest gas field, through establishing, approving, planning, implementing, utilizing and maintaining the infrastructures such as roads, railways, ports, airports, power plants and drinking water facilities. The availibility of proper infrastructures in the up, middle and downstreams of oil and gas industry, Pars complex port, the International Persian Gulf airport, water and power facilities, communication, roads and available natural tourist attractions have made the region an ideal place for local and foreign investors. Lying on the coast of the Persian Gulf, the zone has access to the rich hydrocarbon resources in the region providing lucrative conditions for foreign investment. It is the hub of development activities underway at South Pars gas field. With its reserves estimated at 14 trillion cubic meters of gas and 18 billion barrels of condensates, the field is the world's largest gas field. It represents 6.8% of the global gas reserves. Given the field's capacity, 28 development phases and 3 giant LNG projects have so far been planned to be implemented in Assaluyeh and Kangan in an area of 30,000 hectares. Currently, the first ten phases are onstream. On average, $1.5bn has been invested for each phase.

The implementation work of phases 11 - 24 have been started and are underway.

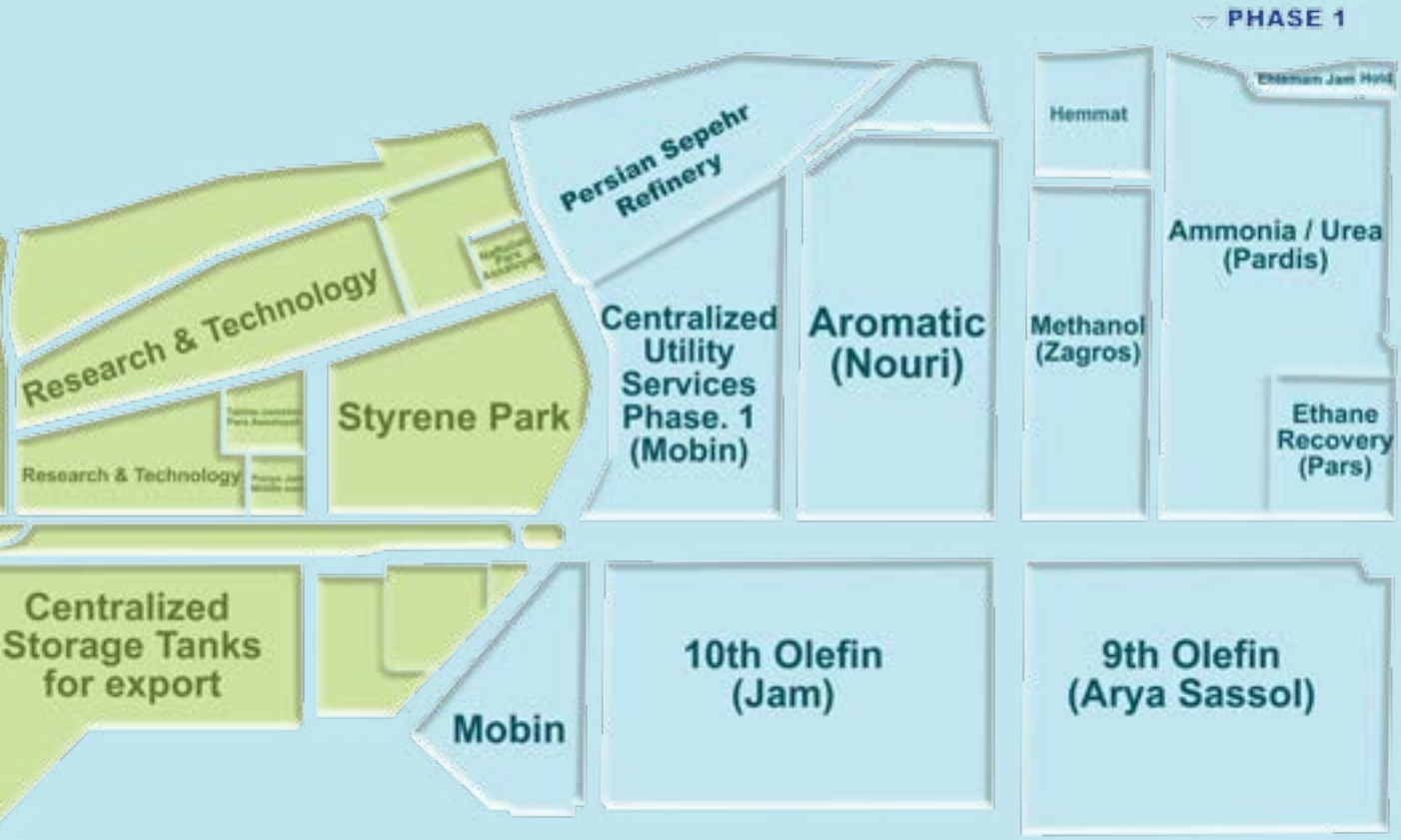
Several world-scale petrochemical plants are being constructed in Assaluyeh zone as part of the country`s 3rd, 4th & 5th development plans.



Investment advantages and incentives

- Availability of abundant gas reservoir
- Access to international waters and markets in south of the Persian Gulf and the far east
- Availability of airport
- Deep navigable waterways
- Well-developed ports for export of petrochemicals and LPG with a loading capacity of 30 million tonnes per year, service port with an annual loading capacity of 10 million tonnes equipped with warehouses & other required services including customs clearance
- Availability of an independent power plant and a desalination unit
- Availability of both skilled and unskilled workforce
- Vicinity to tourist attractions and commercial and industrial facilities in Kish, Qeshm, Shiraz and Esfahan
- Availability of independent communication networks facilitating communications and data transmission
- Access to the mainland and central Asian markets via local transport networks
- Tax exemption for any industrial investment
- Free entry and exit of capital
- Exemption from customs duties & commercial interests for imports of raw material, machinery, equipment and spare parts
- Possibility of spending foreign reserves fund
- Up to 100% foreign joint investment and ownership

(with the exception of land)



Pardis Petrochemical Co.

Nominal Capacity
5,265
KT/Y

- **Location:** Pars Special Economic/Energy Zone
- **Area:** 64.6 hectares
- **Founded:** 2001
- **Ownership:** Parsian Oil & Gas Development Co. (68.7%), Petrochemical Commercial Co. (15.9%), Other Shareholders (15.4%)
- **Capital:** IRR 6,000,000,000,000

Production Capacity (KT/Y)

Phase - 1

Product	Nominal Capacity	Feed	Licensor	Start up date
Ammonia	680	Natural gas	M. W. Kellogg	2009
Granular urea	1,075	CO2,ammonia	Stami Carbon,H.F.T	2009

Phase - 2

Product	Nominal Capacity	Feed	Licensor	Start up date
Ammonia	680	Natural gas	M. W. Kellogg	2017
Granular urea	1,075	CO2, ammonia	Stami Carbon, H.F.T	2017

Phase - 3

Product	Nominal Capacity	Feed	Licensor	Start up date
Ammonia	680	Natural gas	M. W. Kellogg	2017
Granular urea	1,075	CO2, ammonia	Stami Carbon, H.F.T	2017

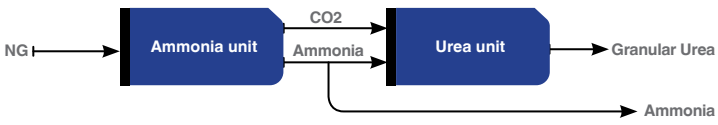
Products application

Urea: production of chemical fertilizers for agricultural purposes; raw material of melamine ammonia: raw material for industrial and agricultural purposes

Input feed	Amount (Mm^3/y)	Source
* Natural gas	2,148	South Pars Gas Field (Through Mobin Petrochemical Co.)

* Includes feedstock & fuel

Production Process Diagram



ISO Certifications

Nouri (Borzuyeh) Petrochemical Co.

Nominal Capacity
4,479
KT/Y

- **Location:** Pars Special Economic/Energy Zone
- **Area:** 61 hectares
- **Founded in:** 2001
- **Ownership:** Persian Gulf Petrochemical Co. (76.55%); Tamin Chemical & Petrochemical Industry Co. (17%), Civil Pension Investment Co.(6.45%)
- **Capital:** IRR 3,000,000,000,000

Products application

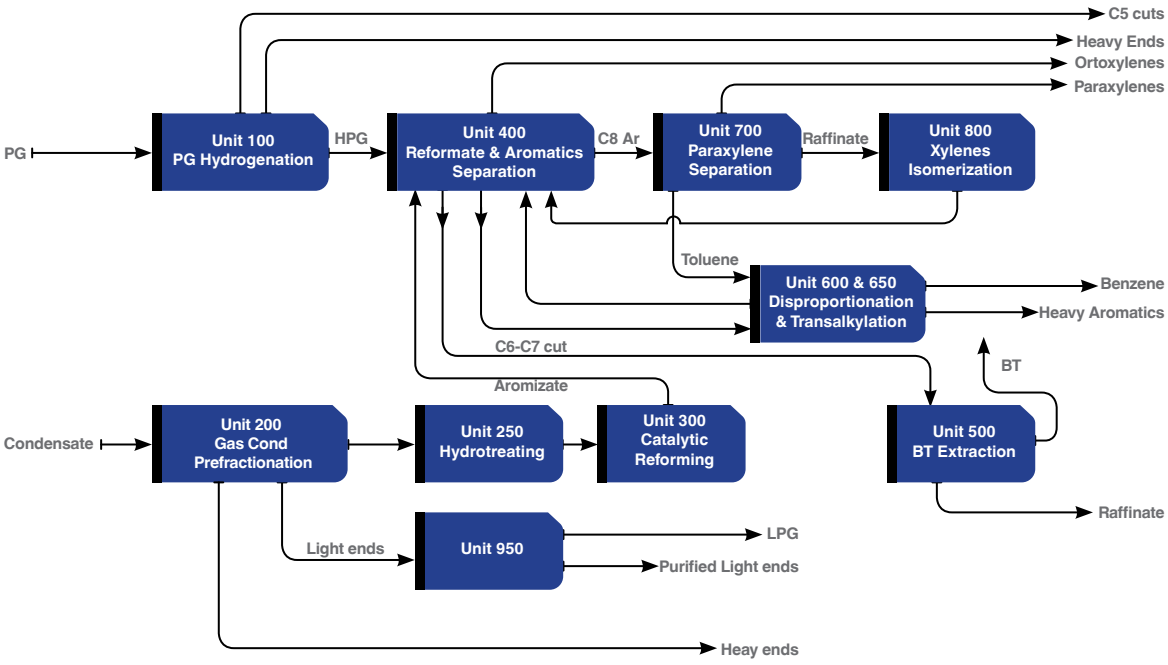
Paraxylene is used in the production of PTA, DME as well as intermediate feedstock for polyester & fiber.Benzene is used in the production of styrene, dodecyl benzen for detergents, cyclohexene (for nylon), phenol and nitrobenzene (for anylene production) and solvents. Orthoxylene is used for the production of softeners & pharmaceuticals, pesticides, paints and anhydrid phthalic

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Paraxylene	750	Condensates, pyrolysis gasoline	IFP(France) Toray (Japan) Uhde (Germany)	July 2007
Benzene	430			
Orthoxylene	100			
Heavy ends	2,000			
Heavy aromatics	16			
Raffinate	380			
Light ends	680			
LPG	76			
C5 cut	47			

Input feed	Amount (KT/Y)	Source
Condensates	4,500	South pars phases
Pyrolysis gasoline	270	Jam Petrochemical Co.

Production Process Diagram



ISO Certifications

certificate ISO 9001 | certificate ISO 14001 | certificate OHSAS 18001 | certificate HSE-MS (SGS Co.) | certificate ISO 20001 | certificate EFQM

Pars Petrochemical Co.

Nominal Capacity
4,481
KT/Y

- **Location:** Pars Special Economic/Energy Zone
- **Area:** 23 hectares + 14 hectares for EB/SM
- **Founded in:** 1998
- **Ownership:** Persian Gulf Petrochemical Co. (56.1%), Ghadir Investment (18.7%), Parsian Oil & Gas Development Co. (18.8%), Other shareholders (6.4%)
- **Capital:** IRR 6,000,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Ethane	1,600	Rich gas	Linde (Germany)	2006
Propane	980	〃	〃	〃
Butane	570	〃	〃	〃
$C5^+$	86	〃	〃	〃
Ethyl benzene	645	Ethylene / Benzene	Snamprogetti	2009
Styrene monomer	600	Ethyl benzene	〃	2009

Products application

Ethane: olefins & fuel

Propane: olefin units, raw material for industrial applications as well as refrigerant fluid

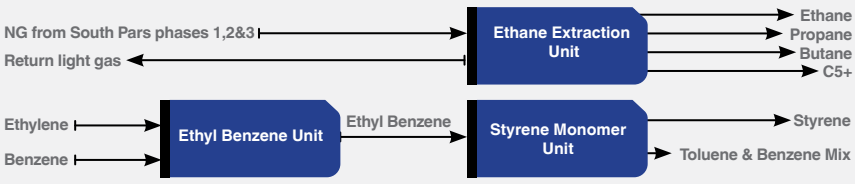
Butane: olefin units, main material for industrial usage & fuel

Pentane: olefin plants, main material for industrial usage & fuel

Styrene monomer: styrene, rubber, resins, adhesives, solvents, textiles, ABS, SBR, SAN

Input feed	Amount (KT/Y)	Source
Rich gas	3,300	South Pars phases (1,2 & 3)
Ethylene	175	Arya Sasol Polymer Co.
Benzene	480	Nouri & Buali Sina Petrochemical Companies

Production Process Diagram



ISO Certifications

certificate ISO 9001 | certificate ISO 14001 | certificate ISO 50001 | certificate OHSAS 18001 | certificate ISO 29001 | certificate EFQM

Arya Sasol Polymer Co.

Nominal Capacity
1,691
KT/Y

- **Location:** Pars Special Economic/Energy Zone
- **Area:** 72 hectares
- **Founded in:** 2003
- **Ownership:** Pars Petrochemical Co. (50%), Pars Tamin Majd Co. (50%)
- **Capital:** IRR 4,583,840,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Ethylene	1,000	Ethane	Technip	2007
C3+	91	〃	〃	2007
LDPE	300	Ethylene	Sabtec	2008
HDPE/MDPE	300	〃	Basell	2008

Products application

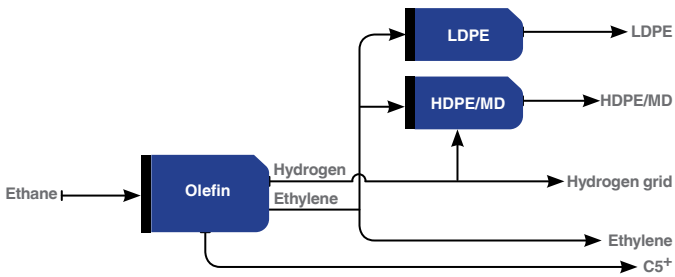
LDPE: films, bags, containers, cable coating and industrial parts

HDPE & MDPE: home appliances, films, industrial parts, containers, pipes, plastic bottles

Ethylene: feedstock for polymer units

Input feed	Amount (KT/Y)	Source
Ethane	1,267.5	Pars Petrochemical Co.
Propane	90 t/y	Pars Petrochemical Co.
Hexene-1 (Co-monomer)	1.3	Import
Propylene	5.87	Jam Petrochemical Co.
Hexene	390 t/y	Import

Production Process Diagram



ISO Certifications

ISO 9001 · ISO 14001 · OHSAS 18001 · ISO 17025 · ISO 50001 · EFQM

Mobin Petrochemical Co.

- **Location:** Pars Special Economic/Energy Zone
- **Area:** 84 hectares
- **Founded in:** 2000
- **Ownership:** Persian Gulf Petrochemical Co. (87%) Other Shareholders (13%)
- **Capital:** IRR 14,252,000,000,000

Production Capacity

Product	Nominal Capacity	Feed	Licensor	Start up date
Electricity	986 MW	Natural gas	GE	2004 & 2009
Steam	2,865 t/h	DM water	Foster Wheeler	2005
Fresh water	1,560 m^3/h	Sea water	Sidem	2004
DM & condense water	2,700 m^3/h	Fresh water;Returned condense	Sidem/Comar	〃
Potable water	100 m^3/h	Fresh water	〃	Ready for start-up
Oxygen (44 bar)	168,000 Nm^3/hr	Atmosphere	Linde	2005 & 2009
Oxygen (29 bar)	50,400 Nm^3/hr	〃	〃	〃
Nitrogen	96,000 Nm^3/hr	〃	〃	〃
Service air	8,500 Nm^3/hr	〃	〃	〃
Instrument air	44,000 Nm^3/hr	〃	〃	〃
Service water	330 m^3/h	Water	Bamag	2007
Cooling water	386,000 m^3/h	Sea water	Sadra	2006

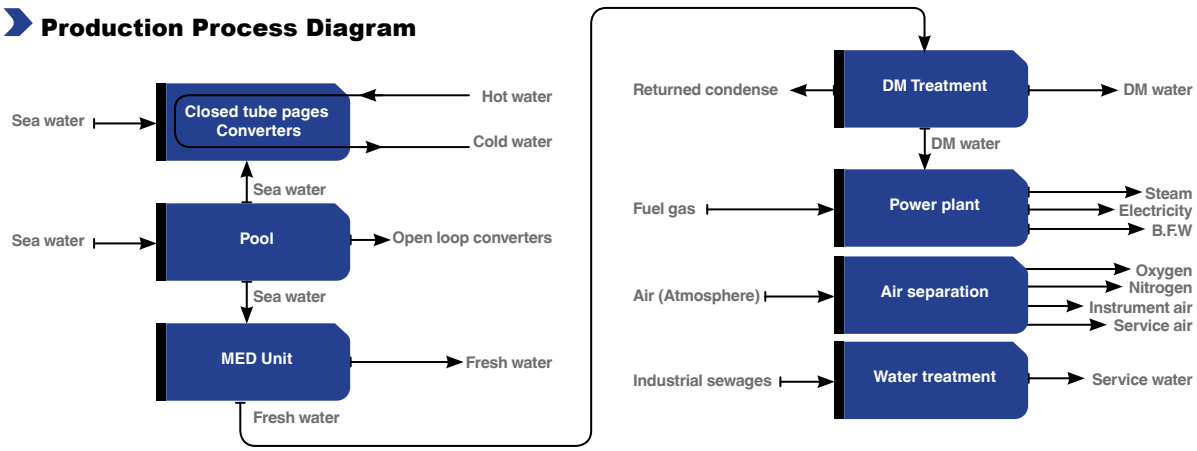
Products application

Supply of utilities for petrochemical complexes at Pars Special Economic/Energy Zone

Input feed	Amount (Mm^3/d)	Source
* Natural gas	27.6	South Pars Oil & Gas Co.
Sea water	-	Persian Gulf

* Includes feedstock & fuel

Production Process Diagram



ISO Certifications

certificate ISO 9001 | certificate ISO 14001 | certificate OHSAS 18001 | certificate ISO 29001 | certificate ISO 27001 | certificate ISO 50001 | certificate EFQM

Zagros Petrochemical Co.

- **Location:** Pars Special Economic/Energy Zone
- **Area:** 31 hectares
- **Founded in:** 2000
- **Ownership:** Parsian Oil & Gas Development Co. (34.5%), Taban-e Farda Petrochemical Group (21%), Morvarid Industrial Investment Co. (17.8%), Shimi Pooshineh Industrial Co. (17.8%), Other Shareholders (8.9%)
- **Capital:** IRR 2,400,000,000,000

Production Capacity (KT/Y)

Phase - 1

Product	Nominal Capacity	Feed	Licensor	Start up date
Methanol	1,650	Natural gas & oxygen	Lurgi	2006

Phase - 2

Product	Nominal Capacity	Feed	Licensor	Start up date
Methanol	1,650	Natural gas & oxygen	Lurgi	2009

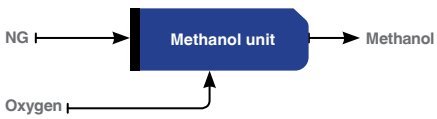
Products application

Production of MTBE, acetic acid, formaldehyde and as solvent in chemical industries

Input feed	Amount (Mm^3/y)	Source
* Natural gas	2×1500	South Pars Gas Feild (throuth mobin petrochemical Co.)
Oxygen	2×664	Mobin Petrochemical Co.

* Includes feedstock & fuel

Production Process Diagram



ISO Certifications

certificate ISO 9001

certificate ISO 14001

certificate OHSAS 18001

Nominal Capacity
300
KT/Y

Mehr Petrochemical Co.

- **Location:** Pars Special Economic/Energy Zone (Site No. 2)
- **Area:** 13 hectares
- **Founded in:** 2005
- **Ownership:** Singapore Petrochemical Investment Ettehad Co. (60%), NPC International (40%)
- **Capital:** IRR 640,800,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	License	Start up date
HDPE	300	Ethylene	Mitsui(MCI)	2009

Products application

Production of plastics such as: pipes, cable coating, film, ...

Input Feed	Amount (KT/Y)	Source
Ethylene	310	Jam and other petrochemical complexes
Butene-1	2.5	import / Jam Petrochemical Co.

Production Process Diagram

ISO Certifications

certificate ISO 9001 | certificate ISO 14001 | certificate OHSAS 18001 | certificate ISO 50001 | certificate EFQM

Jam Petraochemical Co.

- **Location:** Pars Special Economic/ Energy Zone
- **Area:** 77 hectares + 22 hectares in phase 2
- **Founded in:** 2000
- **Ownership:** Tamin Oil, Gas & Petrocheamical Investment Co. (15.7%),Civil Retirement Investment Fund (23.8%), National Pension Fund (22.9%), Justice Shares Broker Co. (15%), Other shareholders (22.6%)
- **Capital:** IRR 9,600,000,000,000

Production Capacity (KT/Y)

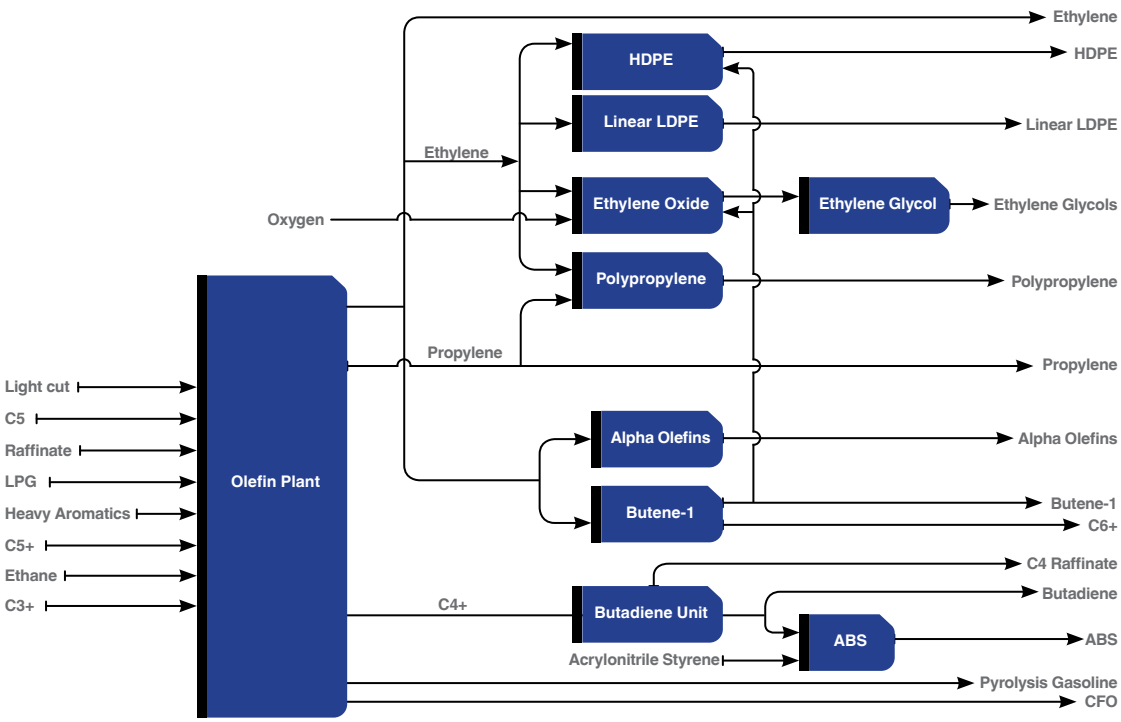
Product	Nominal Capacity	Feed	Licensor	Start up date
Ethylene	1,320	Ethane, light cuts, C3+, C5+, LPG, heavy aromatics	Technip	2007
Propylene	305			
Raw pyrolysis gasoline	216			
CFO	40			
C4+	245			
LLDPE / HDPE	300	Ethylene	Basell	2008
HDPE	300	Ethylene	〃	2007
Butadiene 1&3	115	C4 cut	BASF	2009
C4 Raffinates	130			
Butene-1	100	Ethylene	Axens	2012
$C6^{+}$	8.5	Ethylene	Axens	2012

Products application

Feedstock for acrylic rugs, fibers, acrylic, solvents, paints, lubricants, anti-freeze, textiles & adhesives as well as various plastic products such as cable coating, films, containers and pipes. Industrial parts such as: audio visual appliances, inner auto parts,...

