



**IN THE NAME OF ALLAH**

**NPC**

PROJECTS OF PETROCHEMICAL INDUSTRY

MAY 2017

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## 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.

Nowadays, 58 petrochemical projects at different stages are underway, anticipated to have 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.

### Iran's Petrochemical Under Construction Projects

Location	Region	No	Capacity (million/tons per year)
	Mahshahr	6	1.4
	Assaluyeh	15	22.4
	Other regions	25	15.7
Total		46	39.5

### Other Private Sector Projects

Location	Region	No	Capacity (million/tons per year)
	Assaluyeh	8	12.7
	Other regions	2	3.5
Total		10	16.2

### Leading Projects of Sixth Development Plan

Location	Region	No	Capacity (million/tons per year)
	Other regions	2	2.7





PETROCHEMICAL  
SPECIAL ECONOMIC  
ZONE **MAHSHAHR**



## 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 created in order to develop the industry and trade activities (specially downstream industries), meeting the economic, social and national interests, attracting 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.





# 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. (40%), Navid Zar Shimi (20%), Rejal Petrochemical Co. (20%), Zarif Mosavar (10%), Saderfar (10%)
- Start date: 2010
- Projected operation date: 2020



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PETROCHEMICAL  
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## Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
Propylene	450	450

## Applications

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

## Feedstock (1000 t/y)

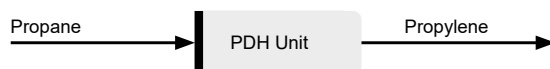
Feedstock	Capacity	Source
Propane	560	Bandar Imam Petrochemical Co.

License & basic engineering: UHDE

Detailed engineering & Procurement: UHDE & PIDEK

Physical progress (as of 20 March 2017): 12.2%

## Production Process Diagram



# 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%), Ijad Sanaat Tayeran (4.9%), Polyacryl (1.9%), Private Person (40.1%)

Start date: 2011

Projected operation date: 2020

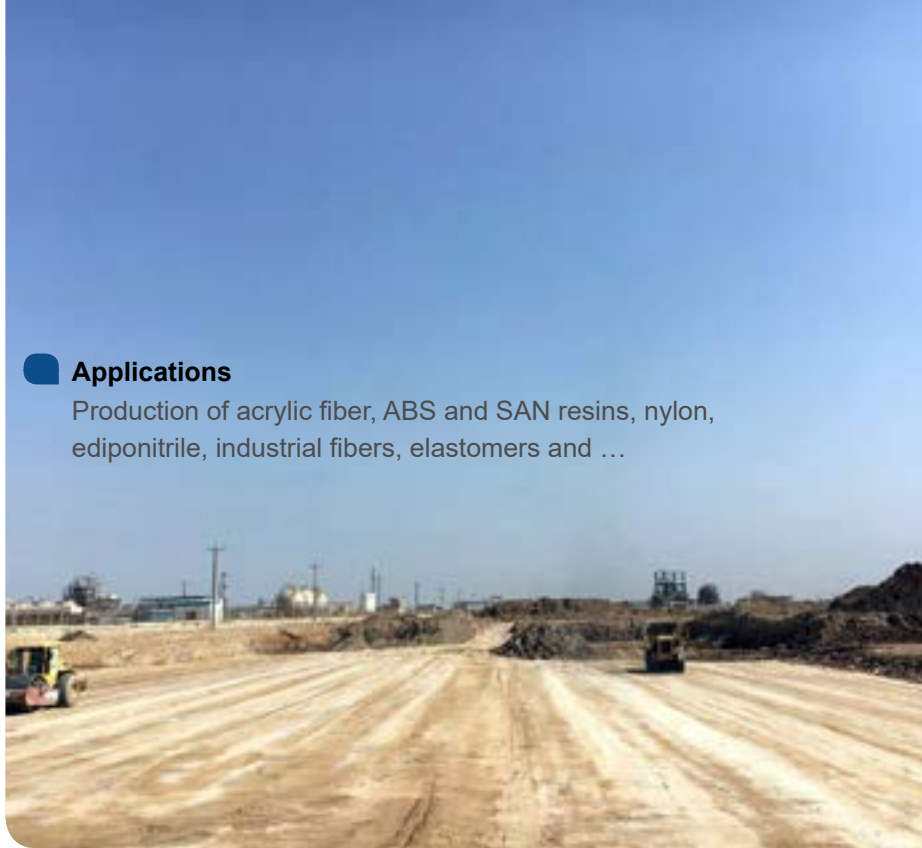


## Production Capacity (1000 t/y)

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 ...



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**PETROCHEMICAL  
PROJECTS**

## Feedstock (1000 t/y)

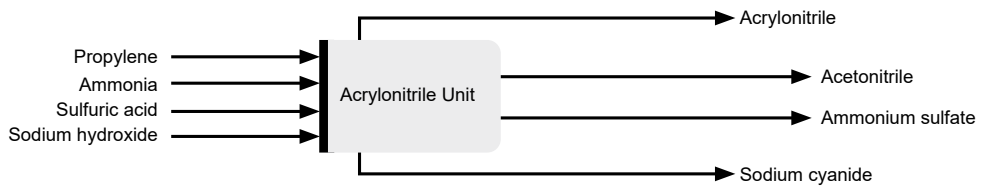
Feedstock	Capacity	Source
Propylene	110	Salman-e-Farsi Petrochemical Co., Abadan Refinery
Ammonia	52	Razi Petrochemical Co.
Sulphuric acid	9.5	Razi Petrochemical Co.
Sodium hydroxide	18	Bandar Imam / Ghadir Petrochemical Co.

License: Sohaio

Engineering & procurement: PLM Engineering

Physical progress (as of 20 March 2017): 12%

## Production Process Diagram



# Acrylates

Implemented by: Kourosh Petrochemical Development Co. (Private Joint Stock)

Location: Petrochemical Special Economic Zone

Area: 10.4 hectares

Ownership: Karafarin Bank Investment 92.5%, Private Person 7.5%

Start date: 2012

Projected Operation date: 2020



## Production Capacity (1000 t/y)

Products	Nominal Capacity	Salable
Acrylic Acid	80	0
Propylene	150	60
Oxy Alcohols	60	30
Ester Acrylates	60	60
Super Absorbing Polymers	45	45
Total	395	195

## Applications

Used in leather, paper & textile industries and protective coverages

## Feedstock (1000 t/y)

Feedstock	Capacity	Source
Propane	185	Bandar Imam Petrochemical Co.

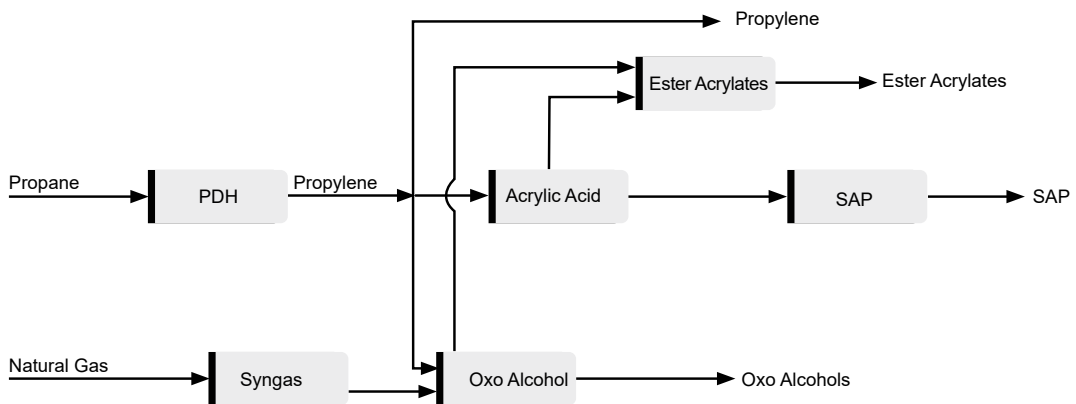


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Propylene unit license: Yarsintez (Russia)  
Engineering & procurement: Petrosakhat Chehel soton Co.  
Physical progress (as of 20 March 2017 ): 8.1%

### 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: Private Sector (100%)

Start date: 2013

Projected Operation date: 2020

## Production Capacity (1000 t/y)

Products	Nominal Capacity	Salable
MAH	110	25
BDO	75	20
PBT	60	60
Isobutane	50	50
Tetrahydrofuran (THF)	24	24
Total	319	179





### Applications

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

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PROJECTS**

### Feedstock (1000 t/y)

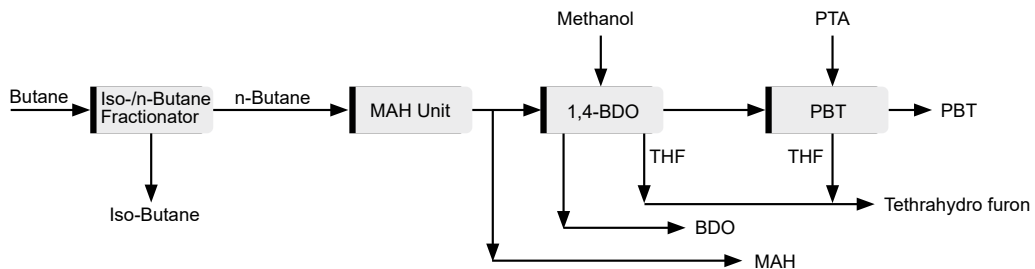
Feedstock	Capacity	Source
Butane	160	Bandar Imam Petrochemical Co.
PTA	45	Tondgouyan Petrochemical Co. / Import
Methanol	4	Fanavar Petrochemical Co.

License: Polioli (Italy)

Engineering & Construction: Iran Nasb Mashin Co.

Physical progress (as of 20 March 2017): 64%

### Production Process Diagram



# Maleic Anhydride (MAH)

Implemented by: Modabberan Shimi Co.

- Location: Petrochemical Special Economic Zone
- Area: 4.5 hectares
- Ownership: Tadbir Energy Development Group (100%)
- Start date: 2012
- Projected operation date: 2019

## Production Capacity (1000 t/y)

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





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### Applications

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

### Feedstock (1000 t/y)

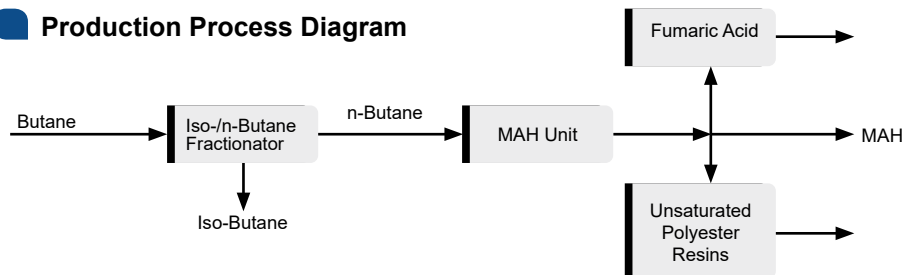
Feedstock	Capacity	Source
Butane	40	Bandar Imam Petrochemical Co.

License & Engineering: Shafagh Engineering Co. (yazd, Iran)

Engineering : EPCC, Saba Petroniroo

Physical progress (as of 20 March 2017): 13%

### Production Process Diagram



# Pentaerythritol

Implemented by: Shahid Rasouli Petrochemical Co.

● Location: Petrochemical Special Economic Zone

● Area: 8.6 hectares

● Ownership: Private Sector (100%)

● Start date: 2010

● Projected operation date: 2019

## ● Production Capacity (1000 t/y)

Products	Nominal Capacity	Salable
Pentaerythritol (98.5%)	15	15
Dipentene	0.5	0.5
Sodium formate	7.8	7.8
Acetaldehyde (98.5%)	5.6	-
Total	28.9	23.3



## Applications

Alkyd resins, varnishers, pharmaceuticals,  
softener & stabilizer



License: Wonjin

Engineering, procurement, erection & construction: Wonjin, Monco

Physical progress - Phase 2 (as of 20 march 2017): 9.2%



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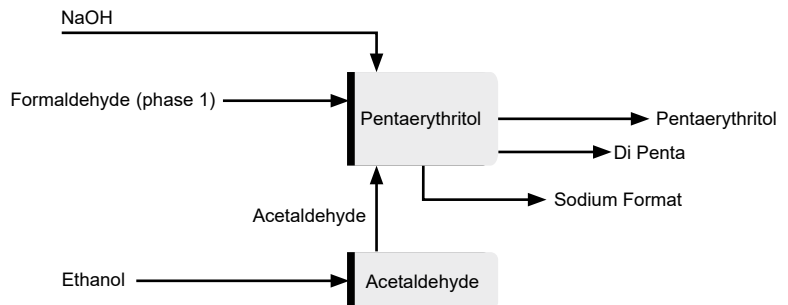
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**PETROCHEMICAL  
PROJECTS**

## Feedstock (1000 t/y)

Feedstock	Capacity	Source
Formaldehyde	36	Shahid Rasouli Petrochemical Co.
Caustic soda	28.6	Arvand Petrochemical Co.
Ethanol	6.7	Other Resources

## Production Process Diagram





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 availability of proper



infrastructures in the up, middle and down streams 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 year development plans.



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## Assaluyeh Second Phase Centralized Utility Expansion

Implemented by: Damavand Petrochemical Co. (Private Joint Stock)

- Location: Pars Special Economic / Energy Zone (Phase 2)
- Area: 90 hectares
- Ownership: NPC (20%), Persian Gulf Petrochemical Industries Co. (29.8%), Parsian Oil&Gas Expansion Group (24.9%), Sata (24.9%), Preferred Stock (0.4%),
- Start date (phase 1): 2010
- Projected operation date (phase 1): 2017

### ● Production Capacity (1000 t/y)

Products	Salable	Products	Salable
Electricity	1,900 mw	Service air	20,000 nm3/h
Steam	1,900 t/h	Fresh water	5,000 m3/h
Oxygen	900 t/h	DM water	37,000 m3/h
Nitrogen	70,000 nm3/h	Cooling water	80,000 m3/h
Instrument air	31,000 nm3/h	Potable water	1,500 m3/h



## Applications

Utilities required by the petrochemical process plants in second site of the Special Economic /Energy Zone (Assaluyeh) are supplied by Damavand Petrochemical Co.

License, Basic and Detailed

engineering & Procurement: Mapna (Power Plant)

Physical total progress (as of 20 March 2017): 19.2%

## Feedstock

Feedstock	Capacity	Source
Natural gas	5,776 msm <sup>3</sup> /y	South Pars Oil & Gas Co.
Sea water	380,000 m <sup>3</sup> /h	Persian Gulf

## Pardis Ammonia / Urea (phase3)

Implemented by: Pardis Petrochemical Co. (Private Joint Stock)

- Location: Pars Special Economic / Energy Zone
- Area: 13.5 hectares
- Ownership: Pardis Petrochemical Co. (100%)
- Start date: 2011
- Projected operation date: 2017

### ● Applications

As chemical fertilizer for agricultural purposes



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### Production Capacity (1000 t/y)

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

### Feedstock (msm<sup>3</sup>/y)

Feedstock	Capacity	Source
Natural gas	736	South Pars Oil & Gas Co.

### Feed & Fuel

License: MW Kellog / Stami Carbon

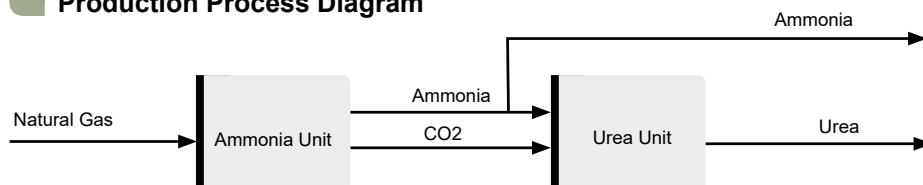
Basic & Detailed Engineering & procurement (Ammonia): Hampa Energy

Basic & Detailed Engineering & procurement (Urea): Stami Carbon

Erection & Construction: Abnieh Fanni and Nardis

Physical progress (as of 20 March 2017): 99.5%

### Production Process Diagram



# Hengam Ammonia/Urea

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%)

● Start date: 2012

● Projected operation date: 2019



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**PETROCHEMICAL  
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## Production Capacity (1000 t/y)

Products	Nominal Capacity	Salable
Ammonia	725	125
Urea	1,075	1,075
Total	1,800	1,200

## Products application

As chemical fertilizer for agricultural purposes





### Feedstock (msm<sup>3</sup>/y)

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

### Feed & Fuel

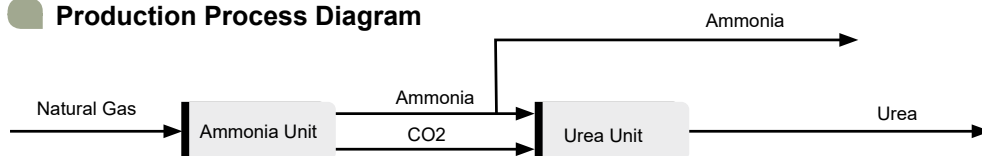
License & basic engineering: Haldor Topsoe / SAIPEM

Detailed engineering, Procurement, Erection, Constuction & Commissioning:

PIDEC, IES (China)

Physical progress (as of 20 March 2017): 40.6 %

### Production Process Diagram







## Styrene Park

- Location: South Pars Special Economic/Energy Zone (Phase 2)
- Area: 39 hectares
- Start date: 2011
- Projected operation date: 2018-2019

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 built in the Styrene Park:**

Polystyrene of Entekhab Industrial Group (Brought onstream in 2016)  
Polystyrene of Dalahoo Kimiya Industry Co.  
ABS & LCBR/ SB/ SBS of Jam Petrochemical Co.  
EBSR of Sadaf Chemical Co. of Assaluyeh

# EPS

Implemented by: Dalahoo Kimiya Industry Co. (Private Joint Stock)

- Location: South Pars Special Economic / Energy Zone (Phase 2)
- Area: 3.75 hectares
- Ownership: Private Sector (100%)
- Start date: 2011
- Projected operation date: 2018 & 2019 (To be implemented in 2 phases)



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PETROCHEMICAL  
PROJECTS

## Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
EPS	120	120

## Applications

Production of home appliances, packing industry, electrical insulation

## Feedstock (1000 t/y)

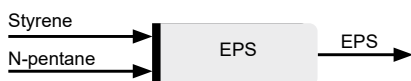
Feedstock	Capacity	Source
Styrene	116	Pars Petrochemical Co. / Other Resources
Normal Pentane	10	Petrosanat Naftalyan Co. of Assaluyeh

License & basic engineering: Styrochem (Finland)

Erection & Construction: Tabriz Petrochemical Co., Firmko

Physical progress (as of 20 March 2017): 81.7%

## Production Process Diagram



# SBS, SB, LCBR & ABS

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%)
- Start date: 2010
- Projected operation date: 2019



**Applications**  
Production of auto parts, home appliances

## Production Capacity (1000 t/y)

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

## Feedstock (1000 t/y)

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

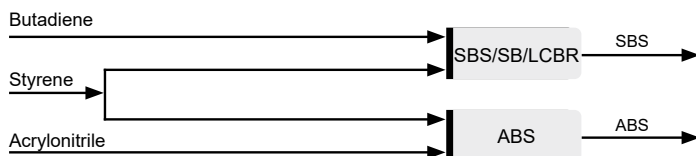
License: Versalis

EPCC: Tecnimont /Nargan

Erection & Construction: Jondi shapour

Physical progress (as of 20 March 2017): 33.5%

## Production Process Diagram



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# 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 (95.1%),  
Other Shareholders (2%), Hezareh Sevom Investment (2.9%),

● **Start date:** 2010

● **Projected operation date:** 2018

## ● Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
ESBR	136	136

## ● Applications

Production of tires, cable and wire coverage

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## Feedstock (1000 t/y)

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

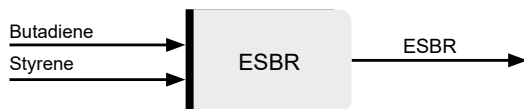
License: Versalis (Italy)

Basic & detailed engineering & procurement: Tecnimont/ Nargan

Civil, construction, installation & precommissioning: ECC

Physical progress (as of 20 March 2017): 45.5%

## Production Process Diagram



# Marjan Methanol

Implemented by: Marjan Petrochemical Co. (Private Joint Stock)

- Location: Pars Special Economic / Energy Zone (Phase 2)
- Area: 7 hectares
- Ownership: Shasta (49%), Fanavaran Petrochemical Co. (17%), Tamin Oil, Gas & Petrochemical Investment (17%), Other Shareholders (17%)
- Start date: 2011
- Projected operation date: 2017

## Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
Methanol	1,650	1,650

## Applications

Production of MTBE (a gasoline additive which boosts the octane levels), acetic acid, solvents, resins, formaldehyde, anti-freeze, various types of plastics, DME, MTP and MTO



## Feedstock (msm<sup>3</sup>/y)

Feedstock	Capacity	Source
Natural gas	1,650	South Pars Oil & Gas Co.
Oxygen	671	Damavand Petrochemical Co.

Feed & Fuel

License & basic engineering: Haldor Topsoe (Denmark)  
Detailed engineering & procurement: Namvaran / CCEC  
Physical progress (as of 20 March 2017): 90%

## Production Process Diagram





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## Sabalan Methanol

Implemented by: Sabalan Petrochemical Company (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%)
- Start date: 2011
- Projected operation date: 2018

### Production Capacity (1000 t/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<sup>3</sup>/y)

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

### Feed & Fuel

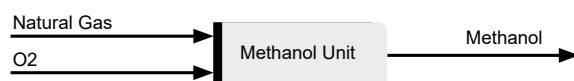
License & basic engineering: Holder Topsoe (Denmark)

Engineering & Procurement: PIDEK

Physical progress (as of 20 March 2017): 47.6%



### Production Process Diagram



# Middle East Kimiya Pars Methanol

Implemented by: Middle East Kimiya Pars Company (Private Joint Stock)

- Location: South Pars Special Economic / Energy Zone (Phase 2)
- Area: 7.48 hectares
- Ownership: Petro Farhang (84.1%), International Middle East Persian Industry Co. (10.8%), Other Shareholders (5.1%)
- Start date: 2014
- Projected operation date: 2019

## Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
Methanol	1,650	1,650

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PROJECTS**



## 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<sup>3</sup>/y)

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

## Feed & Fuel

License & basic engineering: Holder Topsoe (Denmark)

Detailed engineering, procurement, Constuction & commissioning: TCC

Physical progress (as of 20 March 2017): 29.6%

## Production Process Diagram



# Bushehr Olefin and Methanol (16th Olefin)

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%)
- Start date: 2012
- Projected operation date: 2017 & 2019 (To be Implemented in 2 phases)



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## Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
Methane*	1,323	-
Ethane*	850	-
Ethylene	1,000	385
C3+ cuts	88	88
Methanol*	1,650	1,488
Sulfur*	125	125
EG	554	554
LLDPE/HDPE	300	300
Acetic acid	300	300
Propane*	130	130
Butane*	30	30
Pentane*	3	3
<b>Total</b>	<b>6,353</b>	<b>3,403</b>

\* Phase 1 Production



## Applications

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

License: Casale (Methanol), TKT (Sweetening unit), HDPE

Engineering & procurement: Nargan, IPIP, Casale, PIDEDEC, EIED, Nardis

Construction Contractors: Sokaf, Azar Simab, Kandovan Pars, Zamiran, Asphalt Toos & Kason