Input feed	Amount (KT/Y)	Source
Light cuts	680	Nouri (Borzuyeh) Petrochemical Co.
Raffinates	380	〃
C5 cut	55	〃
LPG	83	〃
Heavy aromatics	16	〃
Ethane	707	South Pars Gas Field
Ethane	257	Pars Petrochemical Co.
C3+	87	Aryasasol-Kavian-Morvarid Petrochemical Co.
C5 cut	91	Pars Petrochemical Co.

Production Process Diagram



ISO Certifications

certificate ISO 9001 | certificate ISO 14001 | certificate OHSAS 18001 | certificate ISO 10015 | certificate ISO 17025 | certificate ISO 50001 | certificate EFQM

Morvarid Petrochemical Co.

Nominal Capacity
1,100 KT/Y

- **Location:** Pars Special Economic/ Energy Zone (Site 2)
- **Area:** 17.29 hectares
- **Founded in:** 2005
- **Ownership:** Petrofarhang Co. (46.6%), Tabane Farda Petrochemical Group (34%), Tamin Oil, Gas & Petrochemical Investment Co. (17%), Other shareholders (2.4%)
- **Capital:** IRR 4,949,210,596,000

Production Capacity (KT/Y)

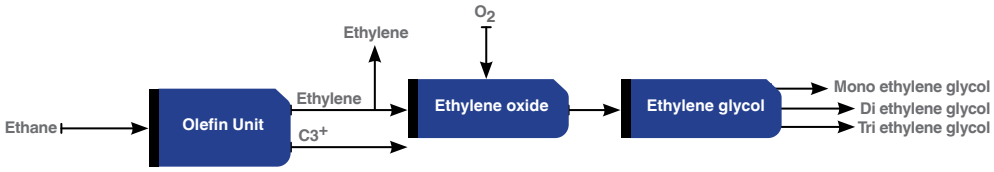
Product	Nominal Capacity	Feed	License	Start up date
Ehylene	500	Ethane	Technip	2010
C3+	47	Ethane	Technip	2010
Mono ethylene glycol	500	Ethylene/O_2	Shell	2016
Di ethylene glycol	50	Ethylene/O_2	Shell	2016
Tri ethylene glycol	3	Ethylene/O_2	Shell	2016

Products application

Raw material for production of polyethylene and ethylene glycols

Input Feed	Amount (KT/Y)	Source
Ethane	650	Pars Oil & Gas Co.
O_2	368	Damavand Petrochemical Co.

Production Process Diagram



ISO Certifications

certificate ISO 9001 · certificate ISO 14001 · certificate OHSAS 18001 · certificate IMS · certificate ISO 50001 · certificate EFQM

Kavian Petrochemical Co.

Nominal Capacity
2,178 KT/Y

- **Location:** Pars Special Economic/ Energy Zone (Site 2)
- **Area:** 43 hectares
- **Founded in:** 2006
- **Ownership:** Khalij Fars Petrochemical Co. (19.8%), Bakhtar Petrochemical Co. (60.6%), Lorestan Petrochemical Co. (4.2%), Kermanshah Polymer Co. (4.2%), Kordestan Petrochemical Co. (4.2%), Mahabad Petrochemical Co. (4.2%)
- **Capital:** IRR 7,999,915,196,000

Production Capacity (KT/Y)

Phase - 1

Product	Nominal Capacity	Feed	License	Start up date
Ehylene	1,000	Ethane	Technip	2012
$C3^+$	89	Ethane	Technip	2012

Phase - 2

Product	Nominal Capacity	Feed	License	Start up date
Ehylene	1,000	Ethane	Technip	2016
$C3^+$	89	Ethane	Technip	2016

Products application

Raw material for production of polyethylene and ethylene glycols

Input Feed	Amount (KT/Y)	Source
Ethane	2,535	South Pars Oil & Gas Co.

Production Process Diagram

Farsa Shimi Co.

Nominal Capacity
443
KT/Y

- **Location:** Pars Special Economic/ Energy Zone
- **Area:** 7 hectares
- **Founded in:** 2002
- **Ownership:** Natural persons (100%)
- **Capital:** IRR 1,350,000,000

Production Capacity (KT/Y)

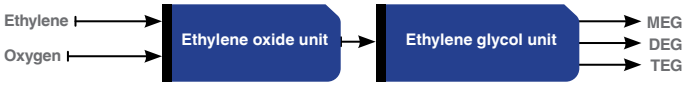
Product	Nominal Capacity	Feed	License	Start up date
MEG	400	Ethylene & Oxygen	Shell	2007
DEG	40	〃	〃	〃
TEG	3	〃	〃	〃

Products application

Production of polyester fibers, anti-freeze & solvents

Input Feed	Amount (KT/Y)	Source
Ethylene	260	Jam Petrochemical Co.
Oxygen	300	Mobin Petrochemical Co.

Production Process Diagram



ISO Certifications

certificate ISO 9001

certificate ISO 14001

certificate OHSAS 18001

Jam Polypropylene Co.

Nominal Capacity
300
KT/Y

- **Location:** Pars Special Economic / Energy Zone
- **Area:** 8 hectares
- **Founded in:** 2004
- **Ownership:** Petroshimiran (51%), Jam Petrochemical Co. (49%)
- **Capital:** IRR 2,000,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	License	Start up date
Polypropylene	300	Propylene	Basell	2008

Products application

Raw Material for plastic, textile, auto parts, packing films, water pipes, industries for domestic needs and export

Input Feed	Amount (KT/Y)	Source
Propylene	305	Jam Petrochemical Co.

Production Process Diagram

ISO Certifications

Jam Ehtemam Co.

- **Location:** Pars Special Economic, Energy Zone
- **Area:** 2 hectares
- **Founded in:** 2004
- **Ownership:** Natural persons (100%)
- **Capital:** IRR 32,000,000,000

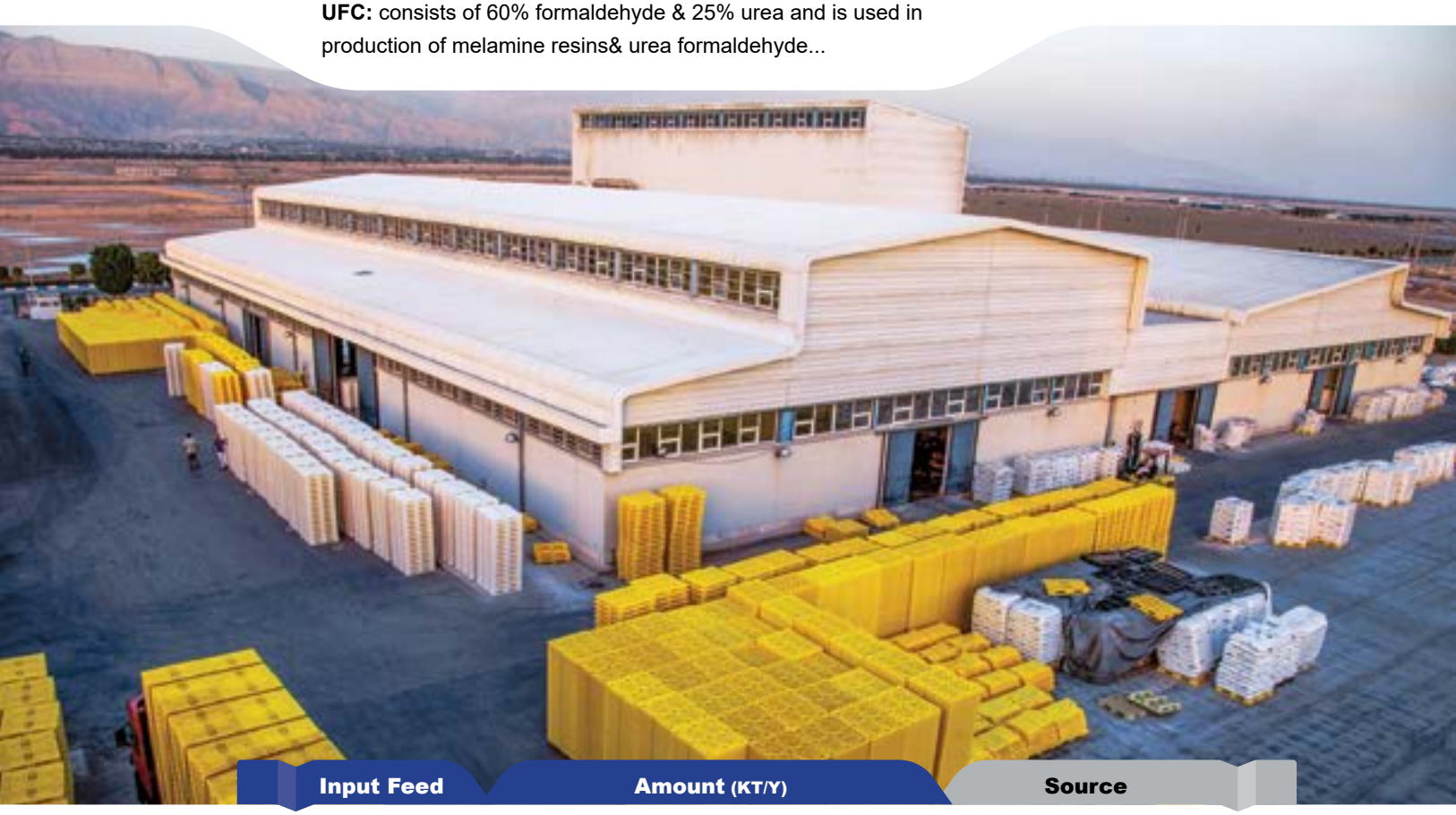
Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	License	Start up date
Formaldehyde Urea (UFC)	48	Methanol, urea & soda	Alder(Italy)	2011

Products application

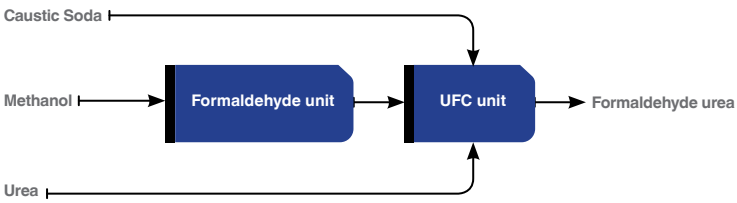
Formaldehyde: production of adhesives, auto and textile industry, sanitary & Medical products, urea formaldehyde resins...

UFC: consists of 60% formaldehyde & 25% urea and is used in production of melamine resins& urea formaldehyde...



Input Feed	Amount (KT/Y)	Source
Methanol	33.6	Zagros Petrochemical Co.
Urea	12	Pardis Petrochemical Co.
Caustic soda	0.4	Arvand Petrochemical Co.

Production Process Diagram



ISO Certifications

Entekhab Industrial Group

- **Location:** South Pars Special Economic / Energy Zone (phase 2)
- **Area:** 5.85 hectares
- **Founded in:** 2013
- **Ownership:** Entekhab Investment Development (100%)
- **Capital:** IRR 5,000,000,000,000

Production Capacity (KT/Y)

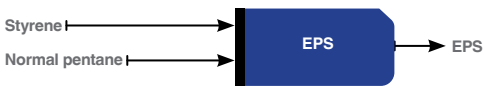
Product	Nominal Capacity	Feed	License	Start up date
Expandable polystyrene	250	Styrene monomer	B.P. Innovence	2016

Products application

Production of home appliances, electrical insulation, packing industry, food containers & toys

Input Feed	Amount (KT/Y)	Source
Styrene monomer	238	Pars Petrochemical Co.
Normal-Pentane	22	PetroSanat Naftalyan Co. of Assaluyeh

Production Process Diagram



Takhte-Jamshid Petrochemical Pars Assaluyeh Co.

- **Location:** South Pars Special Economic / Energy Zone (Phase 2)
- **Area:** 5.3 hectares
- **Ownership:** Hounam Mehr Pars Co. (70%), Kimiagaran Hamoon Kish Co. (15%), Natural persons (15%)
- **Capital:** IRR 2,500,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	License	Start up date
PS	65	Styrene	TOYO	2016

Nominal Capacity

65
KT/Y

Products application

Production of home appliances, packing industry, electrical insulation

Input Feed	Amount (KT/Y)	Source
Styrene	62.4	Pars Petrochemical Co.

Production Process Diagram

Damavand Petrochemical co. (phase 1)

- **Location:** Pars Special Economic
- **Area:** 90 hectares
- **Founded in:** 2008
- **Ownership:** NPC (20%), Persian Gulf Petrochemical industries Co. (29.8%), Persian Oil & Gas Expansion Group (24.9%), Sata (24.9%), Preferred Stock (0.4%)
- **Capital:** IRR 12,500,000,000

Production Capacity

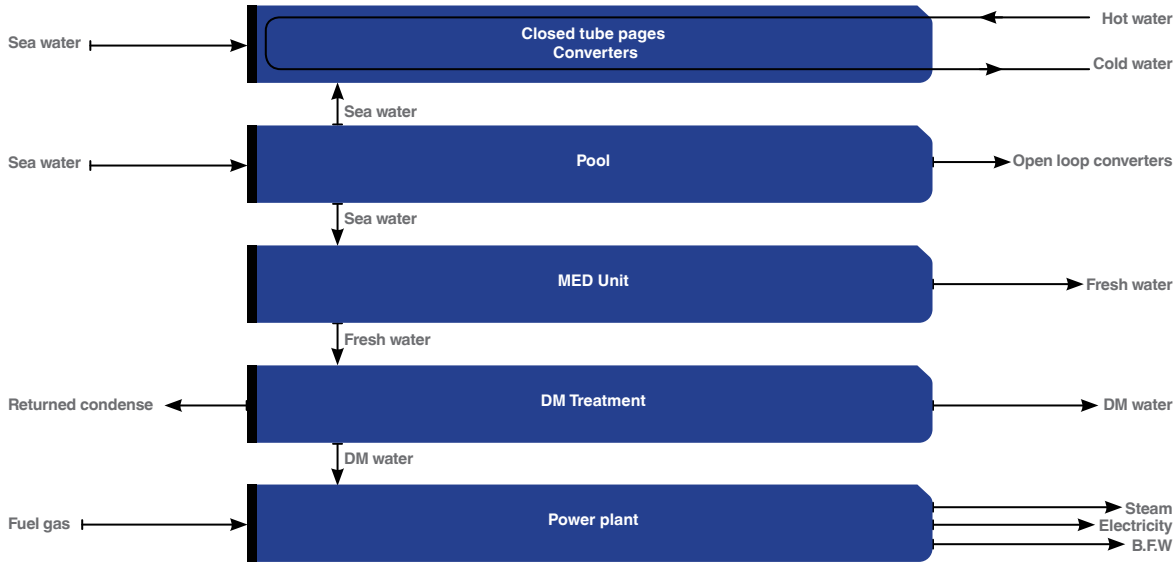
Product	Nominal Capacity	Feed	License	Start up date
Electricity	648 MW	Natural gas	GE	2015
Steam	780 t/h	Sea water/Air	Foster Wheeler	2015

Products application

Supply of utilities and centralized for 24 petrochemical complexes envisaged in the second phase of petrochemicals

Input Feed	Amount (Mm^3/d)	Source
Natural gas	3.2	South Pars Oil & Gas Co.
Sea water	-	Persian Gulf

Production Process Diagram



ISO Certifications

certificate ISO 9001 certificate ISO 14001 certificate EFQM

Marjan Petrochemical Co.

(7th Methanol)

Nominal Capacity
1,650
KT/Y

- **Location:** Pars Special Economic / Energy Zone (Phase 2)
- **Area:** 7 hectares
- **Founded in:** 2011
- **Ownership:** Shasta (67%), Fanavaran Petrochemical Co. (16%),Tamin Oil, Gas & Petrochemical Investment (17%)
- **Capital:** IRR 4,600,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	License	Start up date
Methanol	1,650	Natural gas & Oxygen	Haldor Topsoe (Denmark)	2018

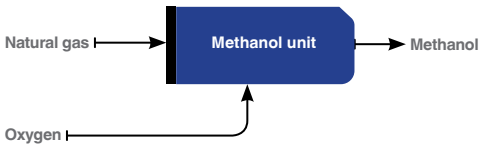
Products application

Production of MTBE, acetic acid, formaldehyde and as solvent in chemical industries

Input feed	Amount (Mm^3/y)	Source
* Natural gas	1,485	South Pars Gas Feild (throuth mobin petrochemical Co.)
Oxygen	511	Damavand/Marjan Petrochemical Co.

* Includes feedstock & fuel

Production Process Diagram



Bushehr Petrochemical Co.

Nominal Capacity
2,512 KT/Y

- **Location:** Pars Special Economic / Energy Zone
- **Area:** 70 hectares
- **Founded in:** 2011
- **Ownership:** Social Security Organization of Armed Forces (60%), Marun Petrochemical Co. (40%)
- **Capital:** IRR 5,300,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Sulfur	125	Sour gas	Technimont (Italy)	2018
Methane	1,325	Ethane rich gas	IPIP (Romania)	2018
Ethane	900	Ethane rich gas	IPIP (Romania)	2018
Propane	130	Ethane rich gas	IPIP (Romania)	2018
Butane	30	Ethane rich gas	IPIP (Romania)	2018
Pentane	2.1	Ethane rich gas	IPIP (Romania)	2018

Products application

Prodution of sulfuric acid, DME, phosphate production process, matches

Methane: feed the methanol unit

Ethane: feed for the Olfin units

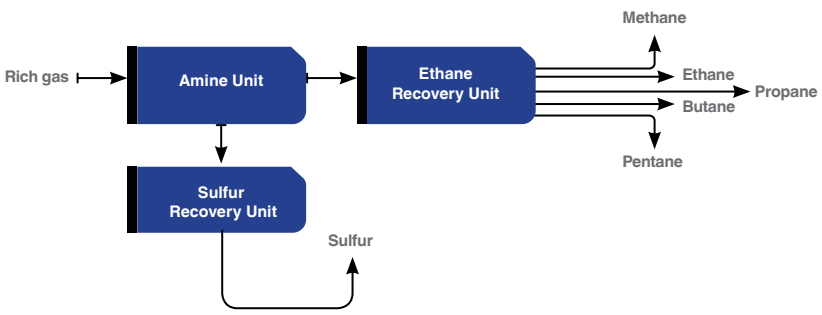
Propane: feed for the Olfin units

Butane: feed for the Olfin units

Pentane: Raw material in production of fuel and feed for the Olfin units

Input feed	Amount (t/h)	Source
Sour Ethane rich gas	360	phase 6,7,8

Production Process Diagram



Other Regions

Shazand (Arak) Petrochemical Co.

Nominal Capacity
1,451
KT/Y

- **Location:** Arak, 22km of Arak-Boroojerd Road
- **Area:** 523 hectares
- **Founded in:** 1984
- **Ownership:** National Development Investment (50.17%), Tamin Oil & Gas & Petrochemical Investment (16.7%), National Pension Fund (15.7%), Other shareholders (17.3%)
- **Capital:** IRR 8,064,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Ethylene	306.6	Naphtha	TPL, KTI	1993
Propylene	128	〃	〃	〃
C4Cut	79	〃	〃	〃
Fuel oil	65	〃	〃	〃
Hydrogenated hydrocarbon	169	PGH	IFP, UOP	〃
PP	75	Propylene	Himont	〃
Butene-1	7	Ethylene	IFP	〃
HDPE	85	〃	Hoechst	1994
LLDPE	75	〃	BP	〃
Butadiene	27.5	C4Cut	NIPPON, ZEON	〃
Polybutadiene rubber (PBR)	26	Butadiene	〃	〃
Ethylene oxide	113	Ethylene	Scientific Design	〃
EG	119	Ethyleneoxide	〃	〃
AA	30	Ethylene	Hoechst	1995
VA	30	Ethylene	Bayer	〃
2EH & butanols	55.7	Propylene	Davy Mckey	〃
Ethanolamines	30	Ethylene oxide, Ammonia	Oxiteno	1999
Ethoxylates	30	Fatialcohol, nonylphenol, ethylene oxide	Balestra	2003

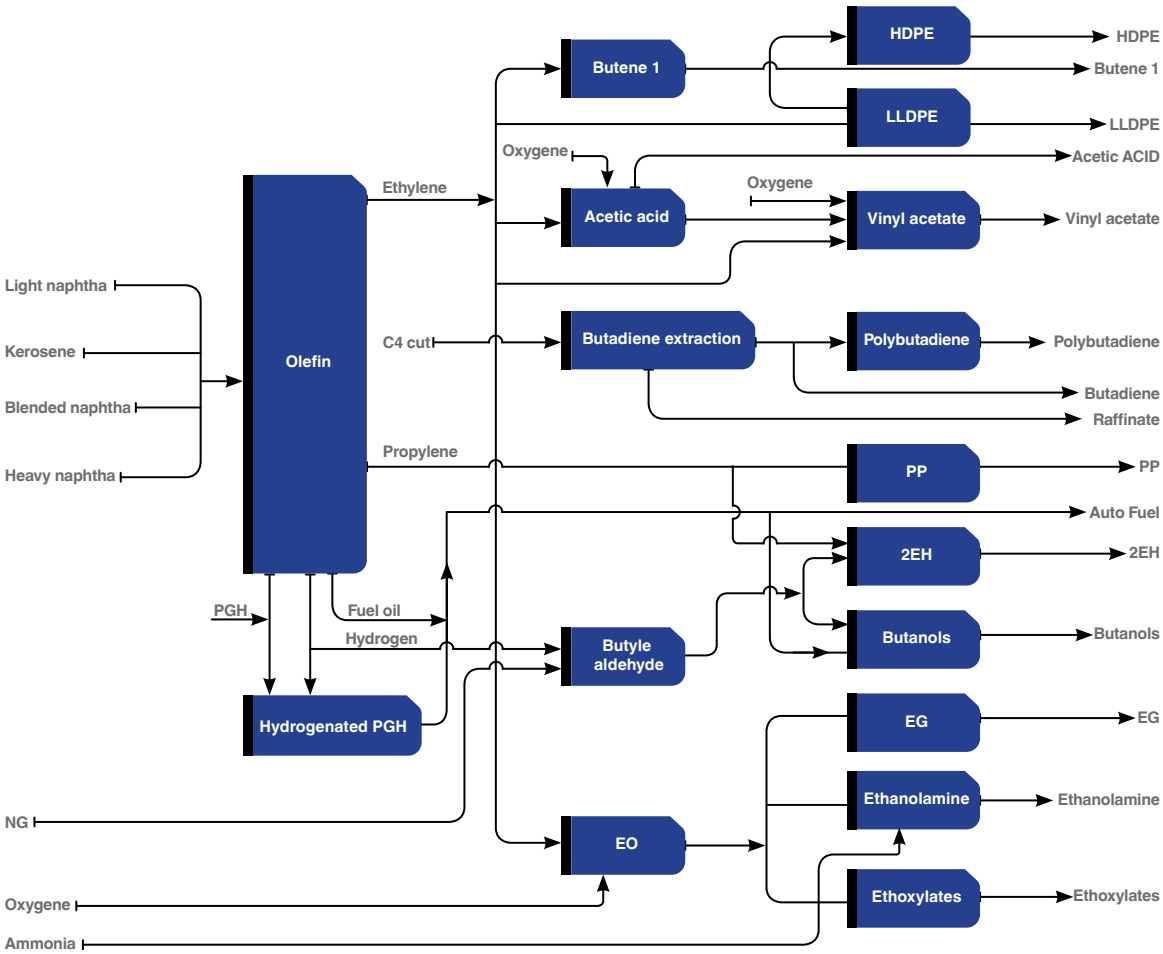
Products application

Production of plastic pipes, paints, adhesives, packing films, fibers, surgical threads, serum, polyester industries, solvents, detergents, anti-freeze, electrical insulation, shampoos, gas absorbents, pharmaceuticals, cosmetics, oil, gas & petrochemical industries, cement industry, antiseptics, plastic containers, toys, household appliances, bags, plastic sheets, water pipes, anti foams.

Input feed	Amount	Source
Light and heavy naphtha	927 (KT/Y)	Arak & Esfahan Refineries
Ammonia	6 (KT/Y)	Local sources
Propylene	6 (KT/Y)	Local sources/import
* Natural gas	420 Mm^3/y	NIGC

* Includes feedstock & fuel

Production Process Diagram



ISO Certifications

certificate ISO 9001 certificate ISO 14001 certificate OHSAS 18001 certificate ISO 17025

Isfahan Petrochemical Co.