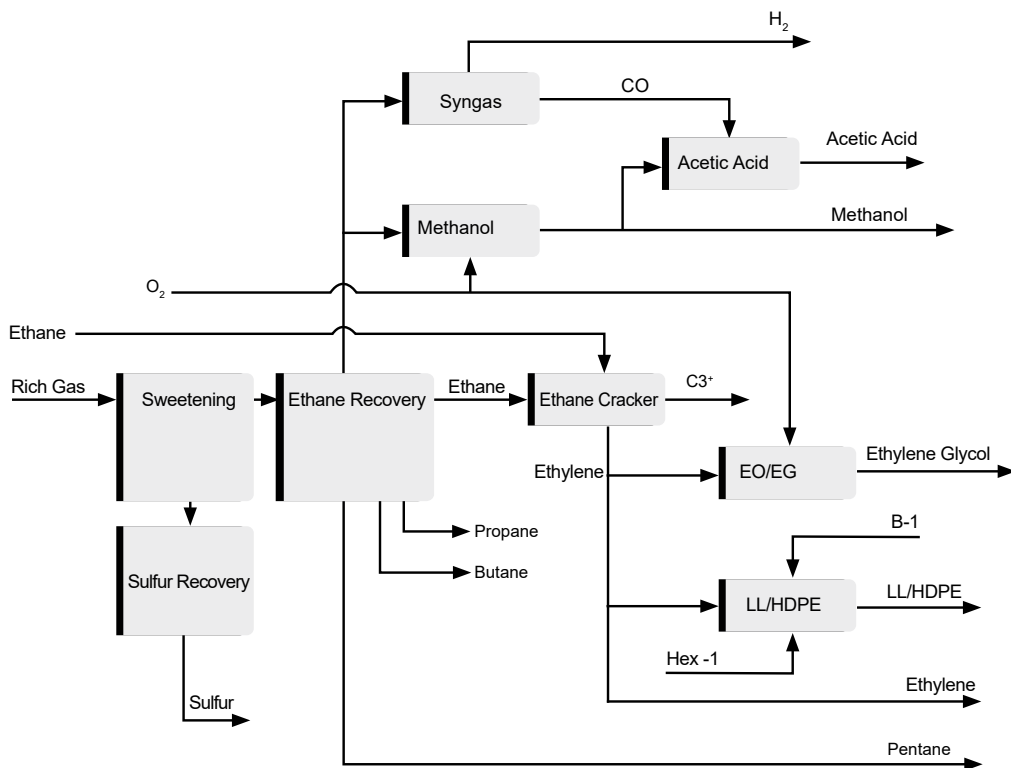
Physical progress of phase 1 (as of 20 March 2017): 40.8%

## Feedstock

Feedstock	Capacity	Source
Rich sour gas	3028 msm <sup>3</sup> /y	South Pars Oil & Gas Co.
Oxygen	801 msm <sup>3</sup> /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 Block Diagram



## Kian Olefin (12th Olefin)

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%)

Start date: 2012

Projected operation date: 2020

### Production Capacity (1000 t/y)

Input Feed	Nominal Capacity	Salable
Ethylene	1,200	868
Propylene	327	167
C4 cut	294	--
Fuel Oil	26	26
Heavy ends	1,089	1,089
Benzene	382	33
Paraxylene	528	528
Orthoxylene	90	90
Heavy aromatics	25	25
Ethyl Benzene	476	--
Styrene	440	440
Linear Alfa Olefin	200	200
Propylene Oxide	200	200
Butadiene	130	130
Raffinate	160	160
<b>Total</b>	<b>5,567</b>	<b>3,956</b>



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### Applications

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

### Feedstock (1000 t/y)

Input Feed	Capacity	Source
Naphta	1300	Siraf Refineries
Light cuts	340	Nouri (Borzuyeh) Petrochemical Co.
C3+	315	Kavian, Morvarid & Bushehr Petrochemical Cos.
Ethane	900	South Pars Oil & Gas Refinery (Phase 14)

Physical progress (as of 20 March 2017): Preliminary stage





## Propane Dehydrogenation & PP (PDH/PP)

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%)

● Start date: 2012

● Projected operation date: 2020

### ● Production Capacity (1000 t/y)

Products	Nominal Capacity	Salable
Propylene	450	--
Polypropylene	450	450
Total	900	450

### ● Applications

Production of films, home appliance, auto parts, wire, cables, pipe fittings,...

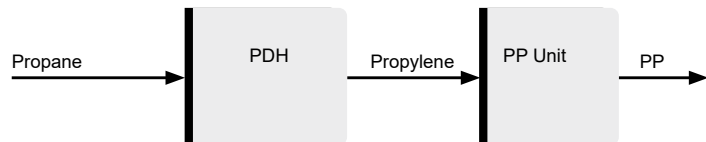


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### Feedstock (1000 t/y)

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

### Production Process Block Diagram



License: Uhde (PDH), Mitsui (PP)  
Basic engineering: DAELIM / Uhde  
Detailed engineering, procurement, civil,  
construction, installation & precommissioning: Sazeh  
Physical progress (as of 20 March 2017):16.1%



# 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. (70%), Private Person (30%)

Start date: 2014

Projected operation date: 2019



## Applications

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

## Production Capacity (1000 t/y)

Products	Nominal Capacity	Salable
MEG	500	500
DEG	50	50
TEG	4	4
Total	554	554

## Feedstock (1000 t/y)

Feedstock	Capacity	Source
Ethylene	340 (1000t/y)	Bushehr Petrochemical Co.
Oxygen	266 (msm <sup>3</sup> /y)	Damavand Petrochemical Co.

Detailed engineering & procurement: PIDEC & ECEC (China)

Physical progress (as of 20 March 2017): 24.3%

## Production Process Diagram



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## Assaluyeh Centralized Storage Tanks

Implemented by: Assaluyeh Green Tank Farm Petrochemical Co.

● Location: South Pars Special Economic / Energy Zone (Phase 2)

● Area: 46.7 hectares

● Ownership: Private Sector (100%)

● Start date: 2011

● Projected operation date: 2018 - 2019

● Total capacity: 320,000 m<sup>3</sup>

### ● Purpose of the project:

Storage of petrochemical products for export

Physical progress (as of 20 March 2017): 33%



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PETROCHEMICAL  
PROJECTS



PROJECTS  
IN **OTHER**  
**REGIONS**





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## Ilam Olefin (13<sup>th</sup> Olefin)

Implemented by: Ilam Petrochemical Co. (Private Joint Stock)

- Location: Ilam
- Area: 122 hectares
- Ownership: Iranian Investment Petrochemical Group (47.2%), Tamin Oil, Gas & Petrochemical Investment (17%), Civil Pension Fund Investment (17%), IPCC (3.8%), Marun Petrochemical Co. (6.8%), Other Shareholders (8.2%)
- Start date: 2007
- Projected operation date: 2018



## Production Capacity (1000 t/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 (1000 t/y)

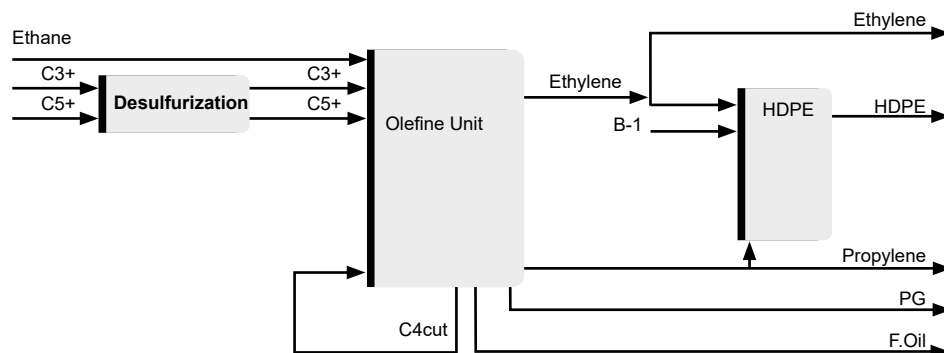
Feedstock	Capacity	Source
Ethane	233	Ilam Gas Refinery
C3+ cuts	328	Ilam Gas Refinery
C5+ cuts	391	Ilam Gas Refinery

License: Stone & Webster (Olefin), Axens (Desulphurisation)

Contractors of EPCC: Bina / Steam / Nargan / EIED

Physical progress (as of 20 March 2017): 79.8%

## Production Process Diagram





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## Hamedan PVC

Implemented by: Hegmataneh Petrochemical Co. (Private Joint Stock)

- Location: Hamedan
- Area: 15 hectares
- Ownership: NPC (32%) Private Persons (57%), IGS Co. of Italy (10%), Iran Petrochemical Commercial Co. (IPCC) (1%)
- Start date: 2003
- Projected operation date: 2018

### ● Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
PVC (Powder - Medical grade)	39	34
PVC (Granule - Medical grade)	9	9
<b>Total</b>	<b>48</b>	<b>43</b>

### ● Applications

Medical equipments including blood packs, artificial veins, oxygen masks, food packing industries,...



### Feedstock (1000t/y)

Feedstock	Capacity	Source
VCM	40	Ghadir & arvand Petrochemical Co.

License & basic engineering: IGS of Italy

Basic engineering & procurement: Tondok Engineering Co. & ICC of Italy

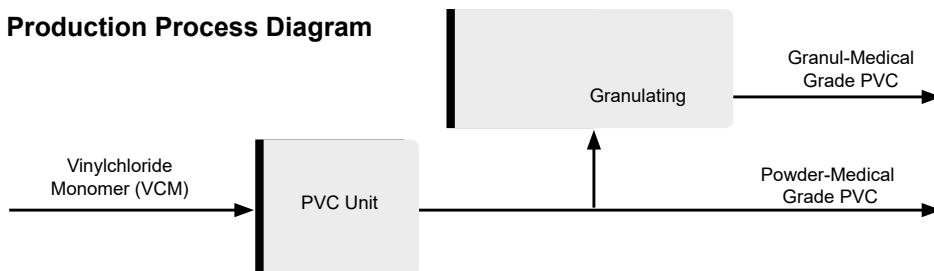
Construction: Ekbatan Sakhteman

Installation and precommissioning contractors: Petro Sanat Ghaem Co.

Physical progress (as of 20 March 2017): 88.5%



### Production Process Diagram



## West Ethylene Pipeline & DENA Region

Implemented by: Petrochemical Industries

Development Management Co.(Private Joint Stock)

- Location: West of Iran (From Assaluyeh to Tabriz)
- Start date: 2004
- Projected operation date: 2012-2017 \*
- 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: 2017

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**PETROCHEMICAL  
PROJECTS**



## Purpose of the project

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

## Subordinates

Bakhtar Consumer and Other Companies <sup>(1)</sup>	Dena Consumer
Kermanshah Polymer <sup>(2)</sup>	—
Lorestan <sup>(3)</sup>	Mamasani
Kordestan <sup>(4)</sup>	Dehdasht
Mahabad <sup>(5)</sup>	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 2017

5) Brought onstream in 2016

Conceptual design Consultant: Technip, Nargan

Detailed & basic engineering: Energy Paidar Engineering & Expansion Co.

Pipeline contractors: Omran Sazan, Sahand Azar, Asphalt Toos, Iran Pipeline, Bornak, Iran Ertebat, Rampco, Sat, Sahand Sazeh Alborz, Marun Mechanic