Nominal Capacity
516
KT/Y

- **Location:** 5th km Azadegan Highway, Esfahan
- **Area:** 165 hectares
- **Founded in:** 1989
- **Ownership:** Mahour Spadana Vehicle Manufacturing Industrial (34.3%), National Pension Fund (22.3%), Other shareholders (43.4%)
- **Capital:** IRR 300,000,000,000

Esfahan Petrochemical Co.

It is Iran's first aromatics plant. It was brought onstream in 1992. The plant enjoys one of the world's state-of-the-art technologies and was the first plant in Iran which employed fully computerized DCS technology. It was privatized in 1997 and was subsequently listed on Tehran's Stock Exchange in 1999

Production Capacity (KT/Y)

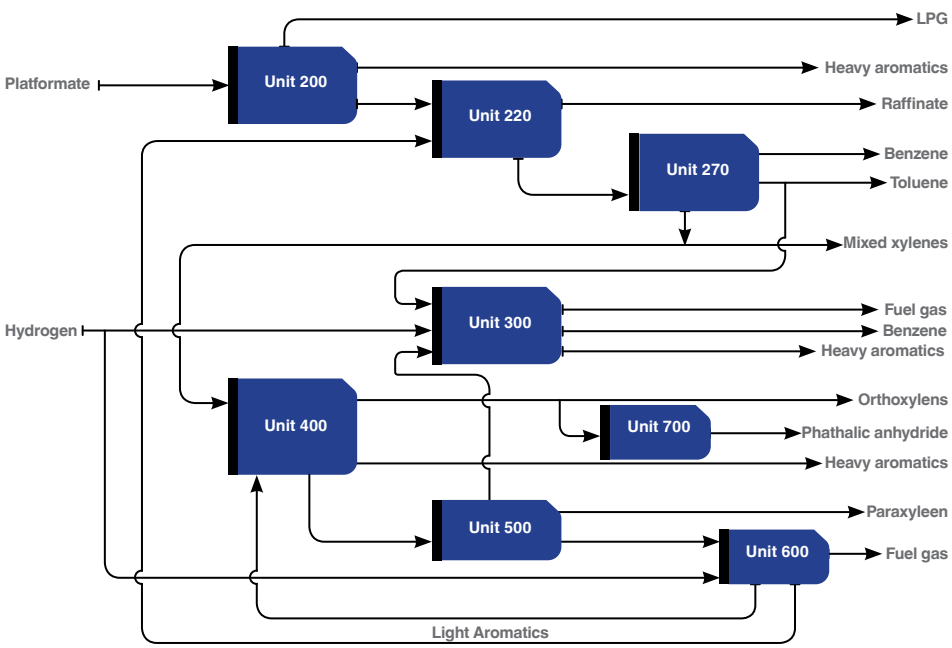
Product	Nominal Capacity	Feed	Licensor	Start up date
Benzene	55.7	Platformate	UOP	1992
Toluene	72	〃	〃	〃
Orthoxylene	22	Mixed xylenes	〃	〃
Paraxylene	44	〃	〃	〃
Mixed xylenes	75	Platformate	〃	〃
Phthalic Anhydride	40	orthoxylene	Rolechim	2008
Aromatic Raffinate	207	Platformate	UOP	1992

Products application

Benzene: raw material for softeners, detergents, insecticides and paints.
Toluene: raw material for softeners and solvents.
Orthoxylene: raw material for softeners, plastics and resins.
Paraxylene: production of resins, fibers, polyesters and polyacrylics.
Mixed xylenes: pesticides, paints, resins.
Phthalic anhydride: unsatarated polyester resins, plastics softener

Input feed	Amount (KT/Y)	Source
Platformate	363	Esfahan Oil Refinery Co.
Hydrogen	3.2	〃

Production Process Diagram



ISO Certifications

certificate ISO 9001

certificate ISO 14001

certificate OHSAS 18001

certificate EFQM

Kharg Petrochemical Co.

Nominal Capacity
1,135
KT/Y

- **Location:** Kharg Island
- **Area:** 155 hectares
- **Founded in:** 1966
- **Ownership:** Taban-e Farda Petrochemical Group (33.3%), Tamin Oil & Gas Petrochemical Investment (18.5%), Banks Retirement Investment Fund (9.8%) Other shareholders (21.2%),
- **Capital:** IRR 2,000,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Methanol	660	Sweet gas	Lurgi	1999
Sulfur	170	Sour gas	Pritchard	1967
Propane	115	〃	〃	〃
Butane	120	〃	〃	〃
Gasoline	70	〃	〃	〃

Products application

Methanol: raw material for producing MTBE, acetic acid, formaldehyde and industrial solvents

Sulfur: raw material for producing sulfuric compounds, sulfuric acid, fertilizers, electrical insulators, chemical and paper industries, rubber vulcanization, and medicine

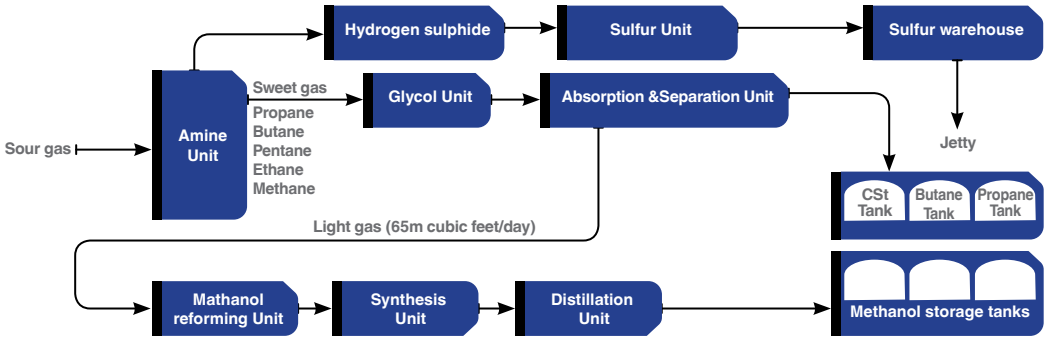
Propane: raw material in production of olefins and fuel

Butane: raw material in production of olefins and fuel

Gasoline: raw material in production of olefins and fuel

Input feed	Amount (KT/Y)	Source
Sour gases	1,402	Offshore oil wells

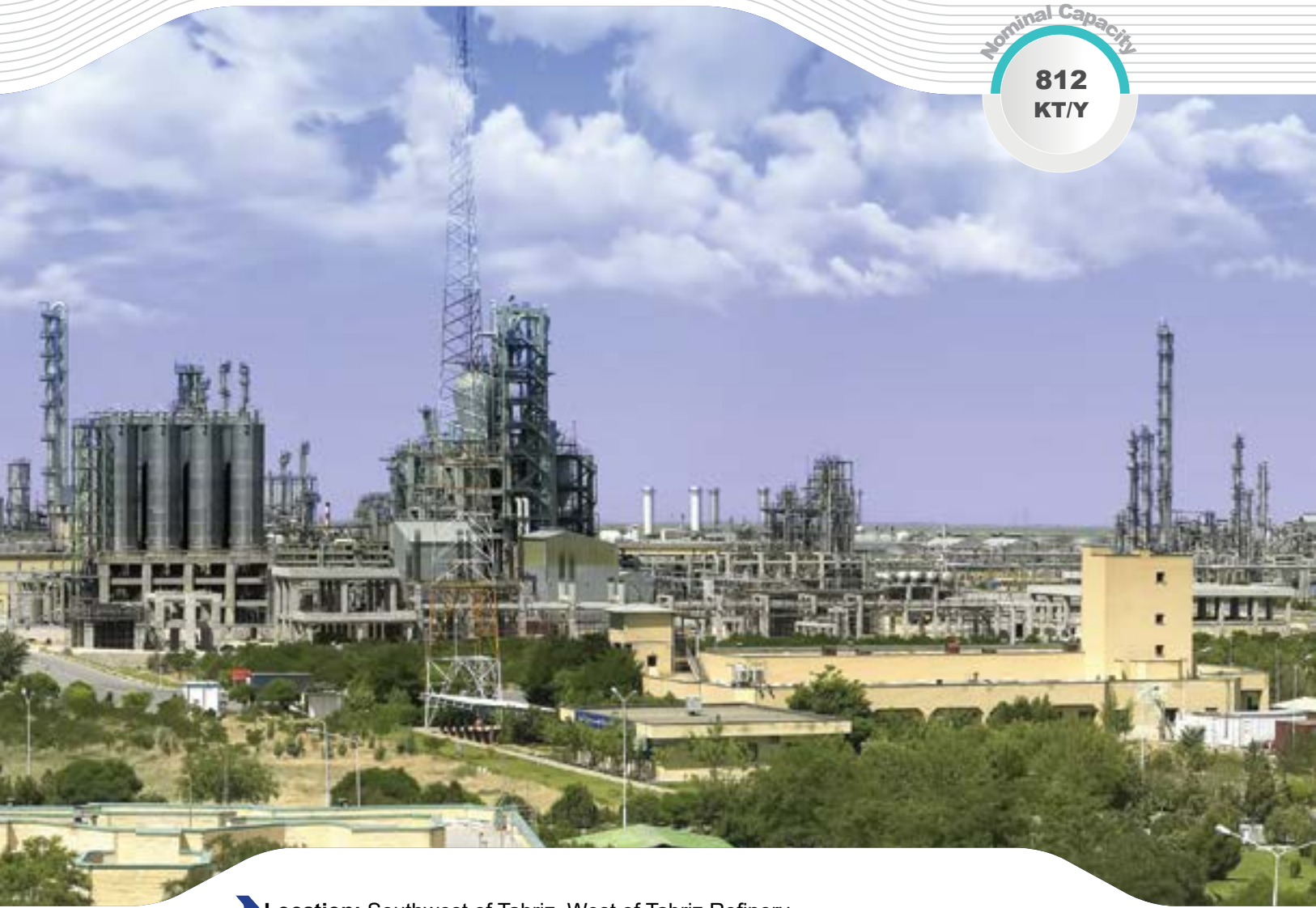
Production Process Diagram



ISO Certifications

certificate ISO 14001 certificate OHSAS 18001 certificate ISO 9001 certificate EFQM

Tabriz Petrochemical Co.



Nominal Capacity
812 KT/Y

- **Location:** Southwest of Tabriz, West of Tabriz Refinery
- **Area:** 391 hectares
- **Founded in:** 1988
- **Ownership:** Tabriz Oil Refinery (48.59%), Social Welfare Org. (11.57%), Justice Shares Broker Co. (10%), Omid Shares Management & Investment Co. (17.89%), Other shareholders (11.96%)
- **Capital:** IRR 4,982,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Ethylene	136	Naphtha, LPG, ethane	TPL (Italy) KTI (Netherlands)	1997
Propylene	56	〃		
C4Cut	34	〃		
Butene-1	7	Ethylene	IFP (France)	〃
LLDPE/HDPE	100	〃	BP (England)	〃
Benzene	55	PGH	IFP (France), Krupp Koppers (Germany)	〃
Ethyl benzene	100	Ethyl benzene	UOP, Lumms Monsanto	1999
Styrene	95	Ethyl benzene	UOP, Lumms Monsanto	1999
Toluene	2	〃		〃
Expandable polystyrene	15	Styrene, pentane	Sunpor (Austria)	〃
General-purpose polystyrene	25	Styrene, mineral oil	Elfatochem (France)	〃
High-impact polystyrene	40	Styrene, mineral oil, PBR	〃	〃
High - Impact polystyrene2	54	Styrene mineral oil, PBR	SULZER	2010
Butadiene	16.5	C4Cut	BASF (Germany)	2003
Raffinate C4	15	〃	〃	〃
ABS	35	Styrene, BD, AMS, ACN	Samsung (South Korea), Chell	〃
Fuel Oil	11.4	Naphtha	TPL (Italy) KTI (Netherlands)	1997
C7-C9 Cut	15	PGH, C6 Cut	IFP (France) Krupp Koppers (Germany)	〃

Products application

LDPE/HDPE: liquid containers, bags, plastic films, toys, home appliances

Expandable polystyrene: ice containers, insulation, packing

General-purpose polystyrene: pens, tooth brush, light bulb industry, refrigerators, automobiles, disposable containers

High-impact polystyrene: TV, radio and cassette player cases, refrigerator, washing machine and auto parts, home appliances, disposable containers

ABS: monitor and typing machine cases, electronic parts, refrigerators, telephone handset, auto parts

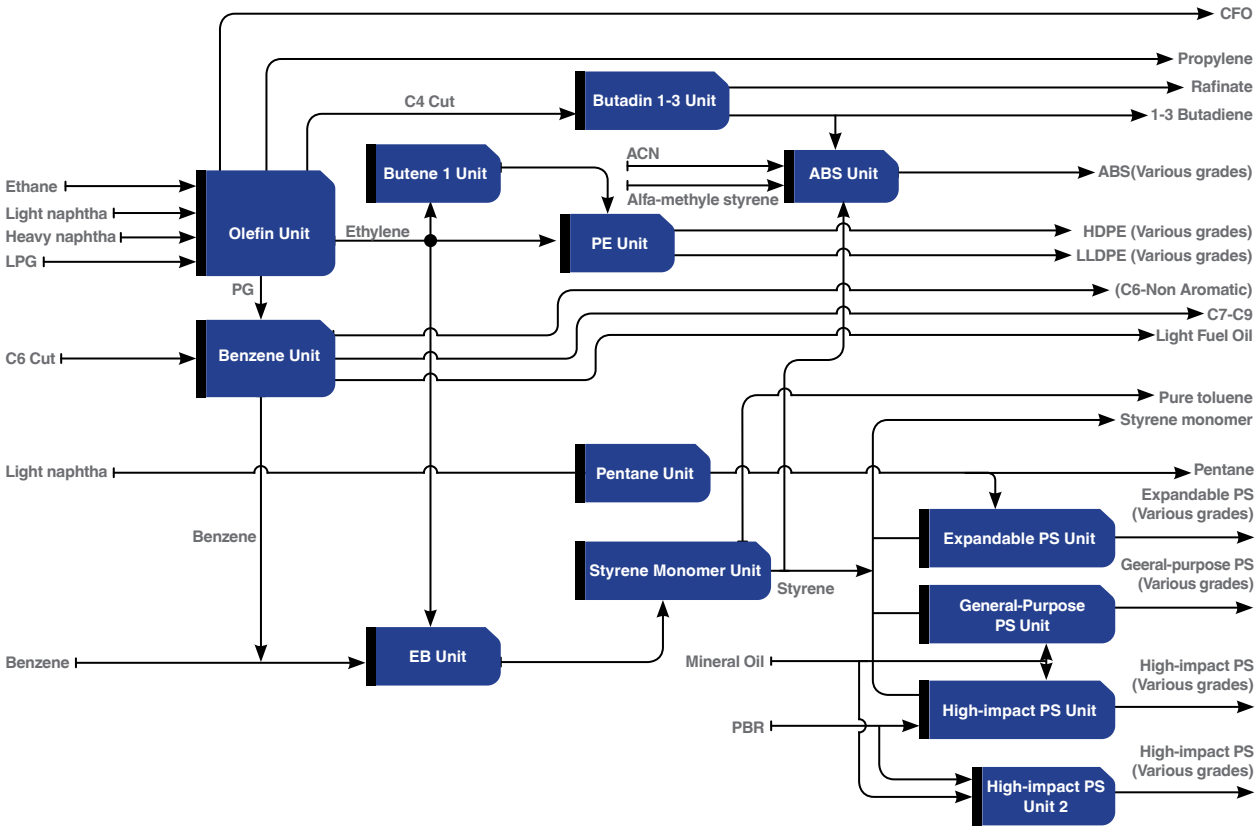
Propylene: feed for polymer plants

1-3 Butadiene: production of PBR, ABS

Toluene: various chemical solvents

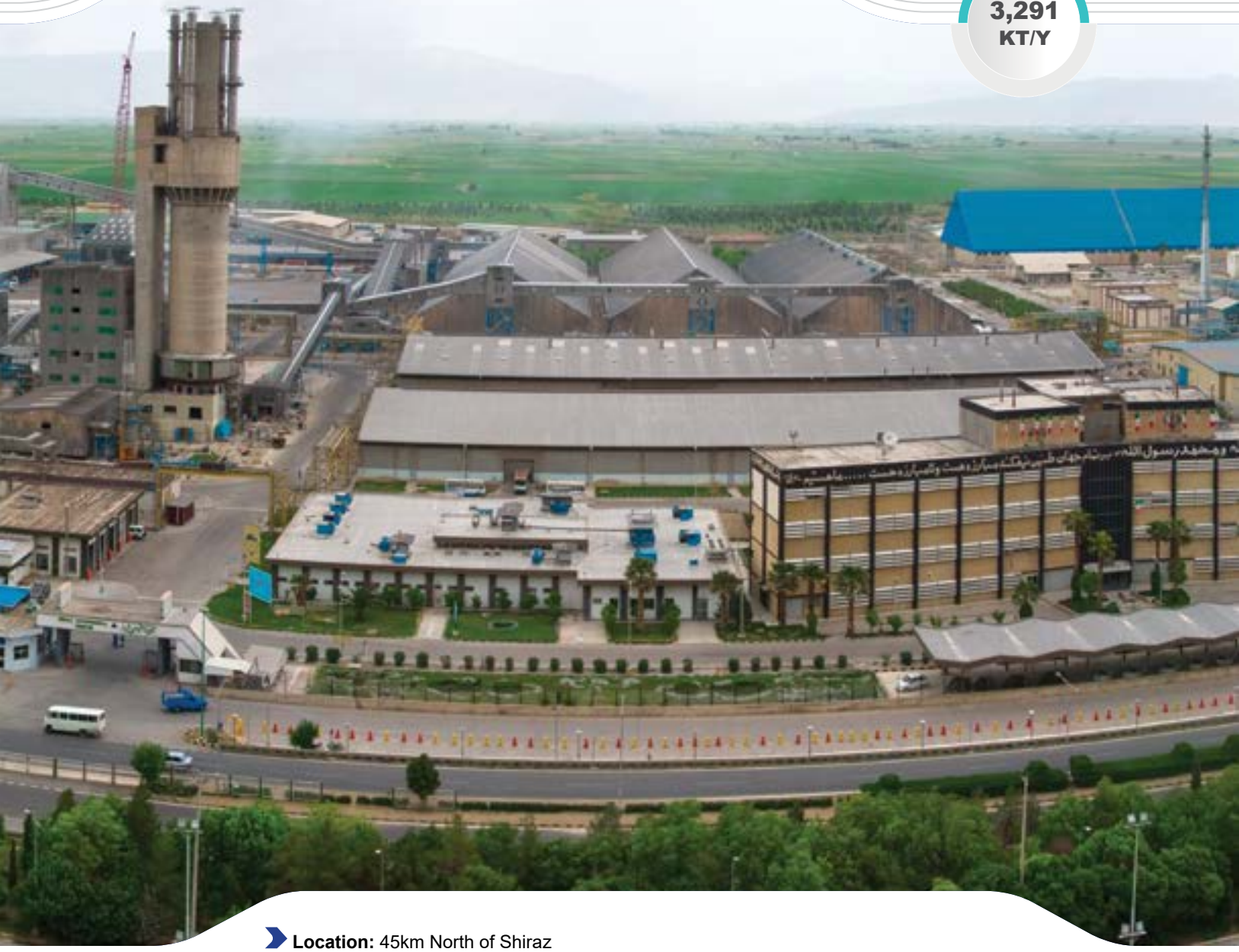
Input feed	Amount (KT/Y)	Source
LSRG(Light Naphta)	245	Tabriz & Tehran Refineries
HSRG (Heavy Naphta)	42.5	〃
LPG	54	BIPC / Tabriz Refinery
Ethane	8	Tabriz Refinery
ACN	8.3	Import
Mineral oil	4.7	〃
PBR	8.7	Import, Shazand Petrochemical Co.
AMS(Alpha methyl styrene)	1.1	Import
C6 cuts pyrolysis gasoline	37.5	Shazand Petrochemical Co.
Benzene	24	BIPC/Buali Sina Petrochemical Co.
Styrene monomer	48	Pars Petchemical Co.

Production Process Diagram



Shiraz Petrochemical Co.

Nominal Capacity
3,291
KT/Y



- **Location:** 45km North of Shiraz
- **Area:** 300 hectares
- **Founded in:** 1959
- **Ownership:** Parsian Oil & Gas Development Co. (51.7%), Modabberan-e-Eghtesad Commercial Co. (32%), Other shareholders (16.3%)
- **Capital:** IRR 5,100,000,000,000

Shiraz Petrochemical Co.

Shiraz Petrochemical Co. is Iran's first petrochemical complex which was brought onstream in 1963. It is located near Kor river. The complex lies in an area of 300 hectares of which 72 hectares are allocated to industrial sites. At the outset, the complex consists of 4 production plants including ammonia, urea, nitric acid and ammonium nitrate plus utility unit. Later, the complex underwent several expansion projects which included soda ash which was commissioned in 1973 and the complex's largest expansion project was launched in 1985.

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Ammonia (unit-2)	396	NG, air	ICI (England)	1985
Urea (unit-2)	495	Ammonia, Co2	Stami Carbon(Netherlands)	2015
Ammonia (3)	676.5	Natural gas	Ammonia Casale/Toyo	2015
Urea (3)	1,072.5	〃	〃	〃
Nitric acid	341.2	Ammonia, air	Grand Paroise (France)	〃
Ammonium nitrate	221.1	Ammonia, nitric acid	Kalten Bach (France)	1965
* Light soda ash	80	Lime, salt	Industrial Export/Import (Romania)	1973
* Dense soda ash	66	Soda ash		
* Sodium bicarbonate	20	〃		
Argon	5	Purge gas	Air liquid (France)	1994
* Chlorine	20	Salt	Denora (Italy)	1988
* Caustic	22.4			
* HCL	20			
* Sodium hypochloride	13.2			
* Perchlorine	5	CL2, NAOH, lime	Denora (Italy)	1993
Methanol	84	NG	Lurgi (Germany)	1990

* Chloralkali, perchlorine and soda ash plants have been put out of service since 2009

Products application

Soda ash: production of glass and crystal, food and pharmaceuticals, paper industry, leather industry

Ammonia: feed for production of various chemicals and fertilizers

Urea: production of fertilizers, resins, formaldehydes & melamines

Nitric acid: explosives and dairy products

Ammonium nitrate: fertilizer to improve soil; also used in medical, mineral and military industries

Argon: welding , steel industry and electric light bulbs

Chloralkali: food ,sanitatian, paper, aluminum, plastic industries as well as treatment of potable water, production of disinfectants

Methanol: production of acetic acid, MTBE, formaldehydes and organic solvents melamine

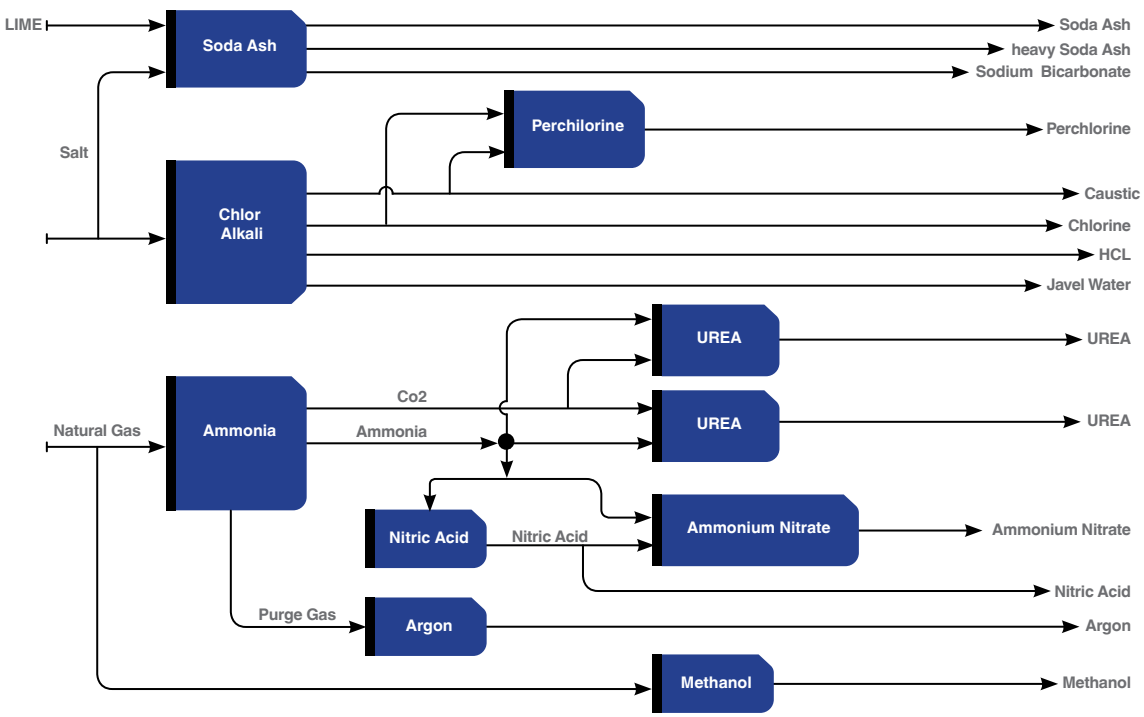
Perchlorine: production of disinfectants and antiseptics

Input feed	Amount (K/TY)	Source
Salt	220	Maharlo Lake
Lime	120	Nearby limestone mine

Input feed	Amount (K/TY)	Source
* NG	1,719	NIGC
Water	15.5	Fars Water Org

* Includes Feedstock & fuel

Production Process Diagram



ISO Certifications

ISO 9001 · ISO 14001 · HSE MS · OHSAS 18001 · ISO 29001 · ISO 50001 · EFQM

Khorasan Petrochemical Co.