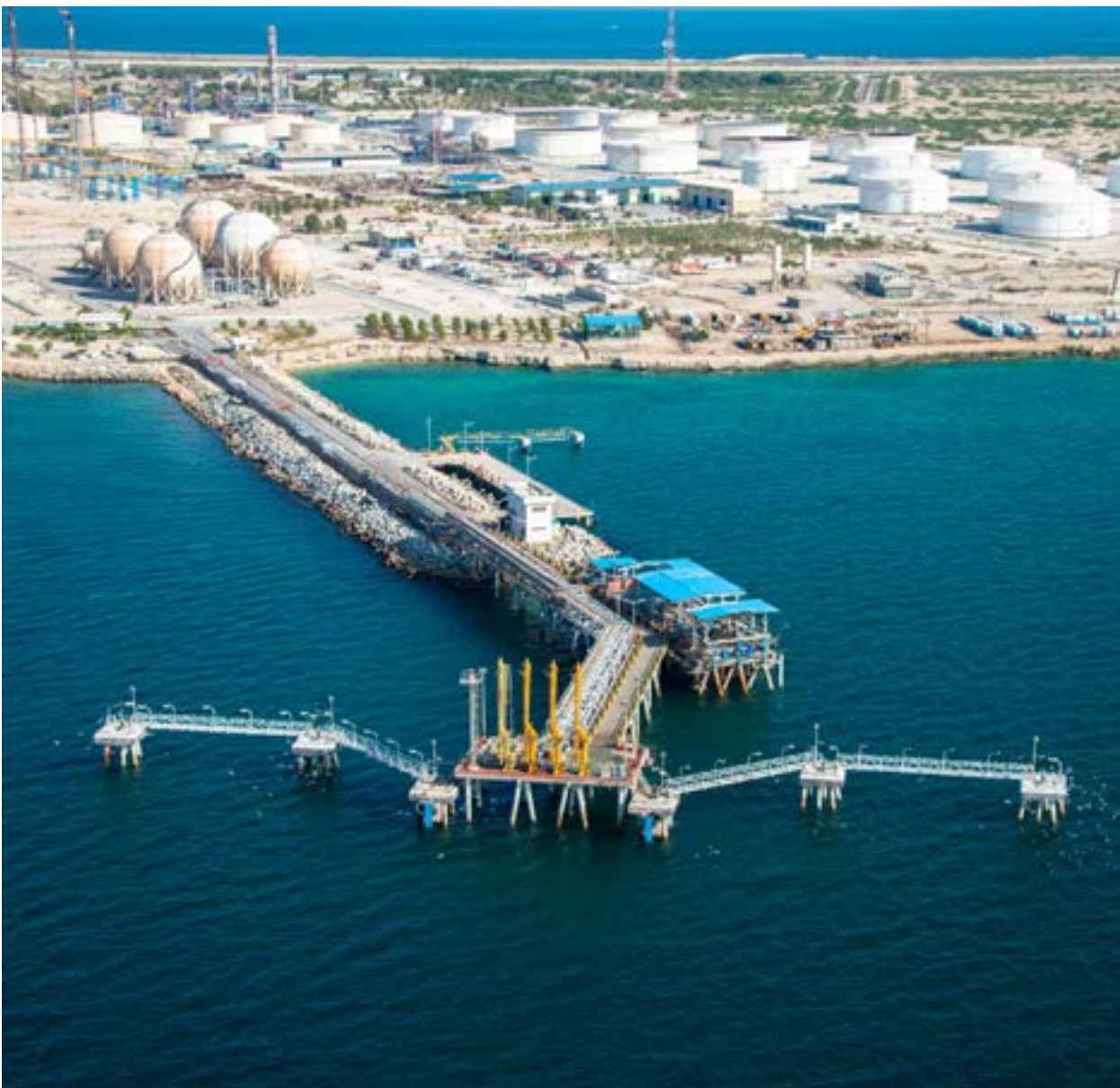
Physical progress (as of 20 March 2017): 81.7%





# The Core Values of National Petrochemical Company

Value Creation   Accountability   Commitment to the Sustainable Development



# Andimeshk LDPE

Implemented by: Andimeshk Petrochemical Co. (Private Joint Stock)

- Location: Andimeshk
- Area: 158 hectares
- Ownership: Bakhtar Petrochemical Co. (60%), Saderfar (20%), Poshineh Methanol (20%)
- Start date: 2011
- Projected operation date: 2019



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## Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
LDPE	300	300

## Applications

As Feedstock for production of polyethylene films, polyethylene foams, Cable & wire coating, plastic parts,...

## Feedstock (1000 t/y)

Feedstock	Capacity	Source
Ethylene	311	West Ethylene Pipeline

License: Basell

Basic & detailed engineering & procurement: Nargan, Tecnimont of Italy

Physical progress (as of 20 March 2017): 6.8%

## Production Process Diagram



# Miandoab HDPE

Implemented by: Miandoab Petrochemical Co. (Private Joint Stock)

- Location: Miandoab
- Area: 22 hectares
- Ownership: Bakhtar Petrochemical Co. (100%)
- Start date: 2013
- Projected operation date: 2018



## Applications

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

## Production Capacity (1000 t/y)

Products	Capacity	Salable
HDPE	140	140

## Feedstock (1000 t/y)

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

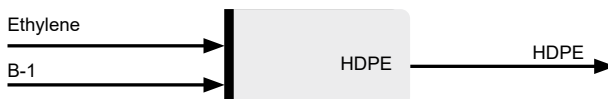
License: Basell

Engineering & procurement: PIDEDEC

Civil & construction: Bamdad Zندهroud Co, Tarakom Co, Sakhtar Sanat Paidar

Physical progress(as of 20 March 2017): 31.5%

## Production Process Diagram



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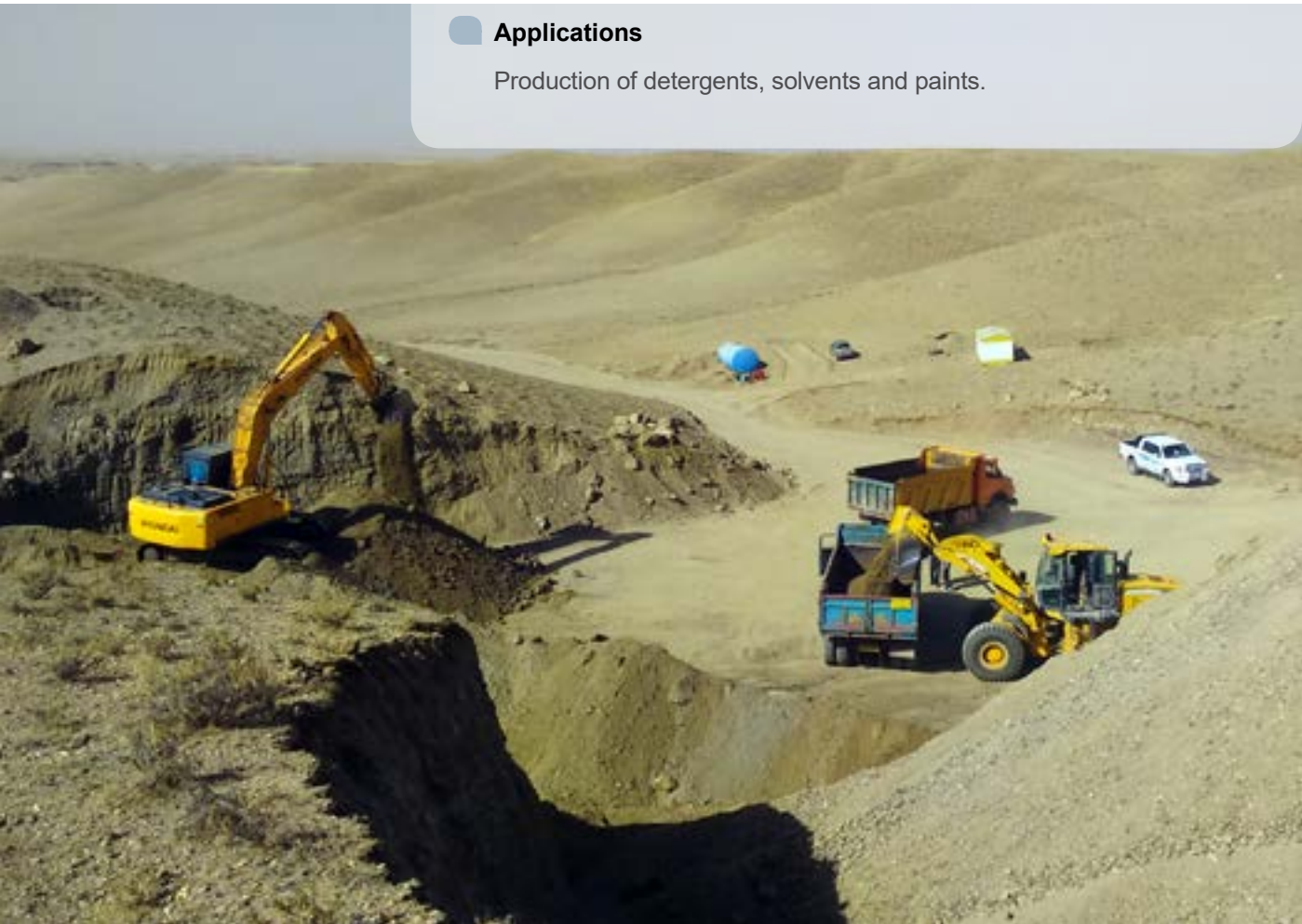
## Hamedan Ethoxylates

Implemented by: Ibn-e-Sina Hamedan Petrochemical Co.

- Location: Hamedan
- Area: 31 hectares
- Ownership: NPC (20%), Hami iranian Steel Co. (74%), Private Person (6%)
- Start date: 2013
- Projected operation date: 2020

### Applications

Production of detergents, solvents and paints.





## Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
EO	100	2
Ethoxylates	80	80
Glycol Ether	50	50
MEA/MDEA	30	30
MEG	6	6
Total	266	168

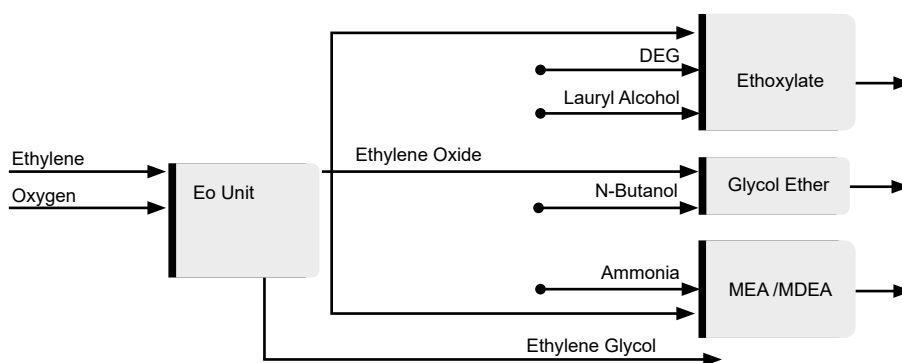
## Feedstock (1000t/y)

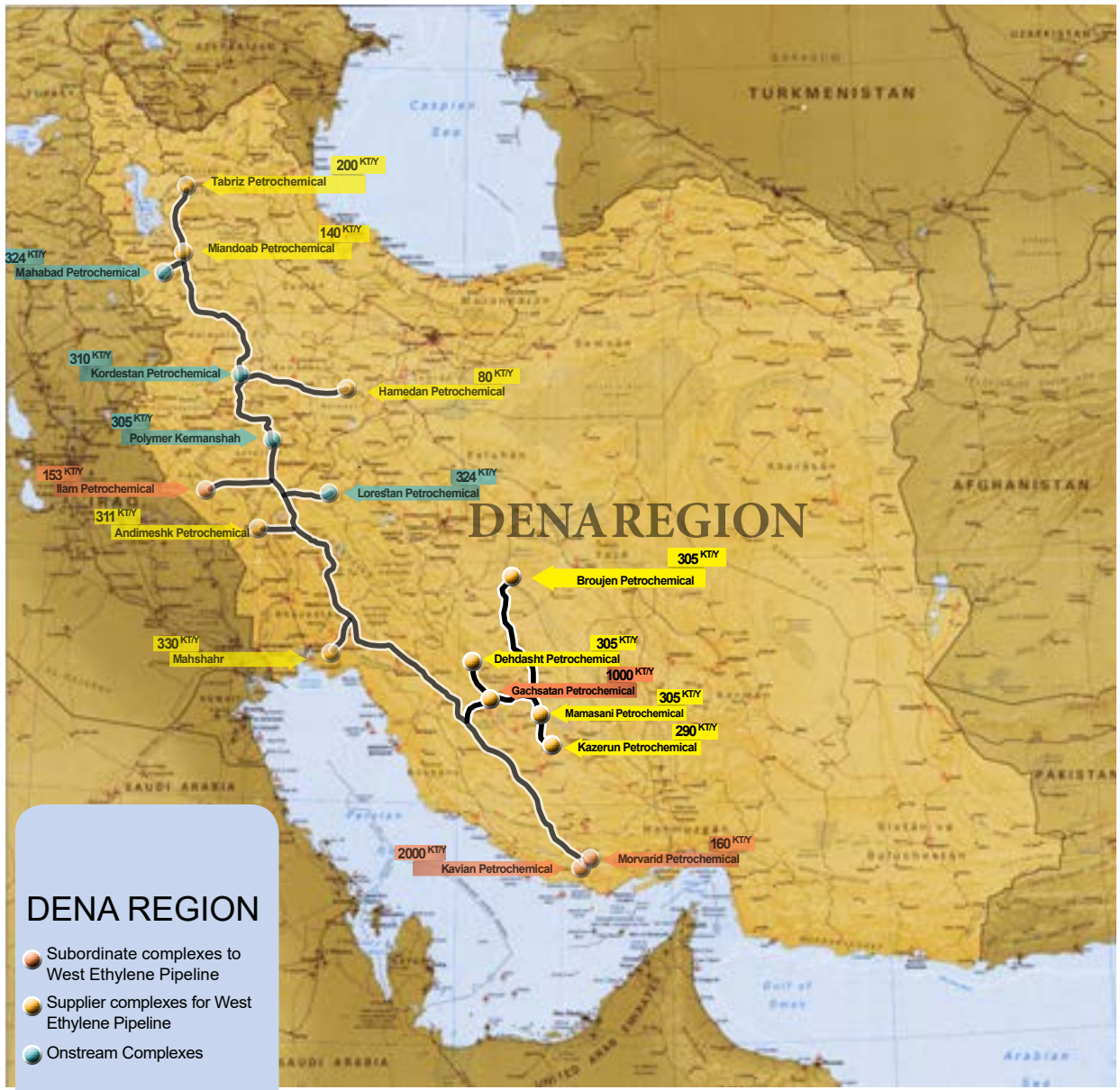
Feedstock	Capacity	Source
Ethylene	80	West Ethylene Pipeline
Normal Butanol	30	Arak Petrochemical Co. & Other resources
Greasy Alcohol	28	Import
Ammonia	6	Kermanshah Petrochemical Co.

Basic engineering (Ethylene Oxid): Kamel Karan Engineering Co.

Physical progress (as of 20 March 2017): 6.3%

## Production Process Diagram







## Gachsaran Olefin (8<sup>th</sup> Olefin)

Implemented by: Gachsaran Petrochemical Co. (Private Joint Stock)

- Location: Gachsaran
- Area: 157 hectares
- Ownership: Kazeroun Petrochemical Co (20.9%) Mamasani Petrochemical Co. (20.9%), Dehdasht Petrochemical Co. (19.8%), Boroujen Petrochemical Co. (17.5%), Iranian Investment Petrochemical Group (10%), Saderat Bank (6.8%), Tose-eh Insurance (4.1%)
- Start date: 2010
- Projected operation date: 2019

### ● Production Capacity (1000 t/y)

Products	Nominal Capacity	Salable
Ethylene	1,000	1,000
C3+	90	90
<b>Total</b>	<b>1,090</b>	<b>1,090</b>



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### Applications

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

### Production Capacity (1000 t/y)

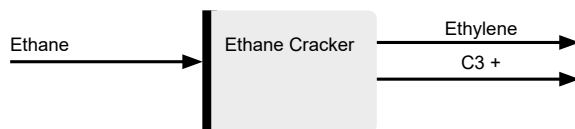
Feedstock	Capacity	Source
Ethane	1,250	2 <sup>nd</sup> Bid Boland Project

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 2017): 32.6%

### Production Process Diagram





## Kazeroun HDPE / LLDPE

Implemented by: Kazeroun Petrochemical Co (Public Joint Stock).

- Location: Kazeroun
- Area: 53 hectares
- Ownership: Iranian Investment Petrochemical Group (60.4%), Shadan Shahr Bakhtar (12%), Other Shareholders (27.6%)
- Start date: 2013
- Projected operation date: 2020

### ● Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
HDPE / LLDPE	300	300

### ● Applications

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



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\* 20 thousand tons Nodan Polyacetal project is also under processing by Kazeroun Petrochemical Co.. Feedstock of this project includes 22 thousand tons of formaldehyde (37%), 700 tons of ethylene glycol and 90 tons of butadiene per year from local source.

### Feedstock (1000t/y)

Input Feed	Capacity	Source
Ethylene	290	West Ethylene Pipeline (Gachsaran Petrochemical Co.)
Butene-1	24	Petrochemical Complexes

Engineering, procurement, Erection & Construction: AVIC / HFEC

Physical progress (as of 20 March 2017): 1.9%

### Production Process Diagram



# Mamasani HDPE

Implemented by: Mamasani Petrochemical Co. (Public Joint Stock)

● Location: Mamasani

● Area: 67 hectares

● Ownership: Petrochemical Commercial Co. (8.33%), Iranian Petrochemical Investment Group (50.13%), Dolfin Petrochemical (6.43%), Other Shareholders (34.87%)

● Start date: 2012

● Projected operation date: 2020



## ● Production Capacity (1000 t/y)

Products	Nominal Capacity	Salable
HDPE	300	300

## ● Applications

Production of pipes, bottles, film, home appliances, industrial parts, sewage pipes, handbags,...

## ● Feedstock (1000 t/y)

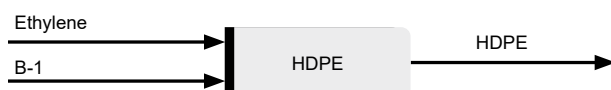
Feedstock	Capacity	Source
Ethylene	305	West Ethylene Pipeline (Gachsaran Petrochemical Co.)
Butene-1	3	Petrochemical Complexes

License & basic engineering: Basell

Detailed engineering, procurement, installation & construction: AVIC / HFEC

Physical progress (as of 20 March 2017): 6.1%

## ● Production Process Diagram



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## Dehdasht HDPE

Implemented by: Dehdasht Petrochemical Industries Co. (Public Joint Stock)

- Location : Dehdasht, Kalachou Desert
- Area: 102 hectares
- Ownership: NPC (19.87%), Iranian Investment Petrochemical Group (52.4%), Tose-eh Insurance (9.3%), Mehr Avaran Kouyeh Naroun (7.34%), Mamasani Petrochemical Co. (7.7%), Other Shareholders (23.1%), Industries Development Iranian Petrochemical Group (7.5%)
- Start date: 2012
- Projected operation date: 2020

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PETROCHEMICAL  
PROJECTS

### Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
HDPE	300	300

### Applications

Production of various plastics, pipes, bottles, films, industrial parts & home appliances

### Feedstock (1000 t/y)

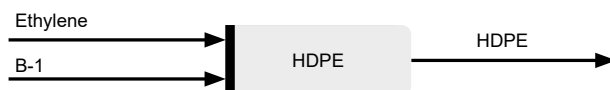
Feedstock	Capacity	Source
Ethylene	305	West Ethylene Pipeline (Gachsaran Petrochemical Co.)
Butene-1	5	Petrochemical Complexes

License & basic engineering: Basell

Detailed engineering, procurement, installation & construction: AVIC / CNEEC

Physical progress (as of 20 March 2017): 4.25%

### Production Process Diagram







# Boroujen HDPE

Implemented by: Boroujen Petrochemical Co.(Private Joint Stock)

- **Location:** Halvaie Desert of Boroujen
- **Area:** 100 hectares
- **Ownership:** Iranian Investment Petrochemical Group (40.5%), Mamasani Petrochemical Co. (18.40%), Dehdasht Petrochemical Co. (13.1%), Modabberane Eghtesad (11%), Other Shareholders (17%)
- **Start date:** 2012
- **Projected operation date:** 2020

## Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
HDPE	300	300

## Applications

production of pipes, bottles, containers, film, industrial parts & home appliances

## Feedstock (1000 t/y)

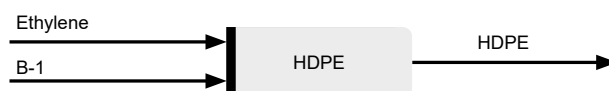
Feedstock	Capacity	Source
Ethylene	305	West Ethylene Pipeline (Gachsaran Petrochemical Co.)
Butene-1	3	Petrochemical Complexes

License & basic engineering: Basell

Detailed engineering, procurement, installation & construction: CNEEC / HFEC

Physical progress (as of 20 March 2017): 5%

## Production Process Diagram



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# Central Ethane-Ethylene Pipeline

Implemented by: National Petrochemical Company

- Location: Fars Province
- No. of complexes: 5
- Start date: 2013
- Projected operation date: 2020
- No. of Ethane pump station: 1
- No. of Ethylene pump station: 1
- Ethane pipeline capacity: 1.4 million t/y
- Ethylene pipeline capacity: 1 million t/y
- Overall Ethane pipeline length: 238 km
- Overall main trunk & branches of ethylene pipeline length: 297 km
- Smallest pipe size: 6 inch
- Largest pipe size: 24 inch



## Purpose of the project:

Transferring ethane from Parsian Refinery to Firouz Abad petrochemical project and also transferring ethylene to Jahrom, Fasa, Darabad and Estahban complexes to provide Feedstock for petrochemical projects.

## Projects




Project	production	capacity ('000t/y)
Firozabad	Ethylene/c <sup>3+</sup> cuts	1,090
Jahrom	LL/HDPE	300
Fasa	LDPE	300
Darab	HDPE	300
Estahban	VAM	100

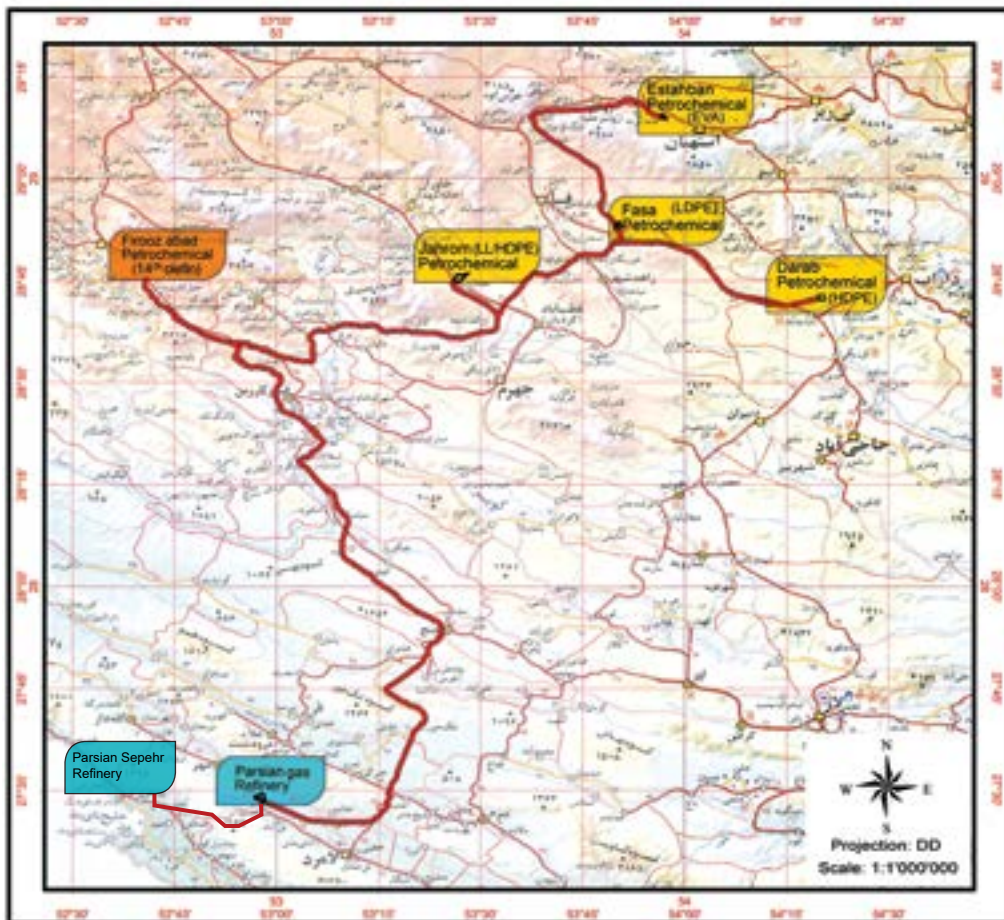
Conceptual design and basic engineering consultant: Energy Petro Farayand Co.