Nominal Capacity
845
KT/Y

- **Location:** 17th km, Bojnurd-Mashhad Road,
- **Area:** 204 hectares
- **Founded in:** 1992
- **Ownership:** Tamin oil, Gas & Petrochemical Investment Co. (41.7%), Parsian Oil & Gas Expansion (13.2%), Petro Farhang (19%), Atieh Saba (12.4%), Other shareholders (13.2%)
- **Capital:** IRR 1,789,912,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Ammonia	330	NG	MW Kellogg	1996
Prilled urea	495	Ammonia, Co2	Stami Carbon	〃
Melamine	20	Ammonia & Urea solution	Eurotechnica	2003

Products application

Ammonia: production of fertilizers, refrigerant fluid in refrigeration systems

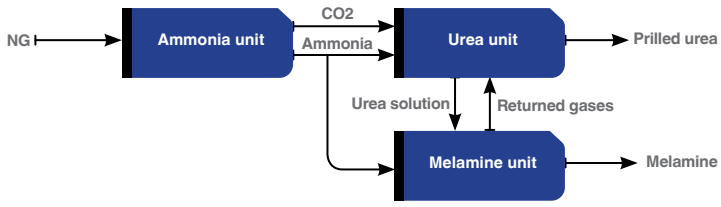
Urea: production of fertilizers, urea-formaldehyde resins and melamine

Melamine: production of resins

Input feed	Amount (KT/Y)	Source
* NG	483	Khangiran-Sarakhs Refinery

* Includes feedstock & fuel.

Production Process Diagram



ISO Certifications

ISO 9001 · ISO 14001 · OHSAS 18001 · ISO Green · ISO 50001

Kermanshah Petrochemical Industry Co.

- **Location:** Harsin Road, Kermanshah
- **Area:** 295.5 hectares
- **Founded in:** 1986
- **Ownership:** Parsian Oil & Gas Development Co. (46.2%), Iranian Petrochemical Investment Group (20.6%), Other shareholders (33.2%)
- **Capital:** IRR 3,529,200,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
Ammonia	396	Natural gas	M.W. Kellogg	2007
Granular urea	660	Ammonia + CO2	Stamicarbon	

Products application

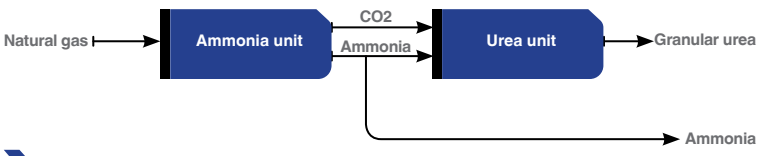
Ammonia: production of fertilizers and material fluid

Urea: production of fertilizers, resins, formaldehyde urea & melamines

Input feed	Amount (Mm^3/y)	Source
* Natural gas	560	NIGC

* Includes feedstock & fuel.

Production Process Diagram



ISO Certifications

certificate ISO 9001 | certificate ISO 14001 | certificate ISO 29001 | certificate OHSAS 18001 | certificate ISO 17025 | certificate HSE MS | certificate ISO/TS 29001 | certificate EFQM

Bisotoun Petrochemical Co.

Nominal Capacity
57 KT/Y

- **Location:** 8th km Kermanshah-Bisotoun Road
- **Area:** 63 hectares
- **Founded in:** 1999
- **Ownership:** Kermanshah Oil Refining Co. (68%), Justice Shares Broker Co. (30%), Other Shareholders (2%)
- **Capital:** IRR 500,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
LAB	50	Benzene & Kerosene	IFP (Axens)	1996
HAB	6.5	〃	〃	〃

Products application

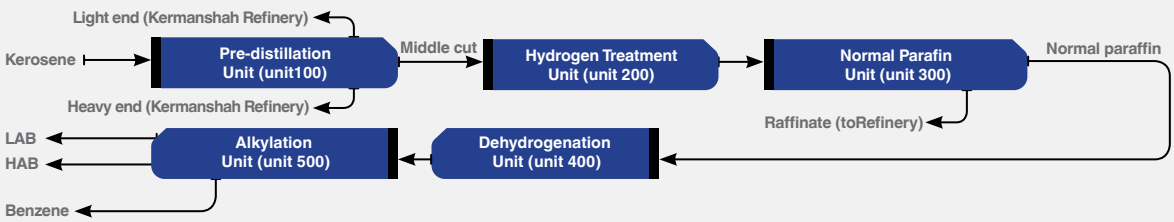
LAB: raw material for detergents

HAB: production of industrial oils

Input feed	Amount (KT/Y)	Source
Kerosene	386	Kermanshah, Abadan Refineries
Benzene	19	Buali Sina, BIPC
* Natural gas	94.7 Mmm^3/y	NIGC

* Includes feedstock & fuel

Production Process Diagram



ISO Certifications

certificate ISO 9001

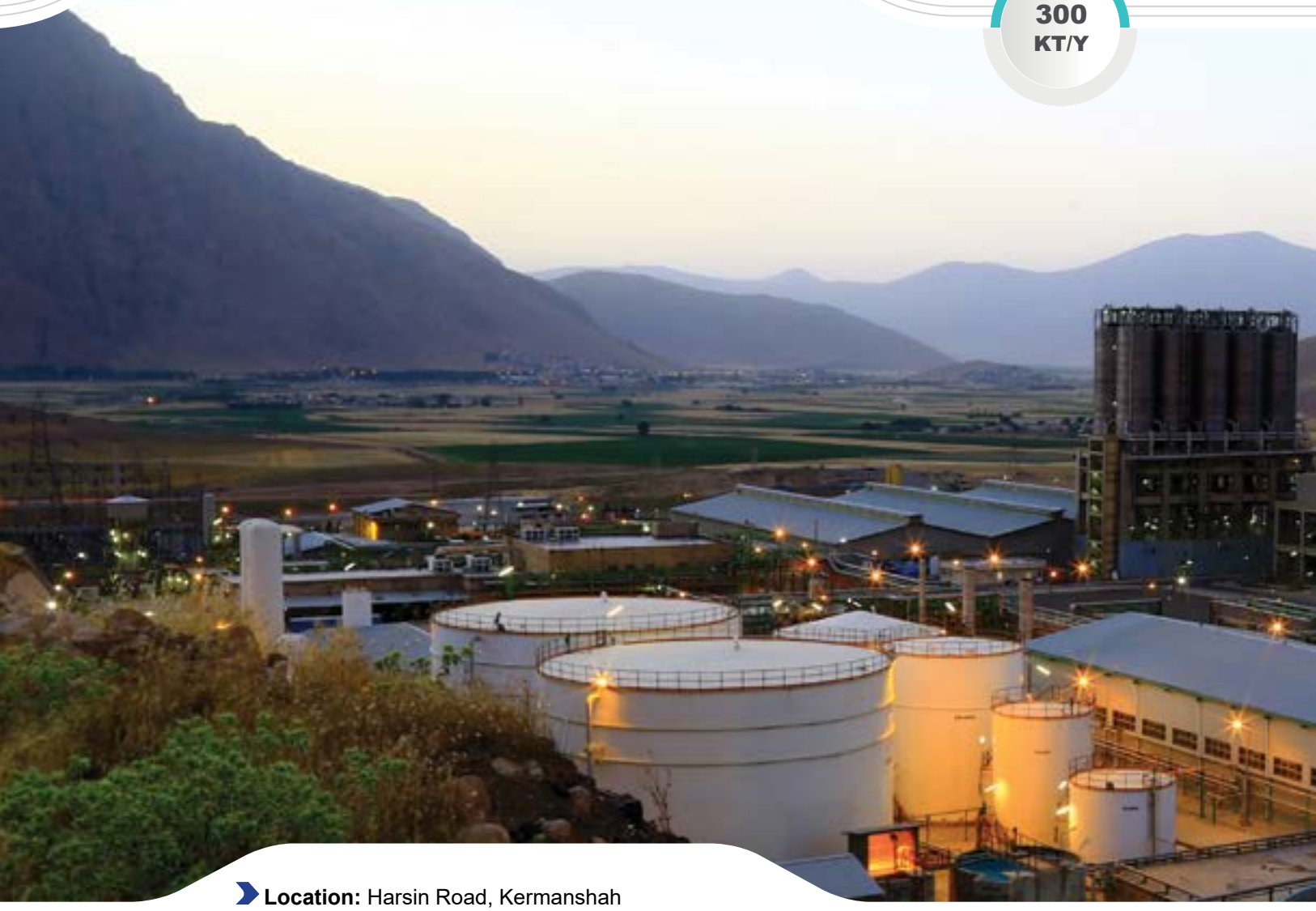
certificate ISO 14001

certificate OHSAS 18001

certificate EFQM

Kermanshah Polymer Co.

Nominal Capacity
300
KT/Y



- **Location:** Harsin Road, Kermanshah
- **Area:** 55 hectares
- **Founded in:** 1995
- **Ownership:** Bakhtar Petrochemical Co. (100%)
- **Capital:** IRR 1,400,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
HDPE	300	Ethylen	Basell	2012

Products application

Production of plastics, pipes, cable coating, film ...

Input Feed	Amount (KT/Y)	Source
Ethylene	305	West Ethylene Pipeline
Butene-1	3	local sources

Production Process Diagram

Orumiyeh Petrocheamical Co

Nominal Capacity
94
KT/Y

- **Location:** 30 km of Orumiyeh - Mahabad Road, Orumiyeh
- **Area:** 110 hectares
- **Founded in:** 1991
- **Ownership:** Iranian Petrochemical Investment Co. (83.4%), Petrochemical Commercial Co. (10.3%), Justice Shares Broker Co.(6.3%)
- **Capital:** IRR 309,165,876,000

Production Capacity (KT/Y)

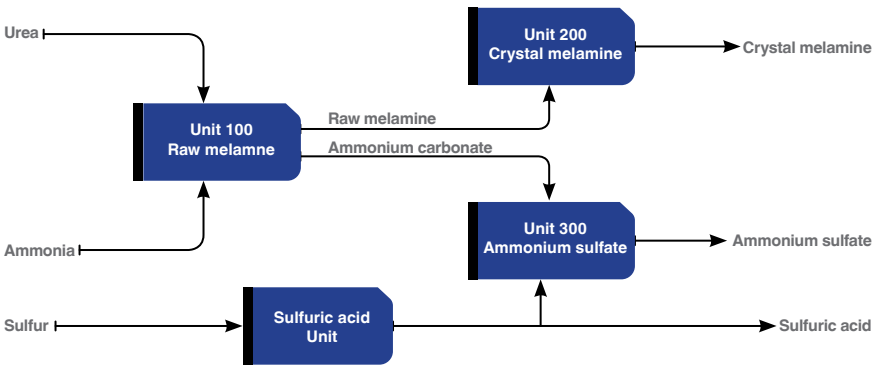
Product	Nominal Capacity	Feed	Licensor	Start up date
Crystal melamine	4	Ammonia, urea	CNCCC	1996
Ammonium sulfate	40	Sulfuric acid, Ammonium carbonate	〃	〃
Sulfuric acid	50	Sulfur	KSJ	2013

Products application

Production of plastics such as: pipes, cable coating, film, ...

Input feed	Amount (KT/Y)	Source
Urea	15.2	Urea units
Ammonia	9	Ammonia units
Sulfur	16.6	Kabudan Phosphate Co.

Production Process Diagram



ISO Certifications

certificate ISO 29001 certificate ISO 14001 certificate OHSAS 18001 certificate ISO 9001

Ilam Petrochemical Co.

Nominal Capacity
300
KT/Y

- **Location:** Ilam
- **Area:** 122 hectares
- **Founded in:** 2004
- **Ownership:** Iranian Petrochemical Investment Group (51.3%), Tamin Oil & Gas & Petrochemical Investment (17%), National Pension Investment Co. (17%), Other shareholders (14.7%)
- **Capital:** IRR 15,989,411,612,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
HDPE	300	Ethylene	Mitsui(MCI)	2013

Products application

Plastic production such as pipe, cable coating, film...

Input feed	Amount (KT/Y)	Source
Ethylene	308	West Ethylene Pipeline (Before Ilam olefine unit was on stream)
Butene-1	3.7	Local sources
Propylene	3.9	Local sources

Production Process Diagram

Poly Nar Co.

- **Location:** Tabriz
- **Area:** 19.5 hectares
- **Founded in:** 1992
- **Ownership:** Pars Polymer Ram Trading Co. (42%), Other shareholders (58%)
- **Capital:** IRR 140,000,000,000

Production Capacity (KT/Y)

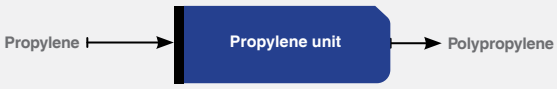
Product	Nominal Capacity	Feed	Licensor	Start up date
Polypropylene	80	Propylene	Himont	2000

Products application

Production of carpet fibers, auto & home appliances, carpet, packing films...

Input Feed	Amount (KT/Y)	Source
Propylene	85	Shazand & Tabriz Petrochemical Co.

Production Process Diagram



ISO Certifications

certificate ISO 14001

certificate ISO 9001

certificate BS OHSAS 18001

Abadan Petrochemical Co.

Nominal Capacity
162 KT/Y

- **Location:** Motahari District, Abadan
- **Area:** 50 hectares
- **Founded in:** 1966
- **Ownership:** Tamin Oil & Gas & Petrochemical Investment (58.5%), National Pension Investment Co. (12.7%), Other shareholders (28.8%)
- **Capital:** IRR 630,000,000,000

Production Capacity (KT/Y)

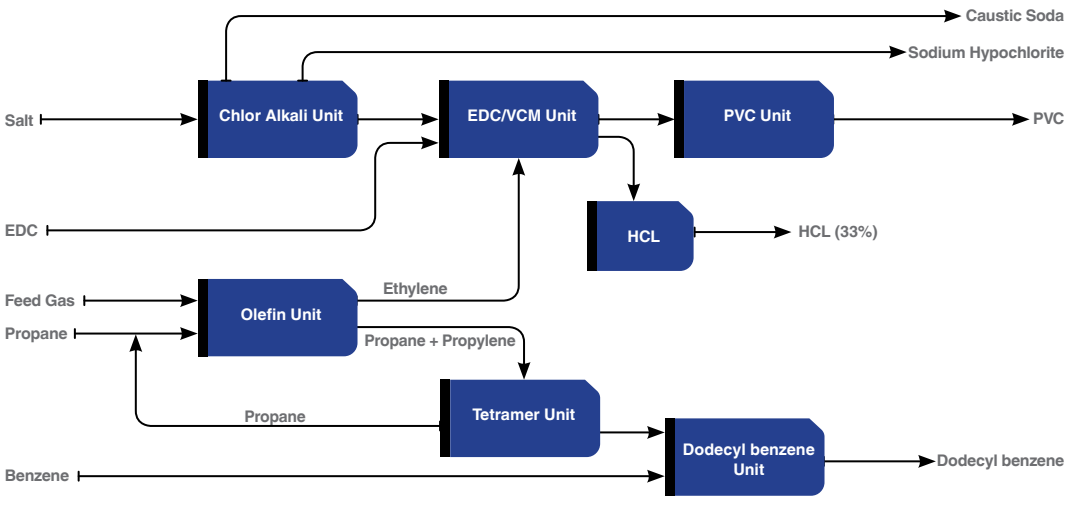
Product	Nominal Capacity	Feed	Licensor	Start up date
PVC	110	Ethane,propane, butane	BF Goodrich	1969
DDB	10	〃	Chevron Research	〃
Caustic soda	29.7	Salt	Denora	1993
HCL	12	Salt	Denora	1993

Products application

Downstream plastic industries, detergents, hygienic industries, chemicals, refineries

Input feed	Amount (KT/Y)	Source
Feed Gas	82.2	Abadan Refinery
Propane	13.2	Petrochemical complexes
Benzene	4.5	〃
EDC	27.4	Local Sources

Production Process Diagram



ISO Certifications

certificate ISO 14001 certificate ISO 9001 certificate EFQM

Ghaed Basir Petrochemical Co.

Nominal Capacity
36
KT/Y

- **Location:** 10 km Golpayegan - Khomein road, Esfahan
- **Area:** 30 hectares
- **Founded in:** 1997
- **Ownership:** Tadbir Energy Development Group (67.4%),15 Khordad Institute (20%), Other shareholders (12.6%)
- **Capital:** IRR 330,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
ABS	36	Styrene monomer Butadiene acrylonitrile	Kumho (South Korea)	2003

Products application

Auto parts, appliances, electronic devices, ...

Input Feed	Amount (KT/Y)	Source
Styrene monomer	22	Pars Petrochemical Co.
Acrylonitrile	7.2	Imported from (Taiwan-Turkey)
Butadiene	5.8	Tabriz & Amir kabir Petrochemical Cos.

Production Process Diagram

ISO Certifications

certificate ISO/TS 29001 · certificate ISO 14001 · certificate OHSAS 18001 · certificate ISO 9001 · certificate ISO 10015

Nominal Capacity

330
KT/Y

Lorestan Petrochemical Co.

- **Location:** 12th km of Khoramabad - Koohdasht Road
- **Area:** 130 hectares
- **Founded in:** 2008
- **Ownership:** Bakhtar Petrochemical Co. (100%)
- **Capital:** IRR 1,600,000,000,000

Production Capacity (KT/Y)

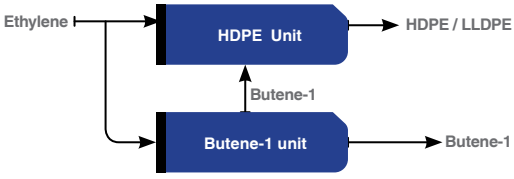
Product	Nominal Capacity	Feed	Licensor	Start up date
LLDPE / HDPE	300	Ethylene	Basell	2015
Butene-1	30	Ethylene	Axens	2015

Products application

Feedstock for downstream industries in producion of various pipes, plastic parts, cables,...

Input feed	Amount (KT/Y)	Source
Ethylene	324	West Ethylene Pipeline

Production Process Diagram



Kordestan Petrochemical Co.

- **Location:** Sanandaj
- **Area:** 130 hectares
- **Founded in:** 2008
- **Ownership:** Bakhtar Petrochemical Co.(100%)
- **Capital:** IRR 4,650,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	Licensor	Start up date
LDPE	300	Ethylene	Lyondell basell	2017

Products application

Various nylon films, plastic bags & packaging industries

Input feed	Amount (KT/Y)	Source
Ethylene	310	West Ethylene Pipeline Co.
Propylene	1.5	Tabriz or Ilam Petrochemical Co.

Production Process Diagram

Mahabad Petrochemical Co.

- **Location:** Mahabad
- **Area:** 185 hectares
- **Founded in:** 2015
- **Ownership:** Bakhtar Petrochemical Co. (100%)
- **Capital:** IRR 2,270,000,000,000

Production Capacity (KT/Y)

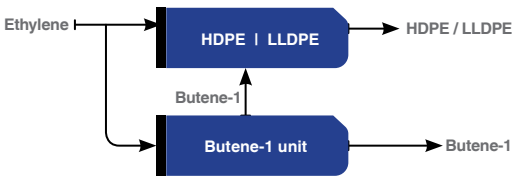
Product	Nominal Capacity	Feed	Licensor	Start up date
LLDPE / HDPE	300	Ethylene	Basell	2015
Butene-1	30	Ethylene	Axens	2015

Products application

Production of various films, containers, plastic parts, pipes, cables,...

Input feed	Amount (KT/Y)	Source
Ethylene	324	West Ethylene Pipeline

Production Process Diagram



Nominal Capacity
2,480
KT/Y

Kaveh Methanol Co.

- **Location:** Bushehr Province, Dayer
- **Area:** 200 hectares
- **Founded in:** 2004
- **Ownership:** Kaveh Glass industry group (100%)
- **Capital:** IRR 1,300,000,000,000

Production Capacity (KT/Y)

Product	Nominal Capacity	Feed	License	Start up date
Methanol	2,310	Natural gas & Oxygen	Casale	2018
Oxygen (liquid)	64	Air	Hangyang	2018
Nitrogen (liquid)	66	Air	Hangyang	2018
Argon (liquid)	40	Air	Hangyang	2016

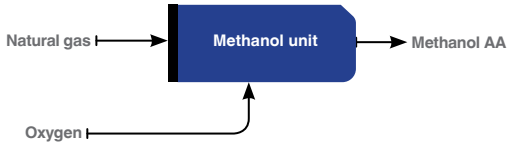
Products application

Production of MTBE, acetic acid, formaldehyde and as solvent in chemical industries

Input Feed	Amount (Mm3/y)	Source
* Natural gas	2,675	IGAT 6

* Include feedstock & fuel

Production Process Diagram



ISO Certifications

certificate ISO 9001

certificate ISO/TS 29001

Petrochemical

Terminals and Tanks

PETROCHEMICAL
COMPLEXES

Petrochemical Terminals & Tanks Co.

- **Location:** Petrochemical Special Economic Zone (Mahshahr) & Pars Special Economic/ Energy Zone(Assaluyeh)
- **Founded:** 1998
- **Ownership:** Persian Gulf Petrochemical Co. (16%), Petrochemical Transportation Co. (16%), Tamin Oil & Gas & Petrochemical Investment (16%), Amir Stocks Management & Investment Co. (15.7%), Parsian Oil & Gas Development Co. (15.7%), Civil Pension Investment Co. (15.7%)

Petrochemical Terminals & Tanks Co.

It is in charge of operating NPC's two massive and specialized ports in Mahshahr (Bandar Imam) and Assaluyeh as well as the petrochemical tank farm located in Bandar Imam. This company handles the export of petrochemical products, import of raw materials and the storage of these products and raw materials.

Pars Petrochemical Port

Total jetties: 15 jetties consisting 6 for liquid products, 7 for solid products and 2 for LPG
Commissioning date: the first phase was brought onstream in 2005; the port became operational in its entirely in 2009.
Total capacity: 35 million tons (29 million tons of liquids & LPG and 6 million tons of solid products)
Breakwater length: 15 to 32 meters
Berthing capacity: 70,000 tons
Total loading/ unloading capacity: 170- 2,250 tons per hour
Anchorage traffic: 800- 1200 vessels per annum
Major exports: butane, propane, methanol, ammonia, ethylene, benzene, light ends, heavy ends, styrene, orthoxylene, paraxylene, polyethylene, urea, polypropylene, ...

Mahshahr Petrochemical Port

Total no. of jetties: 7 jetties consisting 5 for liquid products & LPG and 1 for solid products - another jetty for liquid products is under pre-commissioning.
Commissioning date: 1969 (3 jetties), 1990 (2 jetties) and one in 2004
Total capacity: 15 million tons
Breakwater length: 11- 13 meters
Berthing capacity: 50,000 tons
Loading/ Unloading capacity: 150- 1600 tons/ hour
Anchorage Traffic: About 1000 vessels per annum
Major exports / imports: propane, butane, heavy ends, methanol, ethylene, ammonia, C5+, benzene, paraxylene, light cuts, naphtha, pyrolysis gasoline, sulfuric acid, sulfur, orthoxylene, phenol, aceton, phosphate rock, phosphoric acid, caustic soda, MC, VCM, EDC,..

Mahshahr Tank Yard (Bandar Imam)

No. of storage tanks: 19
Total storage capacity: 157,200 m3
Commissioning date: 2004
Storage capacity: 2,000m3- 20,000 m3
Tanks material: carbon steel and stainless steel
Mounted equipment: some tanks have cooling/ heating systems
Major exports / imports: heavy cuts, naphtha, acetic acid, raffinate, phenol, acetone, VAM, DEG,...