Detailed engineering, implementation & procurement: Khatam-ol-Anbia (Implemented by: Niroo Gostar Institute, Consultant: Energy Gostar Consulting Engineers)

Physical progress (as of 20 March 2017): 23%



-  Consumer complexes of central ethylene pipeline
-  Supplier complexes to central ethylene pipeline
-  Supplier complexes to central ethane pipeline





## Firouzabad Olefin (14<sup>th</sup> Olefin)

Implemented by: Firouzabad Petrochemical Company (Private Joint Stock)

- Location: 12th km of Firouzabad-Ghir Road in Jaidasht
- Area: 160 hectares
- Ownership: NPC (13%), Jahrom Petrochemical Co. (27%), Fasa Petrochemical Co. (30%), Darab Petrochemical Co. (30%)
- Start date: 2012
- Projected operation date: 2020

### Production Capacity (1000 t/y)

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

### Applications

Raw material in production of polyethylenes and ethylene vinyl acetate

### Feedstock (1000 t/y)

Feedstock	Capacity	Source
Ethane	1,300	Parsian Sepehr Refinery

Basic engineering: Nargan

Detailed engineering, installation & construction & procurement: Khatamol Anbiya

Physical progress (as of 20 March 2017): 12.8%

### Production Process Diagram



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## Jahrom LLDPE/HDPE

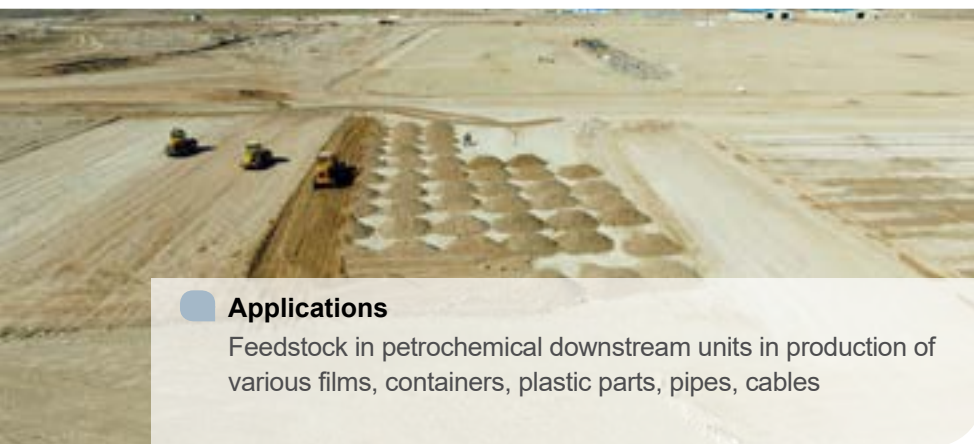
Implemented by: Jahrom Petrochemical Company (Public Joint Stock)

- Location : 37<sup>th</sup> km of Jahrom - Shiraz Road
- Area: 200 hectares
- Ownership: Saderat Bank (19.88%), Firouzabad Petrochemical Co. (18.75%), Mahd-e-Omid Aryan Investment (43.56%), Other Shareholders (17.82%)
- Start date: 2012
- Projected operation date: 2020



## Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
LLDPE/HDPE	300	300



## Applications

Feedstock in petrochemical downstream units in production of various films, containers, plastic parts, pipes, cables

## Feedstock (1000 t/y)

Feedstock	Capacity	Source
Ethylene	290	Central Ethylene Pipeline (Firouzabad Petrochemical Co.)
Butene-1	24	Petrochemical Complexes

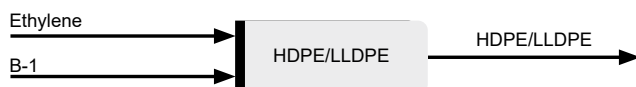
License & basic engineering: Getech

Detailed engineering, procurement, installation & construction:

Khatamol Anbia

Physical progress (as of 20 March 2017): 11.8%

## Production Process Diagram



## Fasa LDPE

Implemented by: Fasa Petrochemical Company (Public Joint Stock)

- Location: 20th km Fasa- Darab Road
- Area: 120 hectares
- Ownership: Saderat Bank (19.87%), Firouzabad Petrochemical Co. (18.16%), Mahd-e-Omid Aryan Investment Co. (44.92%), Other Shareholders (17.05%)
- Start date: 2012
- Projected operation date: 2020

### Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
LDPE	300	300

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PETROCHEMICAL  
PROJECTS





## Applications

Feedstock in petrochemical downstream units in production of various polyethylene films & foams, cable coatings, plastic parts

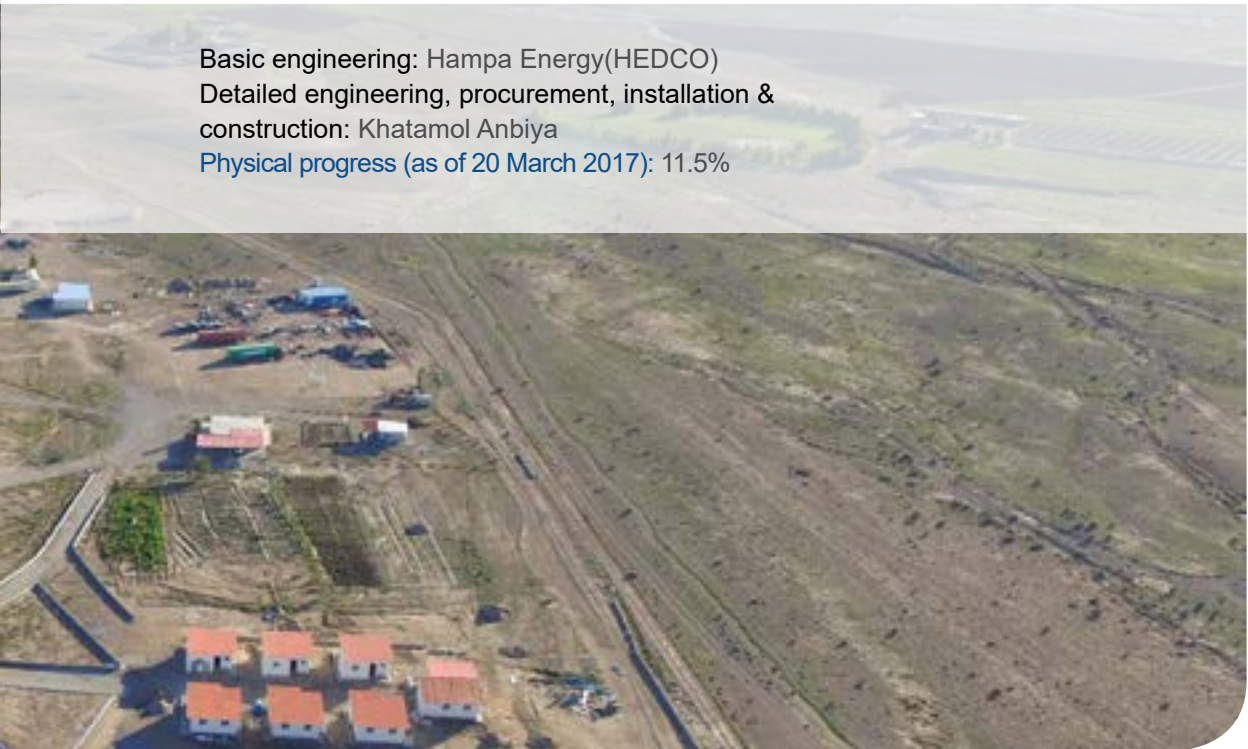
## Feedstock (1000 t/y)

Feedstock	Capacity	Source
Ethylene	310	Central Ethylene Pipeline <sup>(Firouzabad Petrochemical Co.)</sup>
Propylene	2	Local sources

## Production Process Diagram



Basic engineering: Hampa Energy(HEDCO)  
Detailed engineering, procurement, installation & construction: Khatamol Anbiya  
Physical progress (as of 20 March 2017): 11.5%



# Darab HDPE

Implemented by: Darab Petrochemical Company (Public Joint Stock)

- Location : 18th km Darab-Shiraz Road
- Area: 120 hectares
- Ownership: Saderat Bank (19.89%), Mahd-e-Omid Aryan Investment Co. (59.37%), Other Shareholders (20.75%).
- Start date: 2012
- Projected operation date: 2020



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+98 71-36269053

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**PETROCHEMICAL  
PROJECTS**

## Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
HDPE	300	300

## Applications

Feedstock in petrochemical downstream units in production of various pipes, plastic parts, cables,...

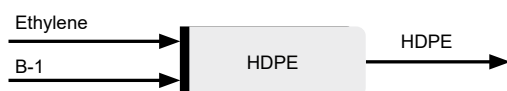
## Feedstock (1000 t/y)

Feedstock	Capacity	Source
Ethylene	305	Central Ethylene Pipeline (Firouzabad Petrochemical Co.)
Butene-1	5	Petrochemical Complexes

Detailed engineering, procurement, installation & construction: Khatamol Anbiya

Physical progress (as of 20 March 2017): 13%

## Production Process Diagram



# Estahban EVA

- Location: Estahban
- Area: 236 hectares
- Start date: 2014
- Projected operation date: 2020

## Production Capacity (1000 t/y)

Products	Nominal Capacity	Salable
EVA	100	100

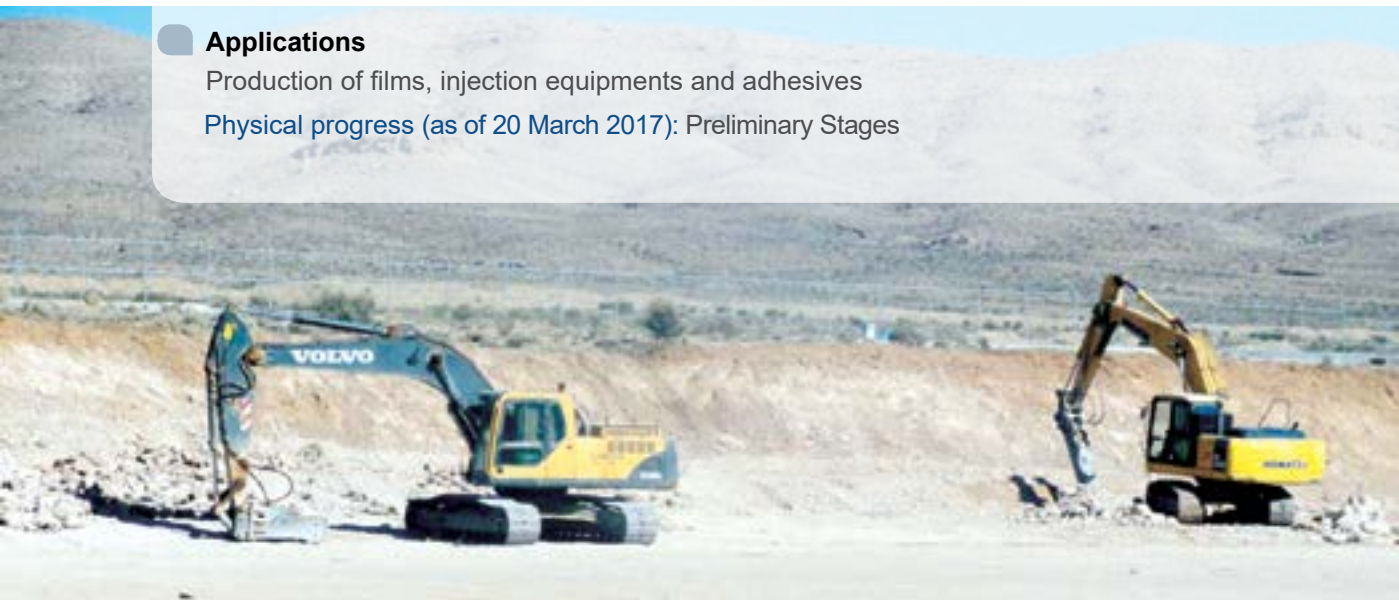
## Feedstock (1000 t/y)

Feedstock	Capacity	Source
Ethylene	115	Central Ethylene Pipeline (Firouzabad Petrochemical Co.)
VAM	13.5	Shazand Petrochemical Co.

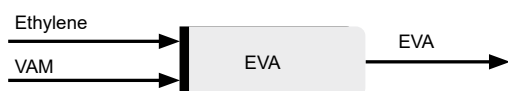
## Applications

Production of films, injection equipments and adhesives

Physical progress (as of 20 March 2017): Preliminary Stages



## Production Process Diagram





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**PETROCHEMICAL  
PROJECTS**



## 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 (78.4%), Saderat Bank Investment (7.4%), Other Shareholders (14.2%)
- Start date: 2007
- Projected operation date: 2018

### Production Capacity (1000 t/y)

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

### Applications

Production of chemical fertilizer for agricultural usages



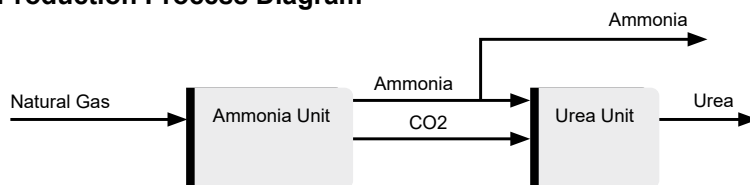
### Feedstock (msm<sup>3</sup>/y)

Feedstock	Capacity	Source
Natural gas	905	NIGC

### Feed & Fuel

License: Ammonia Casale (Ammonia), Stami Carbon (Urea)  
 Engineering, procurement, installation & construction (EPEC): Hampa Co.  
 Physical progress (as of 20 March 2017): 61.7%

### Production Process Diagram





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## Olefin & Ethylene Glycoles of Genaveh-Dashtestan (15<sup>th</sup> Olefin)

Implemented by: Genaveh - Dashtestan Petrochemical Company (Private Joint Stock)

- Location: Genaveh & Dashtestan-Boushehr
- Ownership: Sepehr Energy Co. (99.6%), Other Shareholders (0.4%)
- Start date: 2013
- Projected operation date: 2020



## Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
Ethylene	500	160
MEG	500	500
DEG	50	50
TEG	4	4
C3 <sup>+</sup> cut	45	45
<b>Total</b>	<b>1,099</b>	<b>759</b>

## Applications

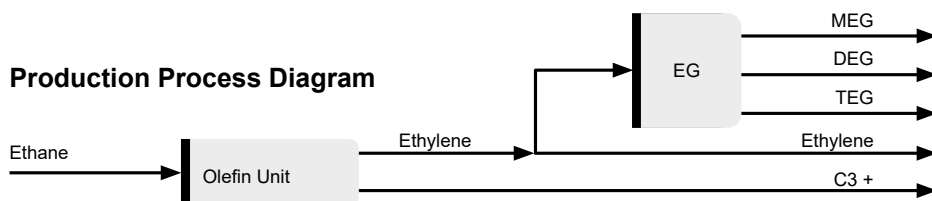
Production of polyethylene, PET, anti-freeze, textile, moisture-absorbent in refineries,...

## Feedstock (1000t/y)

Feedstock	Capacity	Source
Ethane	650	Kharg NGL Project

Physical progress (as of 20 March 2017): 1.2%

## Production Process Diagram





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+98 21-22690796

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**PETROCHEMICAL  
PROJECTS**



## Khomein Polypropylene

Implemented by: Di Arya Polymer Company (Private Joint Stock)

- Location: Khomein
- Area: 57 hectares
- Ownership: Private Sector (100%)
- Start date: 2014
- Projected operation date: 2018

### Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
Polypropylene	175	175

### Applications

Production of home appliances, stationeries, packing, machine equipments





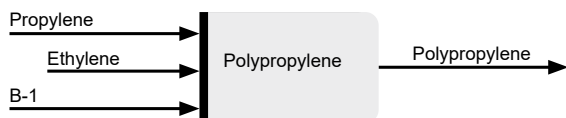
### Feedstock (1000t/y)

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

License & basic engineering: Basell

Detailed engineering, procurement, installation & construction: Nargan

### Production Process Diagram





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**PETROCHEMICAL  
PROJECTS**

## Dehloran Olefin (17<sup>th</sup> Olefin)

Implemented by: Dehloran Sepehr Petrochemical Industry Co. (Private Joint Stock)

- Location: Dehloran-Ilam
- Area: 200 hectares
- Ownership: NPC (10%), Iran Oil Pension Fund Investment Co. (90%)
- Start date: 2014
- Projected operation date: 2020



## Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
Ethylene	500	198
Propylene	81	81
Pyrolysis gasoline	64	64
Fuel Oil	15	15
HDPE	300	300
<b>Total</b>	<b>960</b>	<b>658</b>

## Applications

Feedstock for polypropylene units, for production of various films, polyethylene foam, cable coatings.

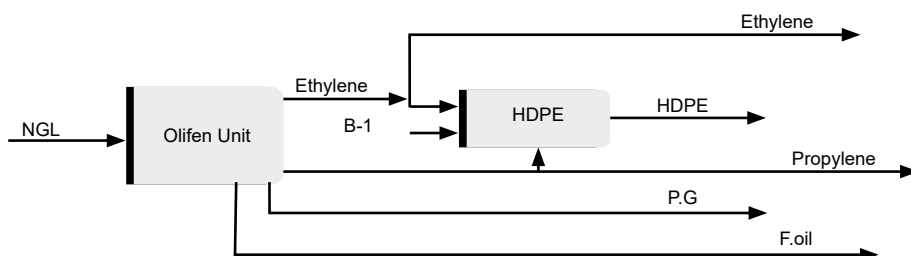
## Feedstock (1000 t/y)

Feedstock	Capacity	Source
NGL	860	NGL 3100
Butene-1	5	Petrochemical complexes

Detailed engineering & procurement: LIAONING / AVIC / HFEC

Physical progress (as of 20 March 2017): 3.7%

## Production Process Diagram





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## Kaveh Methanol

Implemented by: Kaveh Metanol Co.

- Location: Dayer, Bushehr
- Area: 50 hectares
- Ownership: Private Sector (100%)
- Start date: 2010
- Projected operation date: 2017

### ● Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
Methanol	2,310	2,310

### ● Applications

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



License: Ammonia Casale

Basic & detailed engineering & procurement: PIDEK / Petro Kaveh Ofogh

installation and construction: Petro Kaveh Ofogh

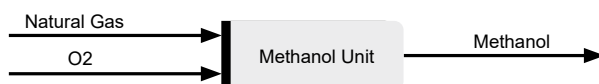
Physical progress (as of 20 March 2017 ): 95%

### Feedstock (msm<sup>3</sup>/y)

Feedstock	Capacity	Source
Natural gas	2,584 mm <sup>3</sup> /y	NIGC

Feed & Fuel

### Production Process Diagram





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## Siraf Methanol

Implemented by: Siraf Energy Investment Co.

- Location: Dayer
- Area: 54 hectares
- Ownership: Energy Sepehr Co. (100%)
- Start date: 2013
- Projected operation date: 2019

### Production Capacity (1000 t/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



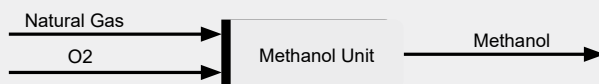
License & basic engineering: Topsoe (Denmark)  
 Detailed engineering & procurement: Namvaran  
 Physical progress (as of 20 March 2017): 25.9%

### Feedstock (msm<sup>3</sup>/y)

Feedstock	Capacity	Source
Natural gas	1,393	NIGC

Feed & Fuel

### Production Process Diagram





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## Masjid Soleiman Ammonia/Urea

Implemented by: Masjid Soleiman Petrochemical Company (Private Joint Stock)

- Location: Masjid Soleiman
- Area: 50 hectares
- Ownership: Ghadr Investment Development Co. (49%), Private Person (33%), 8<sup>th</sup> Fadak Kosar (18%)
- Start date: 2012
- Projected operation date: 2019





## Production Capacity (1000 t/y)

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



### Applications

Used as chemical fertilizers for agricultural purposes

## Feedstock (msm<sup>3</sup>/y)

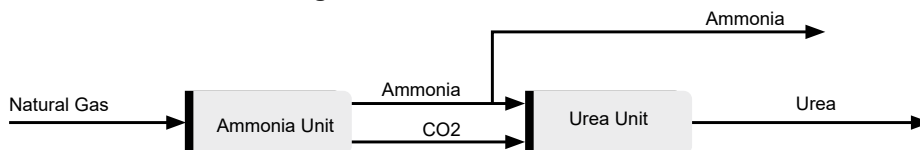
Feedstock	Capacity	Source
Natural gas	905	NIGC

### Feed & Fuel

Basic engineering & procurement: WUHUAN (China) / PIDEK

Physical progress (as of 20 March 2017): 23%

## Production Process Diagram



# Petro Ramsheh Expandable Polystyrene

Implemented by: Petro Ramsheh Co. (Private Joint Stock)

- Location: Isfahan
- Area: 8.5 hectares
- Ownership: Private Sector (100%)
- Start date: 2011
- Projected operation date: 2019



## Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
EPS	50	50

## Applications

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

## Feedstock (1000 t/y)

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

License: B.P

Basic, detailed engineering & procurement: EIED

Physical progress (as of 20 March 2017): 8.5%

## Production Process Diagram



LEADING  
PROJECTS  
OF **SIXTH**  
**DEVELOPMENT**  
**PLAN**



# Fateh Kimia GTPP (Phase1)

Implemented by: Fateh Kimia Petrochemical Co.

- Location: Dayer
- Area: 30 hectares
- Ownership: Private Sector (100%)
- Start date: 2013
- Projected operation date: 2020



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100

PETROCHEMICAL  
PROJECTS

## Production Capacity (1000 t/y)

Product	Nominal Capacity	Salable
Methanol	1,650	1,650*

\* After the implementation of the second phase, Methanol will not be salable

## Applications

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

## Feedstock (msm<sup>3</sup>/y)

Feedstock	Capacity	Source
Natural gas	1,635	NIGC

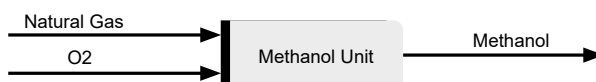
Feed & Fuel

License & basic engineering: Ammonia Casale

Detailed engineering & procurement: PIDEK

Physical progress (as of 20 March 2017): 12.4

## Production Process Diagram



# Kermanshah Ammonia/Urea (Phase2)

Implemented by: Kermanshah Petrochemical Co.

- Location: Harsin Kermanshah
- Area: 13 hectares
- Ownership: Kermanshah Petrochemical Co. (100%)
- Start date: 2013
- Projected operation date: 2020



## Applications

As Chemical fertilizer for agricultural purposes

## Production Capacity (1000 t/y)

Products	Nominal Capacity	Salable
Ammonia	396	25
Urea	660	660
Total	1056	685

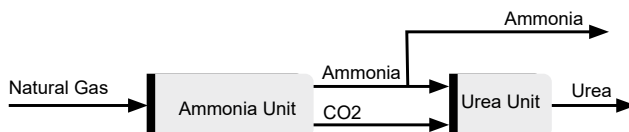
## Feedstock (msm<sup>3</sup>/y)

Feedstock	Capacity	Source
Natural gas	475	NIGC

## Feed & Fuel

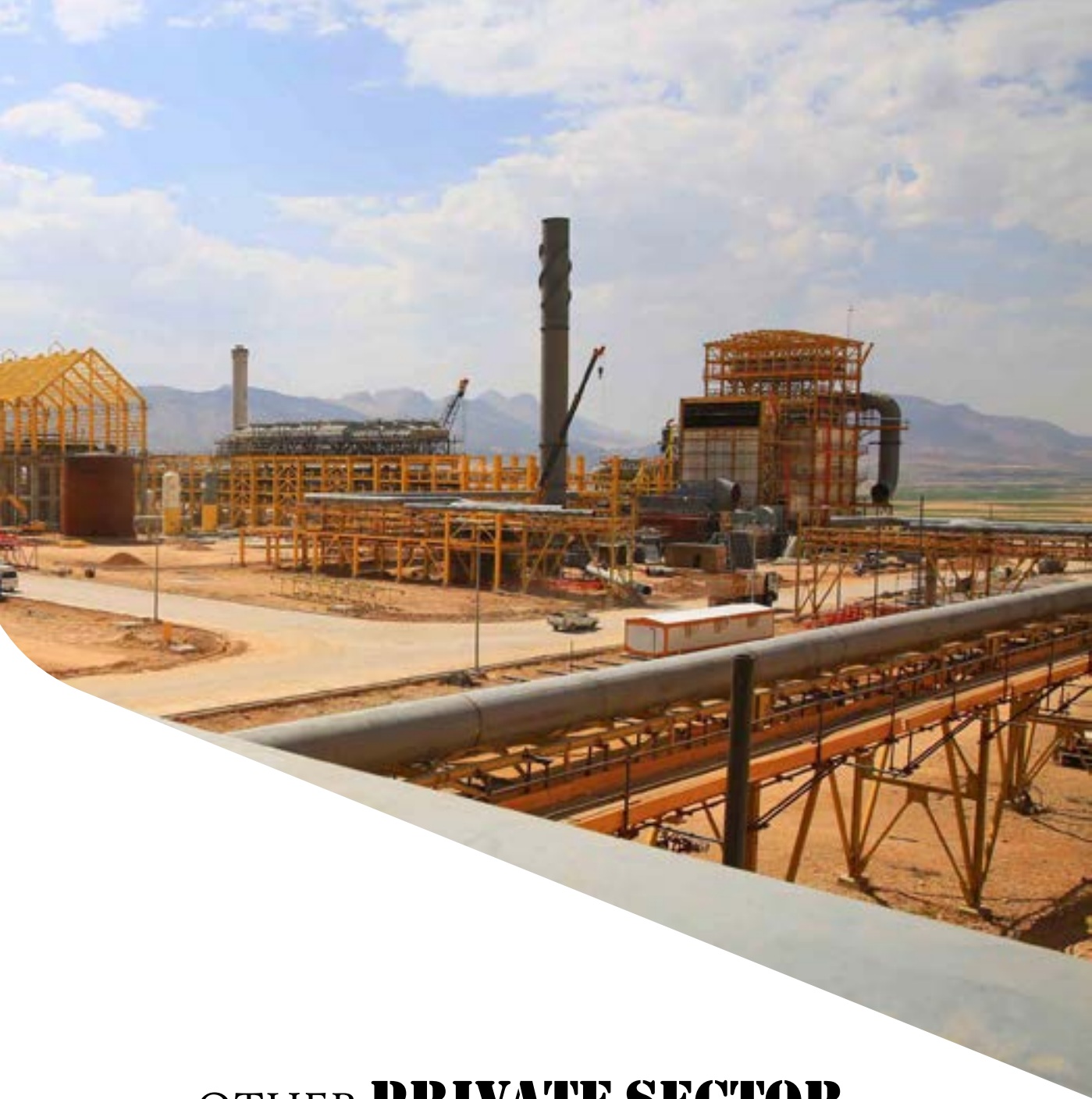
License and basic engineering: Stami Carbon  
 Installation and detailed engineering: Namvaran  
 Physical progress (as of 20 March 2017): 24.1%