NPC

PETROCHEMICAL PROJECTS

May 2019

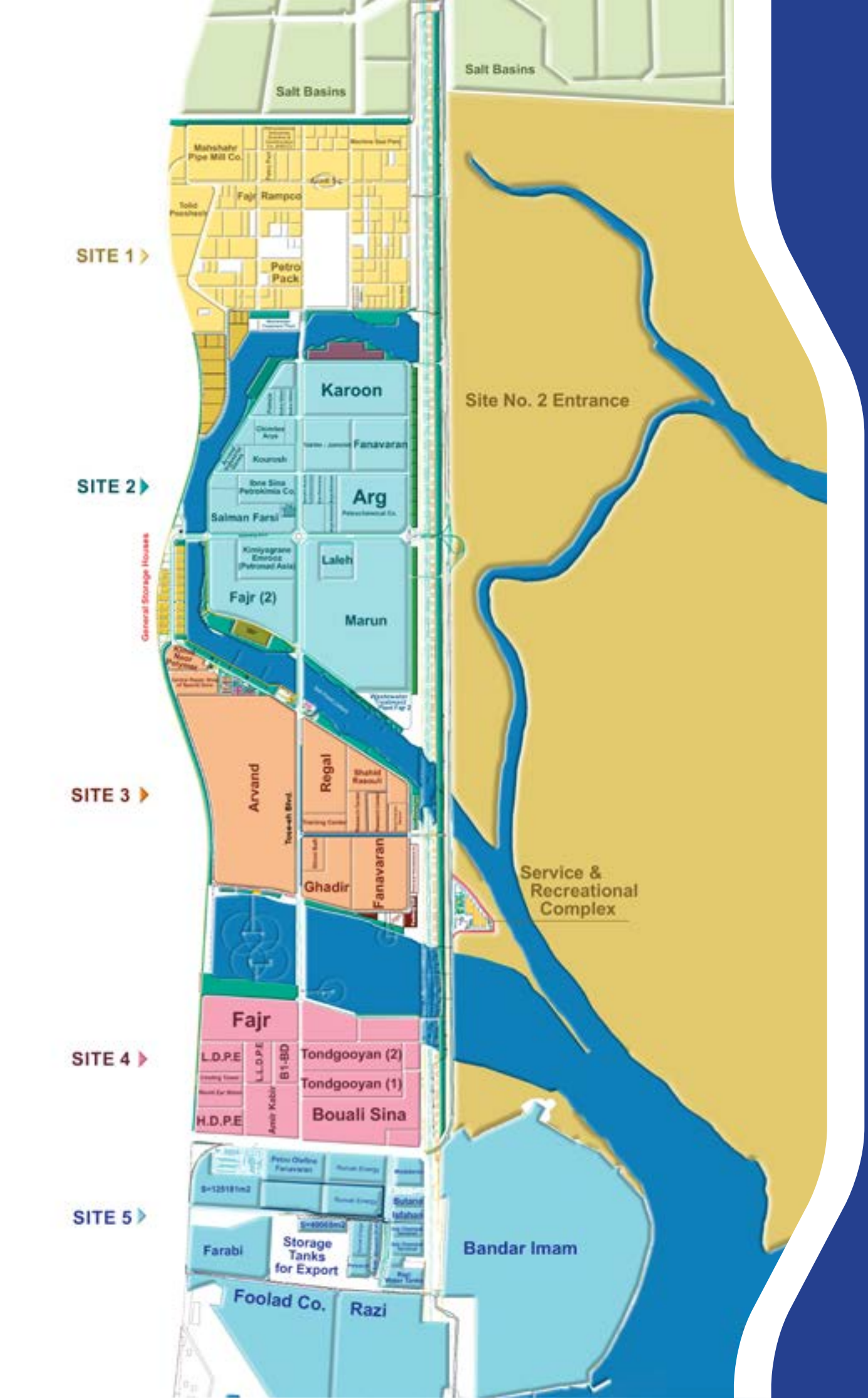
Preface

The petrochemical industry is known as value-creation industry in the country. In other words, petrochemical industry is a pioneer industry in creating value added in Oil & Gas industry which requires the government's special attention and support as well as further participation of private sector. To this end, the state-governed vision in petrochemical industry changed and now private sector is having top-notch participation in petrochemical projects. Accessing to international waterways and abundance varieties of feedstock in the country makes the industry to face minor risk for investment. By considering these advantages, the investors are very keen on participating in implementation of petrochemical projects. At present, 62 petrochemical projects at different stages are underway, anticipated reach 120 million tons of petrochemical production by completion of these projects. Furthermore, studies are in progress to establish new Petrochemical Special Economic Zones promising a sustainable development in petrochemical industry.

PETROCHEMICAL
PROJECTS

Petrochemical Special Economic Zone

Mahshahr


Salt Basins
Salt Basins
Mahshahr Pipe Mill Co.
Fajr Rampco
Petro Pack
SITE 1
Karoon
Site No. 2 Entrance
Fanavaran
Kourosh
Arg
Salman Farsi
SITE 2
Laleh
Fajr (2)
Marun
General Storage Houses
Arvand
Regal
Ghadir
Fanavaran
SITE 3
Service & Recreational Complex
Fajr
L.D.P.E
B1-BD
Tondgooyan (2)
Tondgooyan (1)
H.D.P.E
Bouali Sina
SITE 4
Farabi
Storage Tanks for Export
Bandar Imam
Foolad Co.
Razi
SITE 5

PETROCHEMICAL SPECIAL ECONOMIC ZONE (MAHSHAHR)

Lying on the coast of the Persian Gulf, the Petrochemical Special Economic Zone (PSEZ), originally spread out on an area of 1,700 hectares in southwestern city of Mahshahr, Bandar Imam Khomeini district. The zone expanded over an area of 2300 hectares in March 2007 based on authorization No. K 36042 T/167936 by Iran's High Council of Free Industrial / Trade Zone. According to this addendum, Bandar Imam, Razi and Farabi petrochemical companies were located in Petrochemical Special Economic Zone (PSEZ). Mahshahr is already the hub of Iran's petrochemical industry. In terms of its natural & geographical position and also enjoying the legal facilities of special zones, the Petrochemical Special Economic Zone has been established in order to develop the industry and trade activities (specially downstream industries), meeting the economic, social and national interests, applying new technologies and increasing job creation. From the geographical point of view, the zone has access to the international waterways through Bandar Imam and through the national railway network is accessible to Turkey, European and Central Asian countries. The Petrochemical Special Economic Zone Organization was established in 1997 based on an authorization by Iran's High Council of Free Industrial/Trade Zone to manage and develop industrial and economical activities including petrochemical sector in the area. As a subsidiary of NPC, the Petrochemical Special Economic Zone Organization welcomes local and foreign investors to invest in this economically important area. The implementation work of phases 11 - 24 have been started and are underway.

Several world-scale petrochemical plants are being constructed in Assaluyeh zone as part of the country`s 3rd, 4th & 5th development plans.

NPC

PROJECTS OF PETROCHEMICAL INDUSTRY

Nominal Capacity

135
KT/Y

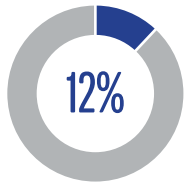
Start date
2011

operation date
2025

Acrylonitrile

- **Implemented by:** Arg Petrochemical Company (Private Joint stock)
- **Location:** Petrochemical Special Economic Zone
- **Area:** 25 hectares
- **Ownership:** Karsazan-e- Ayandeh Credit Institute (36.8%), Tabriz Petrochemical Co. (15.9%) Sarmayeh Gostar Nour Ati (35.2%), Other Shareholders (12.1%)

License: JDI
Engineering & Procurement: EPCI, Tazand Co.
Physical progress (as of 20 March 2019): 12%



Production Capacity (KT/Y)

Products	Nominal Capacity	Salable
Acrylonitrile	100	100
Acetonitrile	3	3
Ammonium sulfate	12	12
Sodium Cyanide	20	20
Total	**135**	**135**

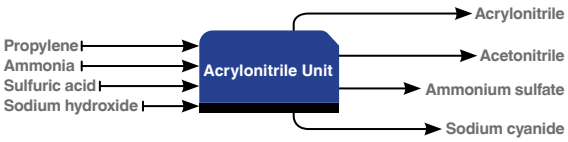
Applications

Production of acrylic fiber, ABS and SAN resins, nylon, ediponitrile, industrial fibers, elastomers and …

Feedstock (KT/Y)

Feedstock	Capacity	Source
Propylene	110	Salman-e-Farsi Petrochemical Co., Abadan Refinery
Ammonia	52	Razi Petrochemical Co.
Sulphuric acid	9.5	Razi Petrochemical Co.
Sodium hydroxide	18	Bandar-e-Imam/Qadir Petrochemical Co.

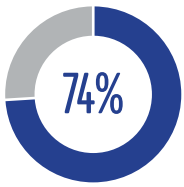
Production Process Diagram



Maleic Anhydride (MAH) Butandiol (BDO) and Polybutylene Terephthalate (PBT)

- **Implemented by:** Ibn-e- Sina PetroKimiya Company (Private Joint Stock)
- **Location:** Petrochemical Special Economic Zone
- **Area:** 10.38 hectares
- **Ownership:** Natural Person (34%), Shahid Tondgouyan Petrochemical Co.(15.3%)
  Other Shareholders (50.7%)
- **Projected operation date:** 2021 (phase 1)

License: Polioli (Italy)
Basic Engineering & Procurement: Technical Limited Co.
Engineering &Construction: Iran Nasb Mashin Co.
Physical progress (as of 20 March 2019): 74%



Production Capacity (KT/Y)

Products	Nominal Capacity	Salable
MAH	23	23
Isobutane	23	23
n-Butane	48	25
Total	94	71

Applications

Production of polyester resins, fumaric acid, auto and marine Industries, lubricant additives, electronic industry, filament fibers, elastic poly urethane fibers, copolyester - polyether elastomers

Feedstock (KT/Y)

Feedstock	Capacity	Source
Butane	71	Bandar Imam Petrochemical Co.

Production Process Diagram

Nominal Capacity
450
KT/Y

Start date
2010

operation date
2023

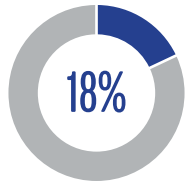
Propane Dehydrogenation (PDH)

- **Implemented by:** Salman-e-Farsi Petrochemical Co. (Private Joint Stock)
- **Location:** Petrochemical Special Economic Zone
- **Area:** 16.75 hectares
- **Ownership:** Marun Petrochemical Co. (34%), Navid Zar Shimi (26%), Rejal Petrochemical Co. (20%), Zarif Mosavar (10%), Marun Ofogh Sepehr (10%)

Production Capacity (KT/Y)

Product	Nominal Capacity	Salable
Propylene	450	450

License & Basic Engineering: UOP
Detailed Engineering & Procurement: PIDEC
Physical progress (as of 20 March 2019): 18%



Applications

Feedstock for polypropylene, phenol, acrylonitrile units & ...

Feedstock (KT/Y)

Feedstock	Capacity	Source
Propane	560	Bandar Imam Petrochemical Co.

Production Process Diagram

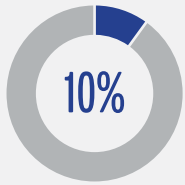
Kourosh PHD and Acrylates (phase 1)

- **Implemented by:** Kourosh Petrochemical Development Co.
- **Location:** Petrochemical Special Economic Zone
- **Area:** 10.5 hectares
- **Ownership:** Karafarin Bank (92.76%), Natural persons (7.24%)

Production Capacity (KT/Y)

Product	Nominal Capacity	Salable
Propylene	150	150

License & Basic Engineering: Yarsintez (Russia)
Detailed Engineering and Procurement: Shanghai Hoto Engineering Inc. (China)
Physical progress (as of 20 March 2019): 10%



Applications

Feedstock for polypropylene, phenol, acrylonitrile units & ...

Feedstock (KT/Y)

Feedstock	Capacity	Source
Propane	185	Bandar Imam Petrochemical Co.

Production Process Diagram

Nominal Capacity
53
KT/Y

Start date
2012

operation date
2021

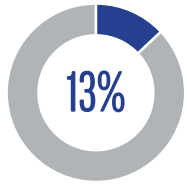
Maleic Anhydride (MAH)

- **Implemented by:** Modabberan Shimi Co.
- **Location:** Petrochemical Special Economic Zone
- **Area:** 4.5 hectares
- **Ownership:** Tadbir Energy Development Group, Natural Persons

Production Capacity (KT/Y)

Products	Nominal Capacity	Salable
MAH	20	13
Fumaric acid	4	4
Unsaturated polyester resins	15	15
ISO Butane	14	14
Total	**53**	**46**

License & Engineering: Shafagh Engineering Co. (yazd, Iran)
Engineering: EPCC, Saba Petroniroo
Physical progress (as of 20 March 2019): 13%



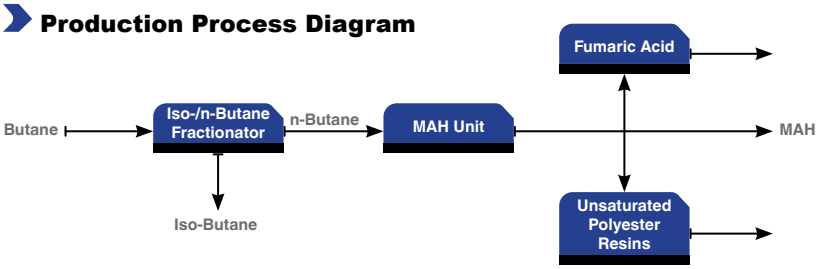
Applications

Production of polyester resins, alkyd resins, insecticide, oil preservative …

Feedstock (KT/Y)

Feedstock	Capacity	Source
Butane	40	Bandar Imam Petrochemical Co.

Production Process Diagram



PETROCHEMICAL
PROJECTS

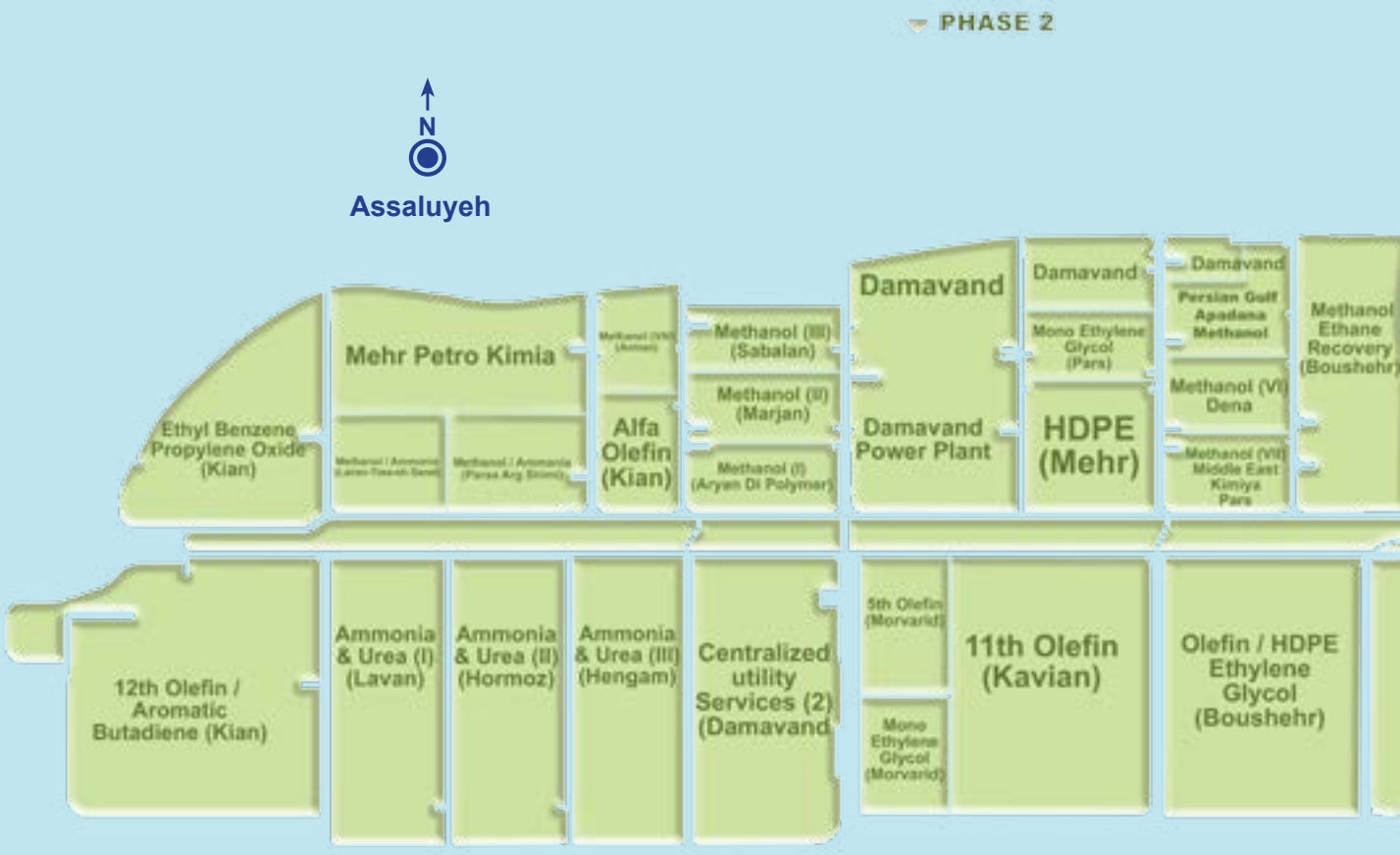
Pars Special Economic | Energy Zone

Assaluyeh

Pars Special Economic Energy Zone (Assaluyeh)

The Pars Special Economic / Energy Zone Organization consists of three regions; Pars 1 (South Pars) with an area of 14.000 hectares, Pars 2 (Pars Kangan) with an area of 16.000 hectares and Pars 3 (North Pars) with an area of 16.000 hectares. The Organization was established in 1999 to support the development of South Pars Gas Field, the world's largest gas field, through establishing, approving, planning, implementing, utilizing and maintaining the infrastructures such as roads, rail ways, ports, airports, power plants and drinking water facilities. The availibility of proper infrastructures in the up, middle and downstreams of oil and gas industry, Pars Complex Port, the International Persian Gulf Airport, water and power facilities, communication, roads and available natural tourist attractions have made the region an ideal place for local and foreign investors.

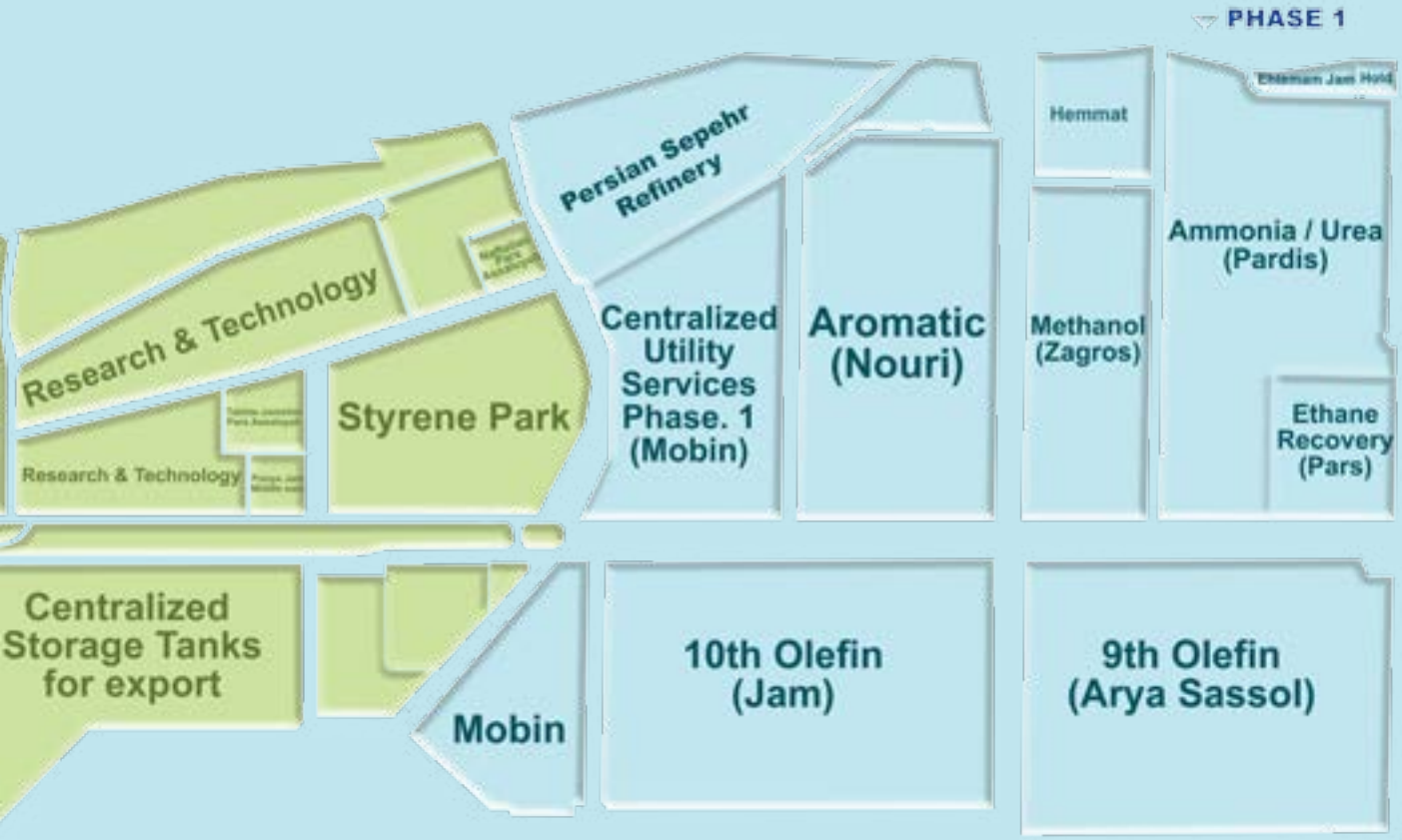
Lying on the coast of the Persian Gulf, the Zone has access to the rich hydrocarbon



resources in the region providing lucrative conditions for foreign investment. It is the hub of development activities underway at South Pars gas field. With its reserves estimated at 14 trillion cubic meters of gas and 18 billion barrels of condensates, the field is the world's largest gas field. It represents 6.8% of the global gas reserves. Given the field's capacity, 28 development phases and 3 giant LNG projects have so far been planned to be implemented in Assaluyeh and Kangan in an area of 30,000 hectares. Currently, the first ten phases are onstream. On average, $1.5bn has been invested for each phase.

The implementation work of phases 11 - 24 is already underway.

Several world-scale petrochemical plants are being constructed in Assaluyeh Zone as part of the country`s 3rd, 4th & 5th year development plans.



Persian Gulf Apadana Methanol

- **Implemented by:** Persian Gulf Apadana Petrochemical Industries Co. (private Joint stock)
- **Location:** Pars Special Economic/Energy Zone (Phase 2)
- **Area:** 9 hectares
- **Ownership:** Persian Gulf Petrochemical Co. (99.9%), Other Shareholders (0.1%)

Production Capacity (KT/Y)

Product	Nominal Capacity	Salable
Methanol	1,650	1,650

License & Basic Engineering: Casale
Engineering and Procurement: PIDEC
Construction and installation: Uniz Sazeh / Mashin Sazi Pars / Paybast
Physical progress (as of 20 March 2019): 43%

Applications

MTBE, Acetic acid and also as a solvent in downstream industries, resins, adhesives, formaldehyde, anti-freeze, plastics, DME, MTP and MTO

Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Natural gas	1,426	South Pars Oil & Gas Co.
Oxygen	670	Damavand Petrochemical Co.