## Production Process Diagram



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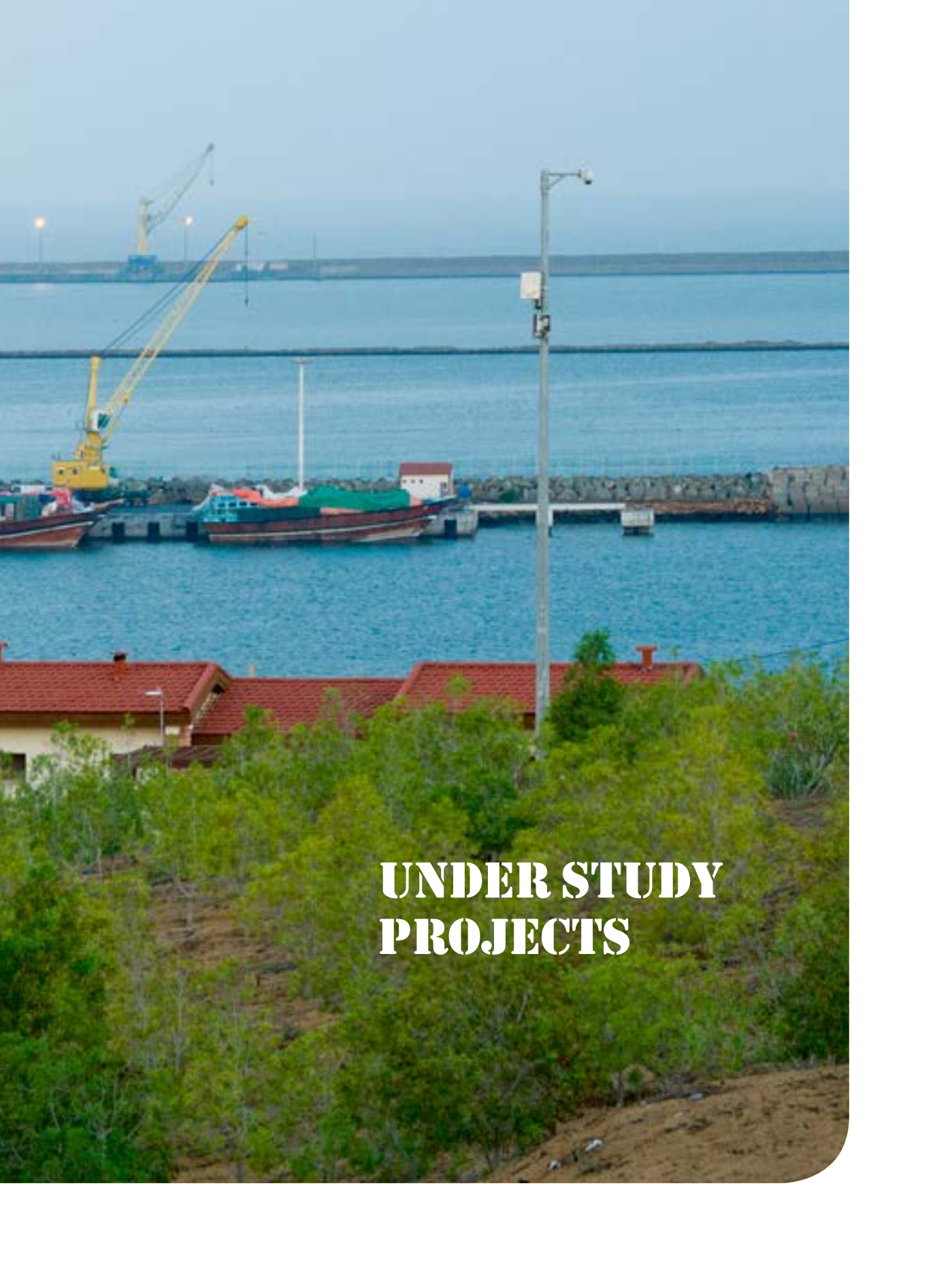
## OTHER **PRIVATE SECTOR** **PROJECTS**

## Other private sector projects of Iran's petrochemical Industry

Project name	Ownership	Location	Normal capacity <sup>(000t/y)</sup>	Physical Process (as of 20 march 2017)
Veniran Apadana Methanol	Veniran apadana petrochemical co.	Assaluyeh	1650	25.5%
Dena Methanol	Dena petrochemical	Assaluyeh	1650	39.5%
Di Polymer Arian Methanol	Di polymer Arian petrochemical co.	Assaluyeh	1650	17.5%
Arman Methanol	Arman methanol Co.	Assaluyeh	1650	18.8%
Methanol/Ammonia1	Arg shimi parsia Co.	Assaluyeh	1290	10.5%
Methanol/Ammonia2	Lavan industry development company	Assaluyeh	1290	11.6%
Hormoz Ammonia and Urea	Hormoz urea fertilizer company	Assaluyeh	1755	7.17%
Lavan Chemical Ammonia and Urea	Lordegan urea fertilizer company	Assaluyeh	1755	7.6%
Golestan Ammonia and Urea	Golestan petrochemical Co.	Agh ghala Golestan province	1755	15.3%
Zanjan Ammonia and Urea	Zanjan petrochemical Co.	Ijrood- Zanjan province	1755	24.4%







# **UNDER STUDY PROJECTS**

● LIST OF  
UNDER STUDY  
RETROCHEMICAL  
PROJECTS



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Petrochemical projects in:

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Chabahar

---

Gheshm Island

---

Parsian Special Zone

---

Petrochemical Special /Economic Zone (Mahshahr)

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Assaluyeh

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ONSTREAM  
**PROJECTS**

## LIST OF NPC ONSTREAM PROJECTS

Since the beginning of the 2<sup>nd</sup> 5-year development plan

110

### PETROCHEMICAL PROJECTS

Project Name	Company
Methanol	Kharg Petrochemical Co.
Paraxylene	Bandar Imam Petrochemical Co.
MTBE	Bandar Imam Petrochemical Co.
Centralized Utility	Fajr Petrochemical Co.
Ethoxylates	Shazand Petrochemical Co.
NGL 1200/1300	Petrochemical Industries Development Co.
Line E (ABS/BD)	Tabriz Petrochemical Co.
Granular urea	Razi Petrochemical Co.
HDPE	Amir Kabir Petrochemical Co.
Crystal Melamine	Khorasan Petrochemical Co.
3rd Aromatic	Buali Sina Petrochemical Co.
3rd Methanol	Fanavar Petrochemical Co.
Engineering Polymers	Khuzestan Petrochemical Co.
Export Jetty (First)	Petrochemical Special Economic Zone
Linear Alkyl Benzen (LAB)	Bisootun Petrochemical Co.
Feedstock & Products Pipeline	Petrochemical Special Economic Zone
6th Olefin (Excluding LDPE plant)	Amir Kabir Petrochemical Co.

Project Name	Company
1st PTA/PET	Shahid Tondguyan Petrochemical Co.
Petrochemical Special Economic Zone Storage Tanks	Petrochemical Special Economic Zone
Ethane Recovery	Pars Petrochemical Co.
Centralized Utility	Mobin Petrochemical Co.
Formalin	Shahid Rasouli
CO & Acetic Acid	Fanavaran Petrochemical Co.
4th Methanol	Zagros Petrochemical Co.
4th Aromatic	Nouri (Borzuyeh) Petrochemical Co.
4th Ammonia / Urea	Pardis Petrochemical Co.
LDPE	Laleh Petrochemical Co.
1st Ammonia	Razi Petrochemical Co.
2nd PTA/PET	Shahid Tondguyan Petrochemical Co.
5th Ammonia / Urea	Kermanshah Petrochemical Industry Co.
9th Olefin	Arya Sasol Polymer Co.
10th Olefin	Jam Petrochemical Co.
Ethylene Glycols	Farsa Shimi Co.
Isocyanates (1st Phase)	Karoon Petrochemical Co.
Centralized Utility (Fajr-1 expansion)	Fajr Petrochemical Co.
Assaluyeh HDPE	Mehr Petrochemical Co.
Ghadir PVC	Ghadir Petrochemical Co.
Butadiene	Jam Petrochemical Co.
EB/Styrene	Pars Petrochemical Co.
Air Separation Unit & Power plant <small>(Mobin Expansion Project)</small>	Mobin Petrochemical Co.
Pars Petrochemical Jetty	National Petrochemical Co.
6th Ammonia/Urea	Pardis Petrochemical Co.
Assaluyeh Olfen	Morvarid Petrochemical Co.
2nd High-Impact Polystyrene	Tabriz Petrochemical Co.
Power plant (Mobin expansion)	Mobin Petrochemical Co.
LDPE	Amir Kabir Petrochemical Co.
2nd Fajr Centralized Utility Offsite	Fajr Petrochemical Co.
Phosphoric Acid	Arya Phosphoric Co.

Project Name	Company
Butene-1	Jam Petrochemical Co.
Formalin	Ehtemam Jam Petrochemical Co.
Chloralkali & PVC	Arvand Petrochemical Co.
2nd Liquid Products Jetty	Petrochemical Special Economic Zone Org.
11th Olefin (1st phase)	Kavian Petrochemical Co.
West Ethylene Pipeline (1st phase)	Petrochemical Industries Development Co.
HDPE	Kermanshah Polymer Co.
Formalin	Gameroun Petro Sanat Co.
3rd NF	Bandar Imam Petrochemical Co.
CO <sub>2</sub>	Polymer Ofogh Co.
Air and Water Unit (Fajr 2nd Phase)	Fajr Petrochemical Co.
HDPE	ILam Petrochemical Co.
PBR/SBR	Takht-e-Jamshid Petrochemical Co.
HDPE/LLDPE	Lorestan Petrochemical Co.
HDPE/LLDPE	Mahabad Petrochemical Co.
Assaluyeh Ethylene glycols	Morvarid Petrochemical Co.
Marvdasht Ammonia/Urea	Shiraz Petrochemical Co.
11th Olefin (Phase 2)	Kavian Petrochemical Co.
MEK	Shimi Tex Arya
Poly Styrene	Takhte Jamshid Pars Assaluyeh
Isocyanates (Phase 2)	Karoon Petrochemical Co.
LDEP	Kordestan Petrochemical Co.
Polystyrene	Entekhab Industries Group



# The Core Values of National Petrochemical Company

Value Creation **Accountability** Commitment to the Sustainable Development









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