* Feed & Fuel

Production Process Diagram

Nominal Capacity
1,650
KT/Y

Start date
2011

operation date
2021

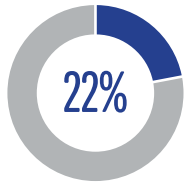
Arman Methanol

- **Implemented by:** Arman Methanol Co.
- **Location:** Pars Special Economic/ Energy Zone (Phase2)
- **Area:** 6.98 hectares
- **Ownership:** Natural Persons (100%)

Production Capacity (KT/Y)

Product	Nominal Capacity	Salable
Methanol	1,650	1,650

License & Basic Engineering: Haldor Topsoe
Engineering and Procurement: Namvaran
Physical progress (as of 20 March 2019): 22%



Applications

Production of MTBE, Acetic acid, resins, formaldehyde, anti-freeze, adhesives, diesel fuel, different plastics and as a solvent in downstream industries, MTP and MTO

Feedstock (msm^3/y)

Feedstock	Capacity	Source
Natural gas	1,570	NIGC

Production Process Diagram

Methanol / Ammonia 1

Nominal Capacity
1,290
KT/Y

Start date
2011

operation date
2022

- **Implemented by:** Arg Shimi Parsa Co.
- **Location:** Pars Special Economic/Energy Zone (Phase 2)
- **Area:** 8.65 hectares
- **Ownership:** Movalmovaheddin financial institution (50%), Atieh Faraz Qeshm (40%)
  Nemat Trading Development Co. (10%)

Production Capacity (KT/Y)

Products	Nominal Capacity	Salable
Methanol	990	990
Ammonia	300	300

License & Basic Engineering: Haldor Topsoe
Physical progress (as of 20 March 2019): 11.4%

Applications

MTBE, Acetic acid and also as a solvent in downstream industries, resins, adhesives, formaldehyde, anti-freeze, plastics, DME, MTP, MTO and fertilizers

Feedstock (msm^3/y)

Feedstock	Capacity	Source
Natural gas	1,080	South Pars Oli and Gas

Nominal Capacity
3,592
KT/Y

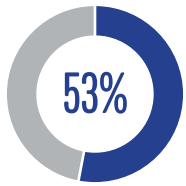
Start date
2012

operation date
2020

Phase1 and 2 Bushehr

- **Implemented by:** Bushehr Petrochemical Co. (Private Joint Stock)
- **Location:** South Pars (Phase 2) & Pars Special Economic/ Energy Zone (Phase2)
- **Area:** 7 + 59.4 hectares
- **Ownership:** Shasta (60%), Marun Petrochemical Co. (40%)

License: Casale (Methanol), Petrochemical Research & Technology (HDPE)
Engineering & Procurement: Nargan, Casale, PIDEC, EIED, Nardis
Construction installation contractors: Sokaf, Azar Simab, Kandovan Pars, Zamiran, Asfalt Toos & Kason
Physical progress of phase 1 (as of 20 March 2019): 53%



Production Capacity (KT/Y)

Products	Nominal Capacity	Salable
Ethylene	1,000	385
C3+ cuts	88	88
* Methanol	1,650	1,488
EG	554	554
LLDPE/HDPE	300	300
Total	**3,592**	**2,815**

* Phase 1 Production

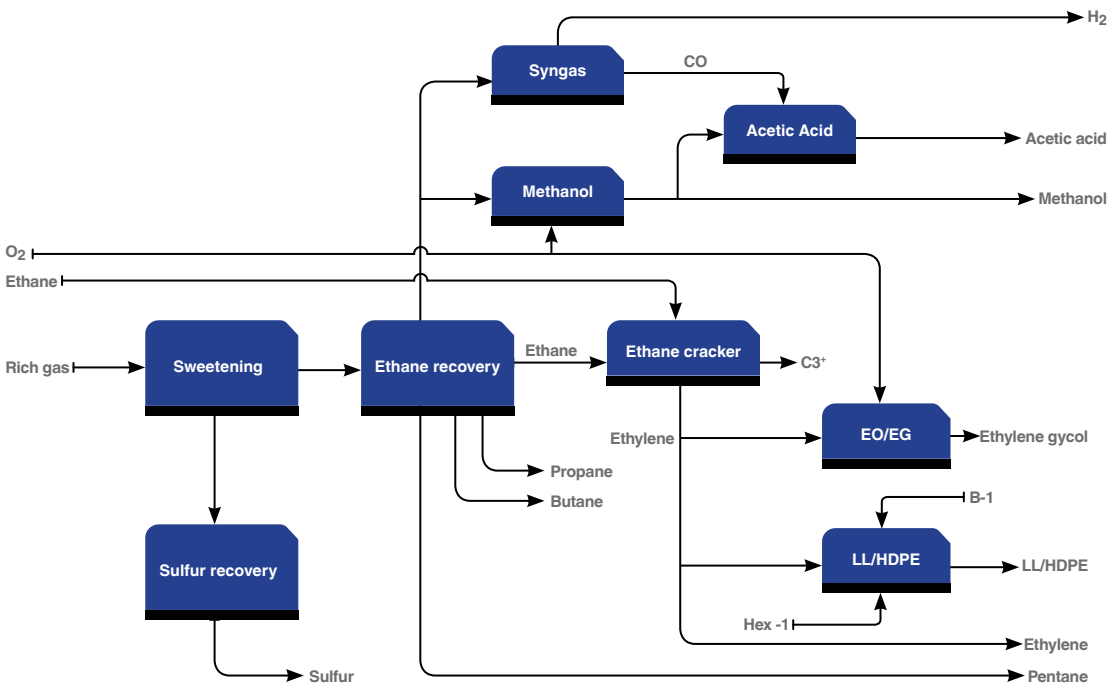
Applications

Feedstock for production of polyesters, VA, MTBE, acetic acid, resins, adhesives, cable & wire coverage, plastic parts, anti-freeze, various films

Feedstock

Feedstock	Capacity	Source
Oxygen	801 msm^3/y	Damavand Petrochemical Co.
Butene-1	11,000 t/y	Jam Petrochemical Co.
Hexane-1	2,000 t/y	Import
Ethane	400,000t/y	South Pars Gas Refinery

Production Process Diagram



Ethylene Glycols

- **Implemented by:** Pars Phenol Company (Private Joint Stock)
- **Location:** South Pars Special Economic / Energy Zone (Phase 2)
- **Area:** 6.99 hectares
- **Ownership:** Bakhtar Petrochemical Co. (84.5%), Natural persons (15.5%)

Production Capacity (KT/Y)

Products	Nominal capacity	Salable
MEG	500	500
DEG	50	50
TEG	4	4
Total	**554**	**554**

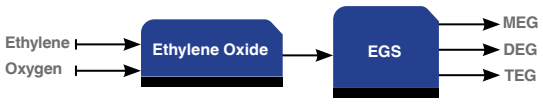
Applications

As a raw material in production of PET,anti-freeze, as softeners in textiles, as moisture - absorbent in refineries

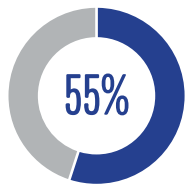
Feedstock

Feedstock	Capacity	Source
Ethylene	340 (KT/Y)	Bushehr Petrochemical Co.
Oxygen	266 (msm^3/y)	Damavand Petrochemical Co.

Production Process Diagram



Detailed Engineering & Procurement: PIDEC & ECEC (China)
Physical progress (as of 20 March 2019): 55%



Nominal Capacity
1,290
KT/Y

Start date
2013

operation date
2022

Methanol - Amonia 2

- **Implemented by:** Lavan Industry Development Co. (Private joint stock)
- **Location:** Pars Special Economic/Energy Zone (Phase 2)
- **Area:** 8.43 hectares
- **Ownership:** Saderfar Co. (50%), Natural persons (50%)

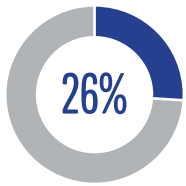
Production Capacity (KT/Y)

Products	Nominal capacity	Salable
Methanol	990	990
Ammonia	300	300
Total	**1,290**	**1,290**

Applications

MTBE, Acetic acid and also as a solvent in downstream industries, resins, adhesives, formaldehyde, anti-freeze, plastics, DME, MTP, MTO and fertilizers

Licence: Holder Topsoe
Engineering and Procurement, Construction and Installation (EPC): Nargan
Civil and Construction: Boniz Sazeh
Physical progress (as of 20 March 2019): 26%



Feedstock (KT/Y)

Feedstock	Capacity	Source
Natural gas	1,080	South Pars Oil and Gas

Dena Methanol

Nominal Capacity
1,650
KT/Y

Start date
2010

operation date
2021

- **Implemented by:** Dena Petrochemical Industries Co. (Private Joint stock)
- **Location:** Pars Special Economic/Energy Zone (Phase 2)
- **Area:** 7 hectares
- **Ownership:** Sepehr Energy (99.6%), Other Shareholders (0.4%)

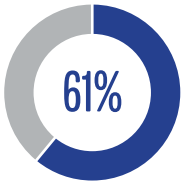
Production Capacity (KT/Y)

Product	Nominal capacity	Salable
Methanol	1,650	1,650

Applications

MTBE, Acetic acid and also as a solvent in downstream industries, resins, adhesives, formaldehyde, anti-freeze, plastics, DME, MTP and MTO

License & Basic Engineering: Haldor Topsoe
Engineering and Procurement: PIDEC
Physical progress (as of 20 March 2019): 61%



Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Natural gas	1,378	South Pars Oil & Gas Co.
Oxygen	550	Damavand Petrochemical Co.

* Feed & Fuel

Production Process Diagram

Nominal Capacity
1,650
KT/Y

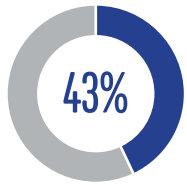
Start date
2014

operation date
2022

Arian Methanol DiPolymer

- **Implemented by:** DiPolymer Arian Co.
- **Location:** Pars Special Economic/Energy Zone (Phase 2)
- **Area:** 7 hectares
- **Ownership:** Bakhtar Petrochemical Co. (92%), Natural persons (8%)

License & Basic Engineering: Lurgi
Engineering and Procurement: PIDEC
Construction contractor: Tarakom
Physical progress (as of 20 March 2019): 43%



Production Capacity (KT/Y)

Product	Nominal capacity	Salable
Methanol	1,650	1,650

Applications

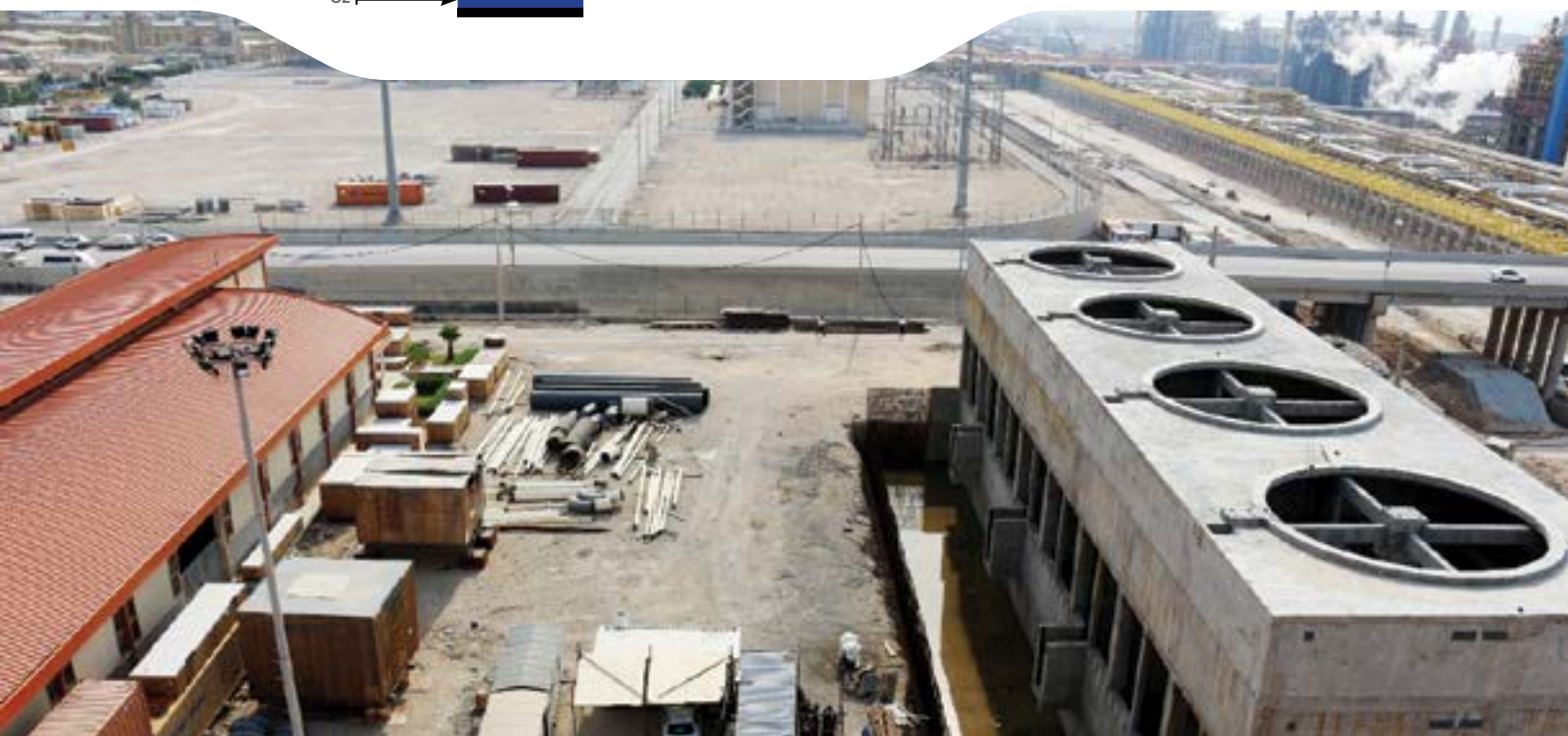
MTBE, Acetic acid and also as a solvent in downstream industries, resins, adhesives, formaldehyde, anti-freeze, plastics, DME, MTP and MTO

Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Natural gas	1,531	South Pars Oil & Gas Co.
Oxygen	671	Damavand Petrochemical Co.

* Feed & Fuel

Production Process Diagram



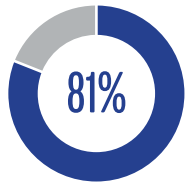
Sabalan Methanol

- **Implemented by:** Sabalan Petrochemical Co. (Private Joint Stock)
- **Location:** South Pars Special Economic / Energy Zone (Phase 2)
- **Area:** 7 hectares
- **Ownership:** Sepehr Energy Co. (99.6%), Other shareholders (0.4%)

Production Capacity (KT/Y)

Product	Nominal capacity	Salable
Methanol	1,650	1,650

License & Basic Engineering: Haldor Topsoe (Denmark)
Engineering & Procurement: PIDEC
Physical progress (as of 20 March 2019): 81%



Applications

Production of MTBE, acetic acid, resins, formaldehyde, anti-freeze, adhesives, diesel fuel, different plastics and as solvent in downstream industries, MTP and MTO

Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Natural gas	1,378	South Pars Oil & Gas Co.
Oxygen	572	Damavand Petrochemical Co.

* Feed & Fuel

Production Process Diagram

Nominal Capacity
1,755
KT/Y

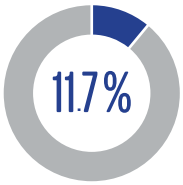
Start date
2014

operation date
2025

Ammonia / Urea 8

- **Implemented by:** Lavan Petrochemical Co.
- **Location:** South Pars Special Economic / Energy Zone (Phase 2)
- **Area:** 24.85 hectares
- **Ownership:** Petro Farhang (20%), Sepehr Energy Co. (54.92%), Shazand Petrochemical Co. (20%),National Development Group Inv. (5%), Dena Petrochemical Co. (0.04%), Sabalan Petrochemical Co. (0.04%)

License & Basic Engineering: Petrochemical Research & Technology Petrochemical Co., Hedco
Engineering & Procurement: Hampa Co.
Physical progress (as of 20 March 2019): 11.7%



Production Capacity (KT/Y)

Product	Nominal capacity	Salable
Ammonia	680	75
Urea	1,075	1,075
Total	**1,755**	**1,150**

Applications

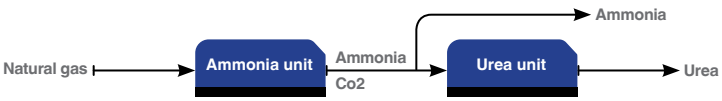
As Chemical fertilizer for agricultural purposes

Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Natural gas	670	South Pars Oil & Gas Co.

* Feed & Fuel

Production Process Diagram



Kian Olefin (12th Olefin)

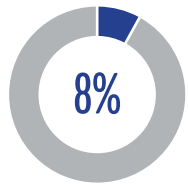
Nominal Capacity
2,139
KT/Y

Start date
2012

operation date
2023

- **Implemented by:** Kian Petrochemical Co. (Private Joint Stock)
- **Location:** Pars Special Economic / Energy Zone (Phase 2)
- **Area:** 75 hectares
- **Ownership:** Parsian Oil & Gas Expansion Group (58%), Petro Farhang Co. (40%), Other shareholders (2%)

License & Basic Engineering: Linde
Physical progress (as of 20 March 2019): 8% (Phase 1)



Production Capacity (KT/Y)

Input Feed	Nominal Capacity	Salable
Ethylene	1,260	689
Propylene	327	37
Benzene	202	-
Ethyl Benzene	268	-
Styrene	266	266
Propylene Oxide	150	150
Butadiene	177	177
Exo Alcohol	275	275
HDPE	500	500
Fuel Oil	45	45
Total	**3,470**	**2,139**

Applications

Feedstock for various downstream industries in production of polyolefin, polystyrenes, aceton, phenol, polyester, PTA, paint industry, as solvent in chemical industry & softeners

Feedstock (KT/Y)

Feedstock	Capacity	Source
Liquid Gas	1,291	South Pars Phases
C3+	315	Kavian, Morvarid & Bushehr Petrochemical Cos.
Ethane	900	South Pars Oil & Gas Refinery (Phase 14)

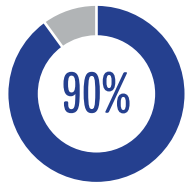
Start date
2014

operation date
2020

Middle East Kimiya Pars Methanol

- **Implemented by:** Middle East Kimiya Pars Company (Private Joint Stock)
- **Location:** South Pars Special Economic / Energy Zone (Phase2)
- **Area:** 7.48 hectares
- **Ownership:** Petro Farhang (84.1%), Iranian Invesment Petrochemical Group Co. (10.8%), Other shareholders (5.1%)

License & Basic Engineering: Haldor Topsoe (Denmark)
Detailed Engineering, Procurement, Constuction & commissioning: TCC (China)
Physical progress (as of 20 March 2019): 90%



Production Capacity (KT/Y)

Product	Nominal capacity	Salable
Methanol	1,650	1,650

Applications

Production of MTBE, acetic acid, resins, formaldehyde, anti-freeze, adhesives, diesel fuel, different plastics and as solvent in downstream industries, MTP and MTO

Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Natural gas	1,378	South Pars Oil & Gas Co.
Oxygen	520	Damavand Petrochemical Co.

* Feed & Fuel

Production Process Diagram

Propane De-Hydrogenation (PDH/PP)

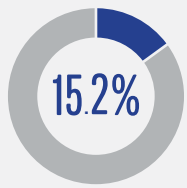
Nominal Capacity
900
KT/Y

Start date
2012

operation date
2024

- **Implemented by:** Mehr Petrokimiya Company (Private Joint Stock)
- **Location:** South Pars Special Economic / Energy Zone (Phase 2)
- **Area:** 24.5 hectares
- **Ownership:** Parsian Investment Co. (65%), Parsian Bank (35%)

License: Uhde (PDH), Mitsui (PP)
Basic Engineering: DAELIM / Uhde
Constuction, Erection & Precommissioning: Sazeh
Physical progress (as of 20 March 2019): 15.2%



Production Capacity (KT/Y)

Product	Nominal capacity	Salable
Propylene	450	-
Polypropylene	450	450
Total	**900**	**450**

Applications

Production of films, home appliances, auto parts, wire, cables, fittings,...

Production Capacity (KT/Y)

Feedstock	Capacity	Source
Propane	560	South Pars (Phases 9 & 10)
Ethylene	30	Jam Petrochemical Co.
Butene-1	5	Jam Petrochemical Co.

Production Process Diagram

Nominal Capacity
1,755
KT/Y

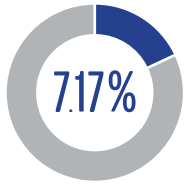
Start date
2014

operation date
2025

Ammonia / Urea 13

- **Implemented by:** Hormoz Fertilizer Urea Co.
- **Location:** South Pars Special Economic / Energy Zone (Phase 2)
- **Area:** 24.45 hectares
- **Ownership:** NPC International (99%), PLLC Group (1%)

License & Basic Engineering: Casale (Ammonia), Toyo (Urea)
Physical progress (as of 20 March 2019): 7.17%



Production Capacity (KT/Y)

Product	Nominal capacity	Salable
Ammonia	680	75
Urea	1,075	1,075
Total	**1,755**	**1,150**

Applications

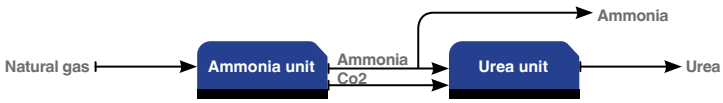
As chemical fertilizer for agricultural purposes

Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Natural gas	670	South Pars Oil & Gas Co.

* Feed & Fuel

Production Process Diagram



Hengam Ammonia/Urea

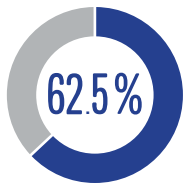
Nominal Capacity
1,800
KT/Y

Start date
2012

operation date
2021

- **Implemented by:** Hengam Petrochemical Co. (Private Joint Stock)
- **Location:** Pars Special Economic/Energy Zone (Phase 2)
- **Area:** 25.47 hectares
- **Ownership:** Persian Gulf Petrochemical Co. (97.43%), Others (2.57%)

License & Basic Engineering: Haldor Topsoe (Ammonia) / SAIPEM (Urea)
Detailed Engineering,Procurement, Erection,Constuction& Commissioning: PIDEC
Physical progress (as of 20 March 2019): 62.5%



Production Capacity (KT/Y)

Products	Nominal capacity	Salable
Methanol	725	125
Ammonia	1,075	1,075
Total	**1,800**	**1,200**

Applications

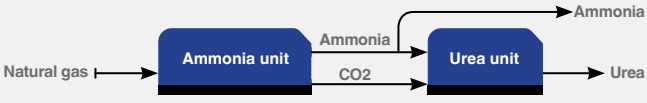
As chemical fertilizer for agricultural purposes

Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Natural gas	731	South Pars Oil & Gas Co.

* Feed & Fuel

Production Process Diagram



Styrene Park

Start date
2011

operation date
2019

Location: South Pars Special Economic/Energy Zone (Phase 2)
Area: 39 hectares

The first chemical park of the country approved by the government to be built in South Pars Special Economic / Energy Zone in 2008 based on value added of chain styrene products. The executive project activities and providing its infrastructures have been started by the NPC and some private companies in 2011.

The following projects are planned to be implemented in the Styrene Park:

Polystyrene of Entekhab Industrial Group (Brought onstream in 2016)
Expanded polystyrene Project of Dalahoo Kimiya Industry Co.
ABS & LCBR/ SB/ SBS of Pad Jam Polymer Development
EBSR of Sadaf Chemical Co. of Assaluyeh

SBS, SB, LCBR & ABS

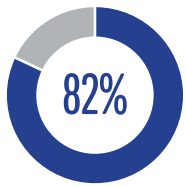
Nominal Capacity
260
KT/Y

Start date
2010

operation date
2020

- **Implemented by:** Pad Jam Polymer Expansion Company (Private Joint Stock)
- **Location:** South Pars Special Economic /Energy Zone (Phase 2)
- **Area:** 14.89 hectares
- **Ownership:** Jam Petrochemical Co. (100%)

License: Europe Polymer Co.
EPCC: Tecnimont /Jondi Shapour
Erection, Construction & Precomissioning: Jondi Shapour
Physical progress (as of 20 March 2019): 82%



Production Capacity (KT/Y)

Products	Nominal capacity	Salable
ABS	200	200
SBS/ SB / LCSR	60	36
Total	**260**	**236**

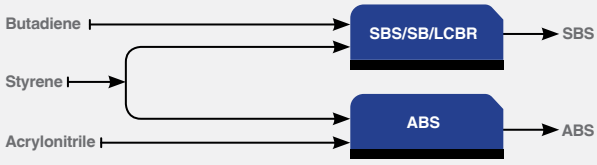
Applications

Production of auto parts, home appliances

Feedstock (KT/Y)

Feedstock	Capacity	Source
Styrene	145	Pars Petrochemical Co. /Other resources
Butadiene	54	Jam Petrochemical Co.
Acrylonitrile	48	Arg Petrochemical Project / Other resources

Production Process Diagram



Nominal Capacity

136
KT/Y

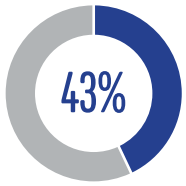
Start date
2010

operation date
2021

ESBR

- **Implemented by:** Assaluyeh Sadaf Chemical Co. (Private Joint Stock)
- **Location:** South Pars Special Economic / Energy Zone (Phase 2)
- **Area:** 8.2 hectares
- **Ownership:** Iranian Investment Petrochemical Group (97%), Hezareh Sevom Investment (2%) Other shareholders (1%)

License: Versalis (Italy)
Basic & Detailed Engineering & Procurement: Tecnimont/ Nargan
Civil, Construction, Installation & Precommissioning: ECC
Physical progress (as of 20 March 2019): 43%



Production Capacity (KT/Y)

Product	Nominal capacity	Salable
ESBR	136	136

Applications

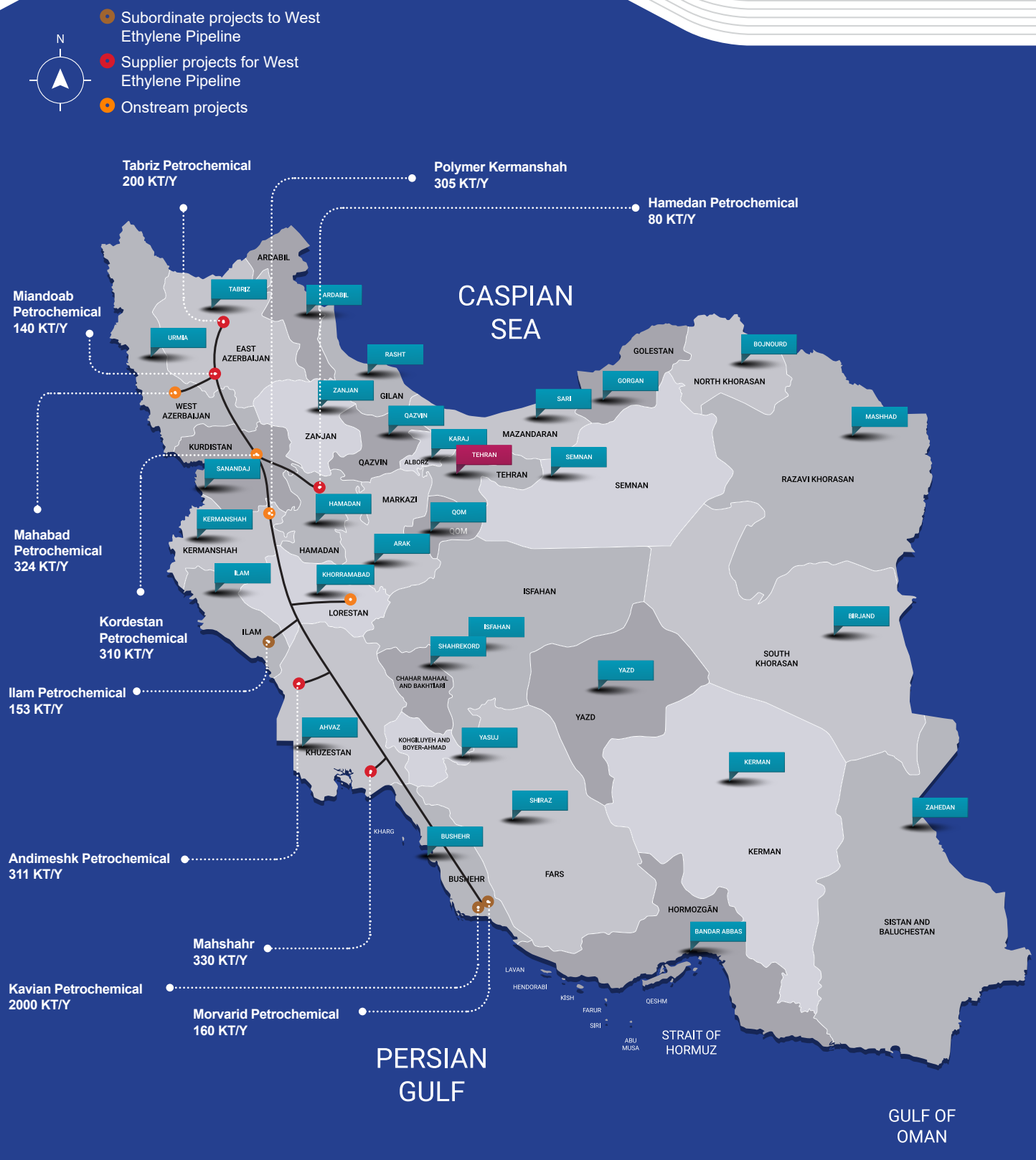
Production of tires, cable and wire coverage

Feedstock (KT/Y)

Feedstock	Capacity	Source
Butadiene	84	Jam Petrochemical Co./Other resources
Styrene	27	Pars Petrochemical Co./Other resources

Production Process Diagram

WESt ETHYLENE PIPELINE

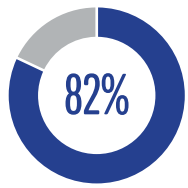


West Ethylene Pipeline & DENA Region

- **Implemented by:** Petrochemical Industries Development Management Co. (Private Joint Stock)
- **Location:** West of Iran (from Assaluyeh to Tabriz)
- **Overall length (Main trunk & branches):** 2,740 km
- **Smallest pipe size:** 8 inch
- **Largest pipe size:** 24 inch
- **No. of projects:** 8(including Tabriz Petrochemical Co.), 4 (Dena Region)
- **Minimum pipe pressure:** 55 psi
- **Maximum pipe pressure:** 93 psi
- **No. of pressure booster stations:** 8
- **Line capacity:** 3.5 million t/y

* The first phase of Pipeline (from Assaluyeh to Kermanshah) has been brought onstream since 2012
* Phase 2: 2020 (from Kermanshah to Mahabad along with Lorestan branch)
* Phase 3: 2024 (from Miandoab to Tabriz along with Dena line and Hamedan branch)

Conceptual Design Consultant: Technip, Nargan
Detailed & Basic Engineering: Energy Paidar Engineering & Expansion Co.
Pipeline contractors: Omran Sazan, Sahand Azar, Asfalt Toos, Iran Pipline, Bornak, Iran Ertebat, Rampco, Sat, Sahand Sazeh Alborz, Marun Mechanic
Physical progress (as of 20 April 2019): 82%



Applications

Transferring ethylene from 11th Olefin, Assaluyeh Olefin & Gachsaran Olefin to western provinces & Dena region to provide Feedstock for petrochemical complexes

Ethylene Subordinates

Bakhtar Consumer and Other Companies [1]	Dena Consumer
Kermanshah Polymer [2]	___
Lorestan [3]	Mamasani
Kordestan [4]	Dehdasht
Mahabad [5]	Boroujen
Miandoab	Kazeroon
Andimeshk	___
Ibn-e- sina Hamedan	___
Tabriz	___

1) West Ethylene Pipeline also provides the shortage of Mahshahr ethylene
2) Brought onstream in 2012
3) Brought onstream in 2014 & 2015
4) Brought onstream in 2016
5) Brought onstream in 2017

Nominal Capacity

300
KT/Y

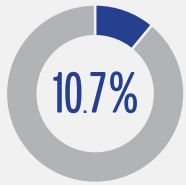
Start date
2013

operation date
2024

Hamedan Ethoxylates

- **Implemented by:** Ibn-e-Sina Hamedan Petrochemical Co.
- **Location:** Hamedan
- **Area:** 100 hectares
- **Ownership:** NPC (20%), Hami Iranian Steel Co. (77%), Natural Person (3%)

License: Shell (Netherlands), Sulzer (Switzerland), Boss (Switzerland)
Physical progress (as of 20 March 2019): 10.7%



Production Capacity (KT/Y)

Product	Nominal capacity	Salable
EO	110	9
Ethoxylates	100	100
Glycol ether	50	50
MDEA/MEA	30	30
MEG	10	10
Total	**300**	**199**

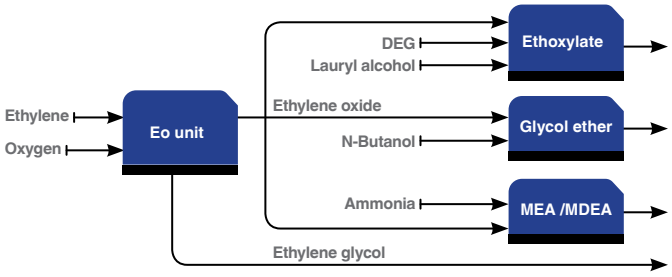
Applications

Production of detergents, solvents and paints

Feedstock (KT/Y)

Feedstock	Capacity	Source
Ethylene	80	West Ethylene Pipeline
Normal butanol	30	Arak Petrochemical Co. & Other resources
Ammonia	6	Kermanshah Petrochemical Co.

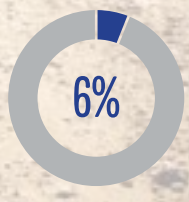
Production Process Diagram



Andimeshk LDPE

- **Implemented by:** Andimeshk Petrochemical Co. (Private Joint Stock)
- **Location:** Andimeshk
- **Area:** 158 hectares
- **Ownership:** Bakhtar Petrochemical Co. (59.98%), Saderfar (20%), Poshineh Methanol (20%), Kavian Petrochemical Co. (0.01%), Kordestan Petrochemical Co. (0.01%),

License: Basell
Basic & Detailed Engineering & Procurement: Nargan, Tecnimont of Italy
Physical progress (as of 20 March 2019): 6%



Production Capacity (KT/Y)

Product	Nominal capacity	Salable
LDPE	300	300

Applications

Production of polyethylene films, polyethylene foams, Cable & wire coating, plastic parts,...

Feedstock (KT/Y)

Feedstock	Capacity	Source
Ethylene	311	West Ethylene Pipeline

Production Process Diagram

Nominal Capacity

140
KT/Y

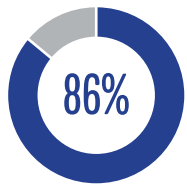
Start date
2013

operation date
2020

Miandoab HDPE

- **Implemented by:** Miandoab Petrochemical Co. (Private Joint Stock)
- **Location:** Miandoab
- **Area:** 22 hectares
- **Ownership:** Bakhtar Petrochemical Co. (70%), Poushineh Methanol (30%)

License: Mitsubishi (Japan)
Basic Engineering & Procurement: PIDEC / Sazeh Consultant Engineers Co.
Civil & Construction: Bamdad Zendehroud Co, Tarakom Co, Sakhtar Sanat Paidar
Installations & Precomissioning: Sanat Paydar / Garma Gostar / Mabna Nirou
Physical progress (as of 20 March 2019): 86%



Production Capacity (KT/Y)

Product	Nominal capacity	Salable
HDPE	140	140

Applications

Feedstock for petrochemical downstream units producing various pipes, plastic parts, cables

Feedstock (KT/Y)

Feedstock	Capacity	Source
Ethylene	140	West Ethylene Pipeline
Butene-1	2	Petrochemical Complexes

Production Process Diagram

DENA REGION


CASPIAN SEA
ARDABIL
TABRIZ
ARDABIL
URMIA
EAST AZERBAIJAN
RASHT
GILAN
ZANJAN
WEST AZERBAIJAN
QAZVIN
ZANJAN
KURDISTAN
KARAJ
MAZANDARAN
TEHRAN
ALBORZ
QAZVIN
SANANDAJ
TEHRAN
SEMNAN
SEMNAN
HAMADAN
MARKAZI
KERMANSHAH
QOM
HAMADAN
ARAK
KERMANSHAH
ILAM
KHORRAMABAD
ISFAHAN
LORESTAN
ILAM
ISFAHAN
SHAHREKORD
CHAHAR MAHAAL AND BAKHTIARI
YAZD
YAZD
AHVAZ
KOHGILUYEH AND BOYER-AHMAD
YASUJ
KHUZESTAN
KERMAN
SHIRAZ
KHARG
BUSHEHR
KERMAN
FARS
BUSHEHR
HORMOZGĀN
BANDAR ABBAS
SISTAN AND BALUCHESTAN
LAVAN
HENDORABI
KISH
QESHM
FARUR
SIRI
ABU MUSA
STRAIT OF HORMUZ
GOLESTAN
BOJNOURD
GORGAN
NORTH KHORASAN
SARI
MASHHAD
RAZAVI KHORASAN
BIRJAND
SOUTH KHORASAN
ZAHEDAN
Broujen Petrochemical
305 KT/Y
Dehdasht Petrochemical
305 KT/Y
Gachsatan Petrochemical
1000 KT/Y
Mamasani Petrochemical
305 KT/Y
Kazerun Petrochemical
290 KT/Y
Subordinate Projects to West Ethylene Pipeline
Supplier Projects for West Ethylene Pipeline
PERSIAN GULF
GULF OF OMAN

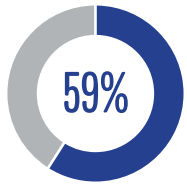
Gachsaran Olefin (8th Olefin)

- **Implemented by:** Gachsaran Petrochemical Co. (Private Joint Stock)
- **Location:** Gachsaran
- **Area:** 157 hectares
- **Ownership:** Kazeroun Petrochemical Co (22.3%) Mamasani Petrochemical Co. (22.3%), Dehdasht Petrochemical Co. (21.1%), Boroujen Petrochemical Co. (18.7%), Iranian Investment Petrochemical Group (10.6%), Saderat Bank (2.6%), Tose-eh Insurance (2.1%)

- **Production Capacity (KT/Y)**

Products	Nominal capacity	Salable
Ethylene	1,000	1,000
C3+	90	90
Total	**1,090**	**1,090**

Basic & Detailed Engineering & Procurement: Alinam Consulting Engineers / Fanavaran Tehran Farayand Co.
Installation & Construction: Fater Kosaran, Zeidoon koosh, Ram Co.
Physical progress (as of 20 March 2019): 59%



Applications

Providing feedstock for petrochemical plants en route the West Ethylene Pipeline (Dena Region)

Feedstock (KT/Y)

Feedstock	Capacity	Source
Ethane	1,250	2nd Bid Boland Project

Production Process Diagram

Other Regions

Nominal Capacity
415
KT/Y

Start date
2013

operation date
2020

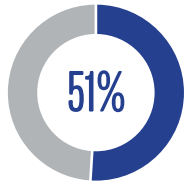
Arta Energy Methanol & formaldehyde

- **Implemented by:** Arta Energy Co.
- **Location:** Ardebil
- **Area:** 8.3 hectares
- **Ownership:** Natural Persons (100%)

Production Capacity (KT/Y)

Product	Nominal Capacity	Salable
Methanol	132	-
Formaldehyde	283	283
Total	**415**	**283**

Engineering & Procurement: Thyssenkrupp Industrial Solution (Germany)
LIcense: Uhde
Physical progress (as of 20 March 2019): 51%

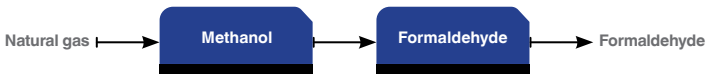


Feedstock (msm^3/y)

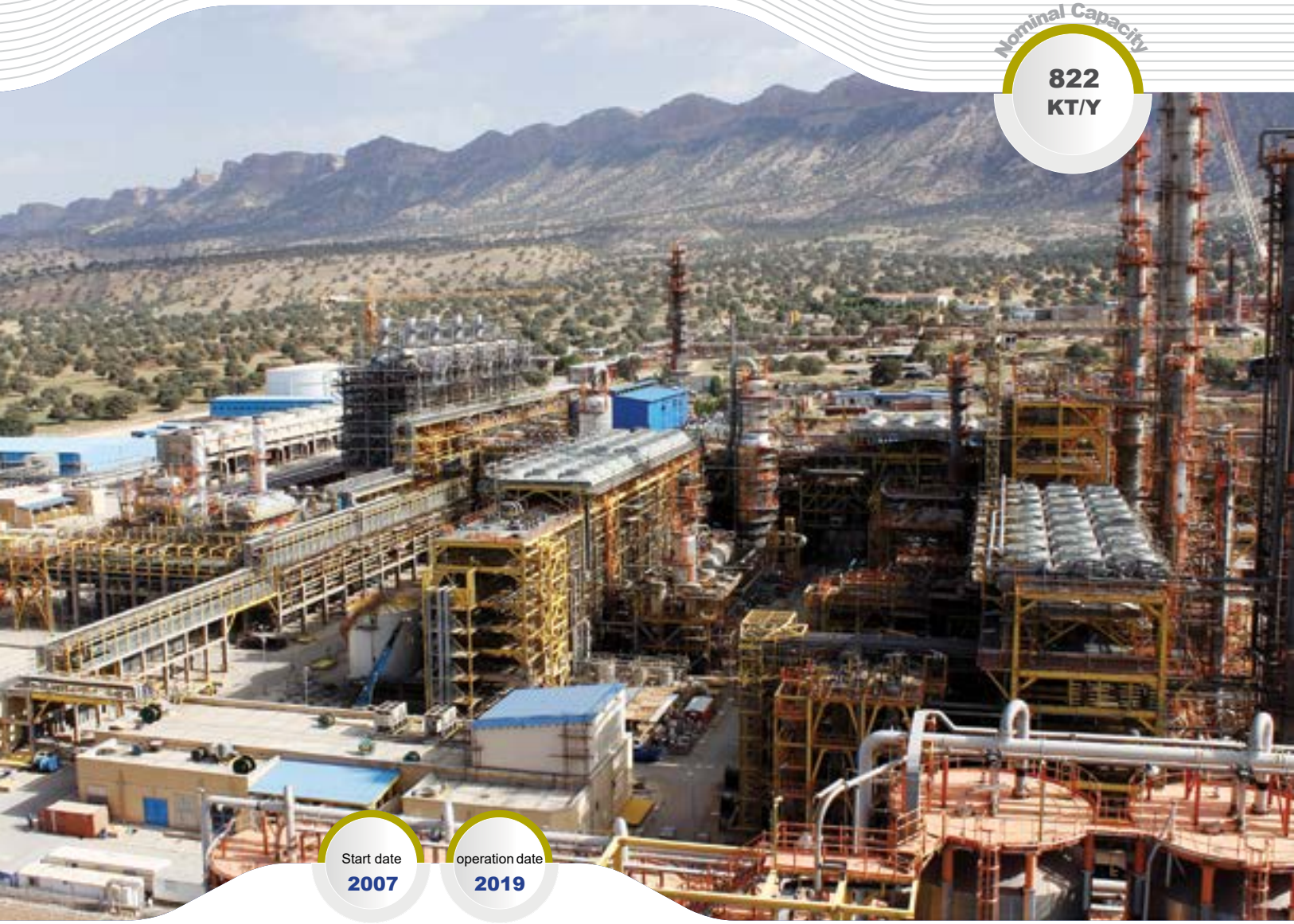
Feedstock	Capacity	Source
* Natural gas	92	NIGC

* Feed & Fuel

Production Process Diagram

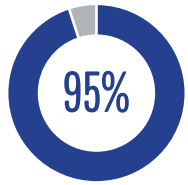


Ilam Olefin (13th Olefin)



- **Implemented by:** Ilam Petrochemical Co. (Private Joint Stock)
- **Location:** Ilam
- **Area:** 122 hectares
- **Ownership:** Iranian Investment Petrochemical Group (51.2%), Tamin Oil, Gas & Petrochemical Investment (17%), Civil Pension Fund Investmen (17%), IPCC (2.5%), Marun Petrochemical Co. (6.8%), Other shareholders (5.4%)

License: Stone & Webster (Olefin), Axens (Desulphurisation)
Contractors of EPCC: Bina / Steam / Nargan / EIED
Physical progress of phase2 (as of 20 March 2019): 95%



Production Capacity (KT/Y)

Products	Nominal capacity	Final
Ethylene	458	153
Propylene	124	120
Pyrolysis gasoline	132	132
Fuel oil	33	33
C4 cuts	75	--
Total	**822**	**438**

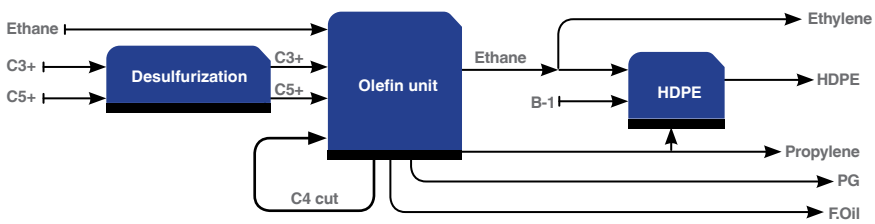
Applications

Raw material for polyolefins and ethylene glycol

Feedstock (KT/Y)

Feedstock	Capacity	Source
Ethane	233	Ilam Gas Refinery
C3+ cuts	328	Ilam Gas Refinery
C5+ cuts	391	Ilam Gas Refinery

Production Process Diagram



Nominal Capacity
1,518
KT/Y

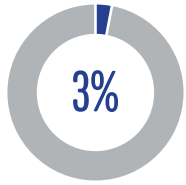
Start date
2018

operation date
2022

Dehloran Ethylene, Propylene & HDPE

- **Implemented by:** Dehloran Petrochemical Co.
- **Location:** Dehloran
- **Area:** 200 hectares
- **Ownership:** Ahdaf Investment Co. (99.97%), Other Shareholders (0.03%)

Basic and Detailed Engineering & Procurement, Precommissioning & commissioning: TT (Italy), Waltertosto, Belleli, Chemtrade
Physical progress (as of 20 March 2019): 3%



Production Capacity (KT/Y)

Products	Nominal capacity	Final
Ethylene	633	323
Propylene	173	-
Pyrolysis gasoline	33	33
Fuel oil	6	6
Fuel Gas	230	-
Sour gas	3	3
Poly Propylene	140	140
HDPE	300	300
Total	**1,518**	**805**

Applications

Ethylene: Plastic industry, agriculture, medical

Propylene: Production of pipes, home appliances & carpet

Fuel oil: Chemical industry, cosmetics, diluent of adhesives

Feedstock (KT/Y)

Feedstock	Capacity	Source
C2+	1,188	NGL3100

Production Process Diagram

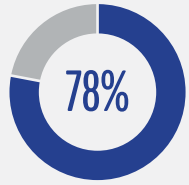
Khomein Polypropylene

- **Implemented by:** Di Arya Polymer Company (Private Joint Stock)
- **Location:** Khomein
- **Area:** 24 hectares
- **Ownership:** Natural person (100%)

Production Capacity (KT/Y)

Product	Nominal capacity	Salable
Polypropylene	175	175

License & Basic Engineering: Sheripol Bassel
Detailed Engineering, Procurement, installation & Construction: Sazeh
Civil & Construction Engineering: Darsaz Bana Co.
Installation & Precomissioning: Sakhtar Sanat Paydar
Physical progress (as of 20 March 2019): 78%



Applications

Production of home appliances, stationeries, packing, machine equipments

Feedstock (KT/Y)

Feedstock	Capacity	Source
Propylene	175	Arak Refinery / Other resources
Ethylene	10	Petrochemical complexes
Butene-1	2	Petrochemical complexes

Production Process Diagram

Nominal Capacity
1,755
KT/Y

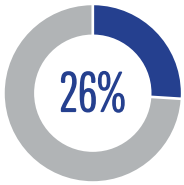
Start date
2007

operation date
2024

Zanjan Ammonia and Urea

- **Implemented by:** Zanjan Petrochemical Co.
- **Location:** Zanjan
- **Area:** 56.3 hectares
- **Ownership:** Taban Investment managment Group (28.19%), Satia Investment managment Group (15.54%), Mahestan Sabz Kish Co. (12.54%), Hiva market Development (7.20%), Hirad market Development (6.92%), Pars Sepanta market Development (5.24%), Nik Pardazesh Zangan Co. (6.09%), Other Shareholders (18.28%)

License: Ammonia Casale (Ammonia), Stami Carbon (Urea)
Engineering, Procurement, Installation & Precommissioning: Hampa Co.
Physical progress (as of 20 March 2019): 26%



Production Capacity (KT/Y)

Product	Nominal Capacity	Salable
Ammonia	680	75
Urea	1,075	1,075
Total	**1,755**	**1,150**

Applications

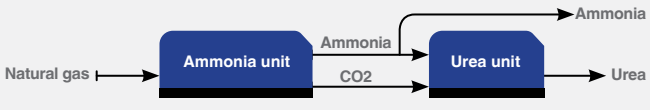
As chemical fertilizers for agricultural purposes

Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Natural gas	770	NIGC

* Feed & Fuel

Production Process Diagram



Siraf Methanol

- **Implemented by:** Siraf Energy Investment Co.
- **Location:** Bushehr Province, Dayer
- **Area:** 54 hectares
- **Ownership:** Energy Sepehr Co. (100%)

Production Capacity (KT/Y)

Product	Nominal capacity	Salable
Methanol	1,650	1,650

Applications

Production of MTBE, acetic acid, resins, formaldehyde, anti-freeze, adhesives, diesel fuel, plastics and as solvent in downstream industries, MTP and MTO

License: Haldor Topsoe (Denmark)
Detailed Engineering & Procurement: Namvaran / Pendar / Parsian Azarab / Petro Taksan / Persian Sazeh
Civil & Construction: Tiv Energy / Panah Sanat Part / Ghotb
Physical progress (as of 20 March 2019): 40%

Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Natural gas	1,393	NIGC

* Feed & Fuel

Production Process Diagram

Nominal Capacity
2,849
KT/Y

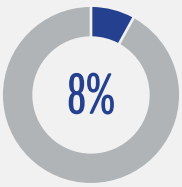
Start date
2013

operation date
2025

Fateh Kimia GTPP (Methanol Phase 1)

- **Implemented by:** Fateh Kimia Co.
- **Location:** Boushehr Province, Dayer
- **Area:** 94 hectares
- **Ownership:** Natural Persons (100%)

Engineering & Procurement: PIDEC
License & Basic Engineering: Casale (Methanol)
Physical progress (as of 20 March 2019): 8%



Production Capacity (KT/Y)

Product	Nominal Capacity	Salable
Methanol	1,650	-
Pyrolisis Gasoline	125	125
Liquefied Gas	69	69
Propylene	515	-
Polypropylene	490	490
Total	**2,849**	**684**

Applications

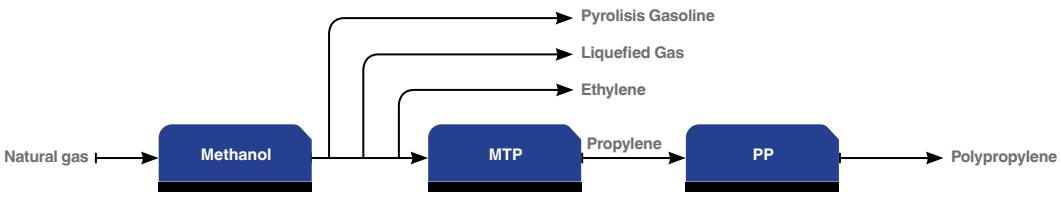
Production of MTP, home appliances, stationeries, packing, machine equipments

Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Natural gas	1,538	NIGC

* Feed & Fuel

Production Process Diagram



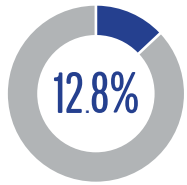
Firouzabad Olefin (14th Olefin)

- **Implemented by:** Firouzabad Petrochemical Company (Private Joint Stock)
- **Location:** 12th km of Firouzabad-Ghir Road in jaidasht
- **Area:** 160 hectares
- **Ownership:** NPC (12%), Jahrom Petrochemical Co. (27%), Fasa Petrochemical Co. (30%), Darab Petrochemical Co. (30%)

Production Capacity (KT/Y)

Product	Nominal Capacity	Salable
Ethylene	1,000	1,000
C3+ Cuts	90	90
Total	**1,090**	**1,090**

Basic Engineering: Nargan
Detailed Engineering, Erection & Construction & Procurement: Khatamol Anbiya
Physical progress (as of 20 March 2019): 12.8%



Applications

Raw material in production of polyethylenes and Ethylene Vinyl Acetate

Production Capacity (KT/Y)

Feedstock	Capacity	Source
Ethane	1,300	Parsian Sepehr Refinery

Production Process Diagram

Nominal Capacity
1,056
KT/Y

Start date
2013

operation date
2022

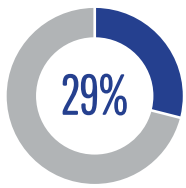
Kermanshah Ammonia/Urea (Phase2)

- **Implemented by:** Kermanshah Petrochemical Co. (Public join stock)
- **Location:** Hersin Kermanshah
- **Area:** 13 hectares
- **Ownership:** Parsian oil & Gas Co. (42.22%), Iranian Investment Group (21.69%), Petrochemical Industries Development Management Co. Sepahan Hamoun Investment Management Services Co.(4.19%), Modabberan Eqtesad Commercial Co. (1.03%), Other Shareholders (27.41%)

Production Capacity (KT/Y)

Product	Nominal Capacity	Salable
Ammonia	396	25
Urea	660	660
Total	**1,056**	**685**

License and Basic Engineering: Collage (Ammonia),Stami Carbon (Urea)
Installation and Detailed Engineering: Namvaran / Tecnimont
Physical progress (as of 20 March 2019): 29%



Applications

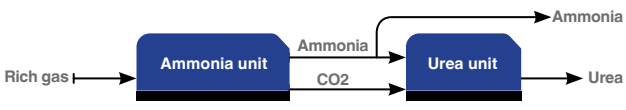
As chemical fertilizer for agricultural purposes

Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Natural gas	386	NIGC

* Feed & Fuel

Production Process Diagram



Expandable Polystyrene

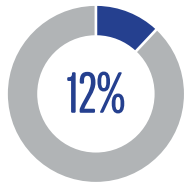
Nominal Capacity
50
KT/Y

Start date
2015

operation date
2022

- **Implemented by:** Kimia Sanaye Petro Entekhab Co.
- **Location:** Isfahan
- **Area:** 7 hectares
- **Ownership:** Entekhab Investment Development Group (100%)

License: Averic As (Norway)
Basic, Detailed Engineering & Procurement: Beijing Ortho Technology Co.
Physical progress (as of 20 March 2019): 12%



Production Capacity (KT/Y)

Product	Nominal Capacity	Salable
EPS	50	50

Applications

Production of home appliances, packing industry, electrical insulation,...

Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Styrene	40	Pars Petrochemical Co.
Normal Pentane	4	Local Sources

* Fuel

Production Process Diagram

Nominal Capacity
1,099
KT/Y

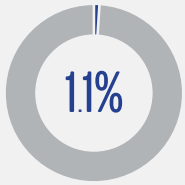
Start date
2013

operation date
2025

Olefin & Ethylene Glycoles of Genaveh Dashtestan

- **Implemented by:** Genaveh - Dashtestan Petrochemical Co.
- **Location:** Genaveh & Dashtestan
- **Ownership:** Sepehr Energy Co (99.6%), Other Shareholders (0.4%)

Physical progress (as of 20 March 2019): 1.1%



Production Capacity (KT/Y)

Product	Nominal Capacity	Salable
Ethylene	500	160
MEG	500	500
DEG	50	50
TEG	4	4
C3+cut	45	45
Total	**1,099**	**759**

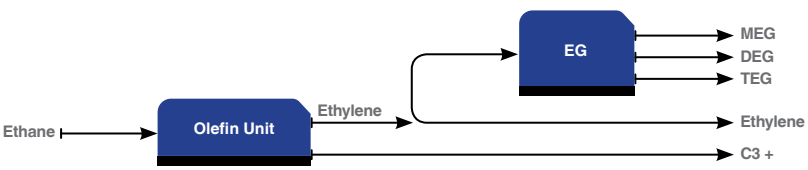
Production Capacity (KT/Y)

Feedstock	Capacity	Source
Ethane	650	Kharg Refinery (gas & liquid gas fractionation unit)

Applications

Production of polyethylene, PET, anti-freeze, textile...

Production Process Diagram



Lordegan Ammonia / Urea

- **Implemented by:** Lordegan Petrochemical Industry Co. (Public Joint Stock)
- **Location:** Lordegan, Charmahal Va Bakhtiari
- **Area:** 100 hectares
- **Ownership:** Iranian Petrochemical Investment Group (78.7%), Hampa Engineering (4.9%), Other Shareholdrs (16.4%)

Production Capacity (KT/Y)

Product	Nominal Capacity	Salable
Ammonia	680	75
Urea	1,075	1,075
Total	**1,755**	**1,150**

License: Ammonia Casale (Ammonia), Stami Carbon (Urea)
Engineering, Procurement, Installation & Construction (EPEC): HFEC Consortium / AVC / Hampa Co. / Panah Sanat Co.
Physical progress (as of 20 March 2019): 95%

Applications

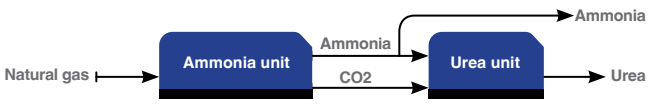
Production of chemical fertilizer for agricultural usages

Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Natural gas	905	NIGC

* Feed & Fuel

Production Process Diagram



Nominal Capacity
1,755
KT/Y

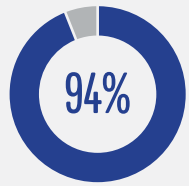
Start date
2012

operation date
2020

Masjid Soleiman Ammonia / Urea

- **Implemented by:** Masjid Soleiman Petrochemical Company (Private Joint Stock)
- **Location:** Masjid Soleiman
- **Area:** 50 hectares
- **Ownership:** National Pension Fund Investment Co. (50%), Natural person (22%) Qadr Investment Development (13%), Energy Paydar Industries Investment (13%), Other Shareholders (2%)

License: Casale (Ammonia) / Toyo (Urea)
Basic Engineering & Procurement: WUHUAN (China) / PIDEC
Physical progress (as of 20 March 2019): 94%



Production Capacity (KT/Y)

Product	Nominal Capacity	Salable
Ammonia	680	75
Urea	1,075	1,075
Total	**1,755**	**1,150**

Applications

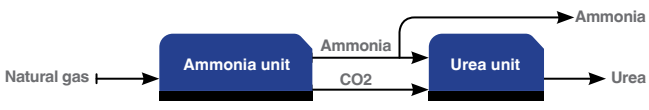
As chemical fertilizers for agricultural purposes

Feedstock (msm^3/y)

Feedstock	Capacity	Source
* Natural gas	905	NIGC

* Feed & Fuel

Production Process Diagram

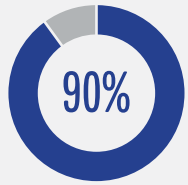


Feedstock Supply Projects
Other Regions

Bid Boland 2 Gas Refinery

- **Implemented by:** Persian Gulf Bid Boland Gas Refinery
- **Location:** Behbahan
- **Area:** 308 hectares
- **Ownership:** Persian Gulf Petrochemical Industries Co. (100%)

License: Prosernat / RIPI
Engineering and Procurement: Sazeh consortium (Jahan Pars Tehran) Azarab and etc
Physical Progress (as of Dec. 2019): 90%



Production Capacity (KT/Y)

Product	Nominal capacity	Salable
Methane	10,340	10,340 (NIGC)
Ethane	1,496	1,496
Propane	1,005	1,005
Butane	490	490
Condensates	400	400
Acidic gas	922	922 (NIGC)
Total	**3,391***	**3,391***

*Nominal capacity without Methane and Acidic gas sold to NIGC

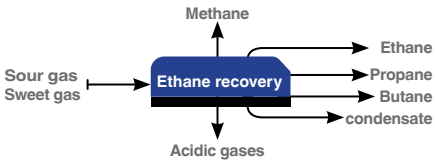
Applications

Feedstock for olefin units and other petrochemical units

Feedstock (msm^3/y)

Feedstock	Capacity	Source
Sour gas	16,680	NGL 900/1000
Sweet gas	2,945	NGL 1200/1300

Production Process Diagram



Nominal Capacity
3,332
KT/Y

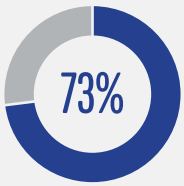
Start date
2013

operation date
2020

Ethane Recovery
Parsian Sepehr Refinery

- **Implemented by:** Parsian Sepehr Refinery Co. (Private Joint stock)
- **Location:** Pars Special Economic/Energy Zone (Phase 2)
- **Area:** 25 hectars
- **Ownership:** Tadbir Drilling Development Co., Parsian Bank Financial Group, Persia Oil & Gas Industry Development Co., Tadbir Investment Group

License: Headco Industries
Engineering and Procurement: Hampa Energy
Physical progress (as of 20 March 2019): 73%



Production Capacity (KT/Y)

Product	Nominal capacity	Salable
Methane	16,000	16,000 (NIGC)
Ethane	1,300	1,300
Propane	612	612
Butane	450	450
C5+ cut	970	970
Total	**3,332***	**3,332***

*Nominal capacity without Methane sold to NIGC

Applications

Feedstock for olefin units and other petrochemical units

Feedstock (msm^3/y)

Feedstock	Capacity	Source
Rich gas	2,0467	Mehr Refinery

Production Process Diagram

NGL 3200

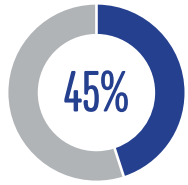
- **Implemented by:** Persian Gulf Yadavaran Gas Refinery (Private joint stock)
- **Location:** West Karoun river (60 KM South Hoveyzeh)
- **Area:** 180 hectars
- **Ownership:** Persian Gulf Petrochemical Co. (100%)

Production Capacity (KT/Y)

Products	Nominal Capacity	Salable
Methane	1,758	1,758 (NIGC)
Ethane and higher densities	1,792	1,792
Total	**1,792***	**1,792***

*Nominal capacity without Methanol sold to NIGC

Basic Engineering & Procurement: Prosernat Co. (France)
Physical progress (as of 20 March 2019): 45%



Applications

Feedstock for Bandar-e-Imam Petrochemical Co. Units (Faravareh Co.)

Feedstock (KT/Y)

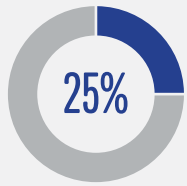
Feedstock	Capacity	Source
Rich gas	3,550	Yadavaran, Azadegan & Darkhovin Oil Fields

Production Process Diagram

NGL 3100 Refinery

- **Implemented by:** Dehloran Petro Refining Co.
- **Location:** Dehloran, Dashte Abbas District
- **Area:** 100 hectares
- **Ownership:** Oil Industry Pension Fund (100%)

Civil & Construction: Ehdas Co., Rahgostar Co.
Basic & Detaild Engineering, Procurement: OIEC Co, OTC Co, Fateh Group, Havayar, Petro Techna
Physical progress (as of 20 March 2019): 25%



Production Capacity

Product	Nominal Capacity	Salable
C_2+	2,098,800 (m3/y)	40,000
Condensate	44,550 (m3/y)	850
Sweet Gas	720 (m3/y)	77
Sulfur	132 (KT/Y)	400

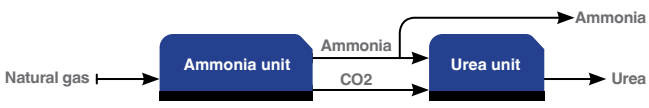
Applications

Feedstock for Dehloran Petrochemical Co.

Feedstock (msm^3/y)

Feedstock	Capacity	Source
Sour Gas	374	Paydar Bengestan
Sweet Gas	187	Paydar Asmari
Sour Gas	1,121	Dehloran
Sweet Gas	561	Cheshmakhosh

Production Process Diagram



12th Phase South Pars Ethane Recovery

- **Implemented by:** Kangan Petro-Refinery Co. (Public Joint stock)
- **Location:** Kangan
- **Ownership:** Ahdaf Investment Co., Saba Karon Oil & Gas Development Co. Ofogh Zarin Mohaseb Co.

Production Capacity (KT/Y)

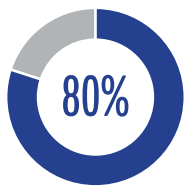
Product	Nominal capacity	Salable
Methane	24,890	24,890 (NIGC)
Ethane	1,729	1,729
Propane	1,003	1,003
Butane	512	512
C5+ cut	221	221
Total	**3,465***	**3,465***

*Nominal capacity without Methane sold to NIGC

Applications

Feedstock for olefin units and other petrochemical units

Basic and Detailed Proof and Purchasing: EIED
Ethane Recovery Package Unit Proof and Design: Nitel Pars Co.
Engineering & Procurement: Bakhtar Industry Development Management / EIED
Physical Progress (as of Feb 2019): 80%



Feedstock (msm^3/y)

Feedstock	Capacity	Source
Rich gas	26,400	12th Phase South Pars Gas Refinery

Production Process Diagram

Inactive Petrochemical Projects

Other Petrochemical Industry Projects

Project	Implemented by	Location
2nd Pahse of maleic anhydride/ Butanediol/ Polybutylene terephthalate	Ibne-e-Sina Petro-Kimia Co.	Special Economic Petrochemical Zone
Pentaerythritol 2nd phase	Shahid Rasouli Petrochemical Co.	Special Economic Petrochemical Zone
Expanded Polystyrene 2nd phase	Dalahou Kimia Industries Co.	Pars Special Economic/ Energy Zone
Hamedan PVC	Hegmataneh Petrochemical Co.	Hamedan
Methanol/2nd phase	Kharg Petrochemical Co.	Kharg
NGL	Kharg Petrochemical Co.	Kharg
EPS	Petro Ramesheh Co.	Isfahan
Centre Ethane/ Ethylene Pipeline	Khatamolanbeya Subbase/NPC	From Firouzabad to Dependant Complexes
Darab HDPE	Darab Petrochemical Co.	Darab
Jahrom HDPE/LDPE	Jahrom Petrochemical Co.	Jahrom
Fasa LDPE	Fasa Petrochemical Co.	Fasa
Mamasani HDPE	Mamasani Petrochemical Co.	Mamasani
Dehdasht HDPE	Dehdasht Petrochemical Co.	Dehdasht
Broujen HDPE	Boroujen Petrochemical Co.	Boroujen
Kazeroun HDPE/ LLDPE and Nodan Polystal	Kazeroun Petrochemical Co.	Kazeroun/ Nodan
Ethylene Vinyl Acetate	-	Istahban
Golestan Ammonia and Urea	Golestan Petrochemical Co	Aqqala

Main Products	Capacity (KT/Y)	Projected Operation Date
Maleic anhydride, Butanediol, PBT, Isobutane, Tetrahydrofuran	335	1403
Acetaldehyde, Pentaerythritol, De pentaerythritol, Sodium formate	29	1403
Total Mahshahr Projects	**364**	
Expanded Polystyrene	60	1403
Total Assaluyeh Projects	**60**	
PVC powder and granular (medical grade)	48	1403
Methanol	1,700	2022
Ethane	2,400	2022
EPS	50	1403
Ethane/ Ethylene Transfer in Fars province	-	1403
HDPE	300	1403
HDPE/ LLDPE	300	1403
LDPE	300	1403
HDPE	300	1403
HDPE	300	1403
HDPE	300	1403
HDPE/ LLDPE and Polystal	320	1403
Ethylene vinyl acetate	100	1403
Ammonia and urea	1,755	1403
Total Other Regions Projects	**8,173**	
Total	**8,597**	

PETROCHEMICAL
PROJECTS

Petrochemical Industry New Projects

Petrochemical Industry's New Projects

Region	Project	Implemented by	Location	
Mahshahr	GTX	Petro-Olefin Fanavaran	Special Economic /Energy Zone (Mahshar)	
	Acrylate Chain	Saramad Rounak Energy		
	PDH/PP	Sahand Hirsa Polymer		
			Total Mahshar Projects	
Assaluyeh	Olefin and Joint Downstream-1	Persian Gulf Petrochemical Co	Special Economic /Energy Zone (Assaluyeh)	
	GTPP	Petrochemical Research and Technology		
	Gathering Contaminant Gases	Hemmat Petrochemical Co		
			Total Assaluyeh Projects	
Kangan	PDH/PP	Entekhab Investment Development Group	Kangan	
	PDH/PP	Azaran Industrial Structures		
	Olefin and Downstream	Kangan Petro-Refinery - phase 2		
	Olefin and Joint Downstream-2	Persian Gulf Petrochemical Co		
	PDH/PP	Razavi Oil and Gas		
	PDH/PP	Jam Petrochemical Co		
			Total Kangan Projects	
Jask	GTPP	Rah-Pouyan Middle East Era Commercial Co	Jask	
	PVC	Hamoun Petrochemical Co	Jask	
			Total Jask Projects	
Qeshm	GTPP	Petro- Mofid Development Co	Qehsm Free Zone	
	GTPP	Qeshm International Petrochemical Industries		
	GTX	Qeshm Kaveh Methane		
	GTX	Qeshm Oil, Gas and Petrochemical Co		
			Total Qeshm Projects	

Main Products	Nominal Capacity (KT/Y)	Salable (KT/Y)
Methanol, Ethylene, Propylene, HDPE, Polypropylene	3,355	777
Methanol, Propylene, Acrylic Acid, Butil Acrylates, 2-ethylhexanol	762	200
Propylene, Polypropylene	600	300
	4,717	**1,277**
Ethylene, Propylene, Ethylene Glycol, Acrylates, Extra Absobant and etc	4,295	2,130
Methanol, Propylene, Ethylene, Polypropylene and etc	2,799	684
Urea	1,188	1,188
	8,282	**4,002**
Propylene, Polypropylene	1,400	700
Propylene, Polypropylene	985	500
Ethylene, Polyethylene, Ethylene Glycol	2,205	1,205
Ethylene, Polyethylene	2,400	1,200
Propylene, Polypropylene	930	480
Propylene, Polypropylene	1,200	600
	9,120	**4,685**
Methanol, Propylene. Ethylene, Polypropylene and etc	2,799	684
Methanol, Propylene, Caustic soda, PVC and etc	3,816	1,784
	6,615	**2,468**
Methanol, Propylene. Ethylene, Polypropylene and etc	2,799	684
Methanol, Propylene. Ethylene, Polypropylene and etc	2,799	684
Methanol, Propylene, Formaldehyde, Polypropylene and etc	1,829	529
Methanol, Ethylene, Propylene, Acetic acid, Formaldehyde, Para formaldehyde and etc	2,499	1,329
	9,926	**3,226**

Petrochemical Industry's New Projects

Region	Project	Implemented by	Location
Other Regions	GTX	Zagros Mahan Shimi	West Islam Abad
	GTX	Zagros Petro Mahan	Mehran
	GTX	Kerman Fajr	Kerman
	GTPP	Kerman Petrochemical Co	Kerman
	GTP	Eram Tadbir Energy	Gachsaran
	GTPP	Ardebil	Arddebil
	GTPP	Khorasan Petrochemical Co *	Bojnourd
	GTX	Rejal Seraj Gostaran	Imam Hassan Bandar
	GTX	Boyer-Ahmad Dena Petrochemical Co	Yasouj
	LAB	Farid Gostaresh International Investment	Arvand Free Zone
	Polypropylene	Alvand Petrochemical Co	Malayer
	ETBE	Pishtaz Petro Industry	Arak
	Methanol and Formaldehyde	Arta Energy	Ardebil
	GTL	Narkangan	Shiraz
	GTPP	Azerbaijan Pardis	Makou
	NGL 3100	Navid Sabaye Jam Oil and Gas Development	Dehloran
	NGL 2300	Amirkabir Petrochemical Co	Maroun Khami
	NGL 1800/2400	Persian Gulf Petrochemical Co	Aghajari/ Rag Sefid
	GTX	Persian Gulf Petrochemical Co	Roudsar/ Gilan
	GTX	Persian Gulf Petrochemical Co	Amirabad/ Mazandaran
			Total Other Regions' Projects
Parsian	1st GTX	Persian Gulf Petrochemical Co	Parsian Special Economic/Energy Intensive Industries Zone
	2nd GTX	Persian Gulf Petrochemical Co	
	3rd GTX	Persian Gulf Petrochemical Co	
			Total Parsian Projects
Chabahar	GTPP	Sina Chemical Industries Development	Chabahar Free Zone
	Urea/ Amonia	Sina Chemical Industries Development	
	1st GTX	Sina Chemical Industries Development	
	2nd GTX	Sina Chemical Industries Development	
	3rd GTX	Sina Chemical Industries Development	
			Total Chabahar Projects
			Total

Main Products	Nominal Capacity (KT/Y)	Salable (KT/Y)
Methanol, Propylene, HDPE, Polypropylene and etc	3,398	803
Methanol, Ethylene, Propylene, Polyethylene, Propylene glycol,Polyelle, Acrylonitrile, Acrylic acid, Extra absorbant	3,388	760
Methanol, Propylene, Ethylene, Polypropylene, Ethylene Vinyl Acetate, Ethylene Propylene De Monomer and etc	1,837	445
Methanol, Propylene, Ethylene, Polypropylene and etc	2,799	684
Methanol, Propylene, Ethylene and etc	636	186
Methanol, Propylene, Ethylene, Polypropylene and etc	2,799	684
Methanol, Propylene, Ethylene, Polypropylene and etc	2,799	684
Methanol, Propylene, Ethylene, LDPE, Polypropylene and etc	2,980	735
Methanol, Propylene, Ethylene, HDPE, Polypropylene and etc	3,378	803
LAB, High density alcylate and etc	1,129	1,129
Polypropylene	180	180
ETBE	130	130
Methanol, Formaldehyde	415	283
Naphta, Gasoline	1,550	1,550
Methanol, Propylene. Ethylene, Polypropylene and etc	2,799	684
C_2^+	800	0
C_2^+	704	0
C_2^+	1,590	0
Methanol, Propylene, Ethylene, Propylene, Polyethylene and etc	2,998	703
Methanol, Propylene, Ethylene, Propylene, HDPE, Vinyl acetate monomer and etc	3,063	768
	39,372	**11,211**
Methanol, Propylene, Ethylene, Propylene, Polyethylene, Polypropylene, Propylene glycol, Pollyelle, Ethoxylates and etc	3,078	783
Methanol, Propylene, Ethylene, Propylene, Polypropylene, Polyethylene and etc	2,998	703
Methanol, Propylene, Ethylene, Propylene, HDPE, Vinyl acetate monomer and etc	3,063	768
	9,139	**2,254**
Methanol, Propylene. Ethylene, Polypropylene and etc	2,799	684
Amonia/ Urea	1,755	1,150
Methanol, Propylene, Ethylene, Propylene, HDPE and etc	2,925	630
Methanol, Propylene, Ethylene, Propylene, LDPE and etc	2,925	630
Methanol, Propylene, Ethylene, Propylene, HDPE/LLDPE and etc	2,925	630
	13,329	**3,724**
	100,500	**32,847**

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