

specialists and experts were completely capable of handling the execution operations.

**Q: How many jobs has the project generated?**

A: In regards to creating jobs this project has taken significant steps, to an extent that during its peak performance 5,000 people were employed in the complex and its workshops. In the project's engineering sector domestic contribution added to a total of 3,000 man hours, while construction and installation and pre-commencement operations added to a total of 8 million man hours. Moreover, some 1,000 workers are currently employed in the complex. Based on the calculations made out of the organization graphs, it is predicted that some 321 people will be needed to maintain the complex after it has commenced production. However, this figure is sure to rise at times of repair or support. It is also predicated that 2 to 3 thousand people will be employed in the related downstream industries when the complex commences production.

**Q: What features does the Khuzestan Petrochemical Complex possess?**

A: The first feature is that it is the first of its kind to produce polycarbonates in the Middle East region. Its next feature would be the presence of a young and expert workforce in the complex. This workforce was first trained in other petrochemical complexes and afterwards they were immediately absorbed into the Khuzestan Petrochemical Complex and have been present in all the stages of installation and commencement. This means that they have gained a priceless experience in installation and commencement as this is an event that only occurs once in the life of any complex. These young experts will be the future leaders of the complex. Another feature of this complex is that it has established a connection with the countries that have granted its license,

the result of which has been sending 33 workers to Russia and Poland in order to be trained in the technology for the production process and polycarbonates. These people must assume the leadership role of the complex in the future. A further feature of the Khuzestan Petrochemical Complex is its close working relationship with the Amir Kabir Industrial University. This university will be setting up a college with polymeric courses in the region, which will be a step towards bringing universities and industries closer together.

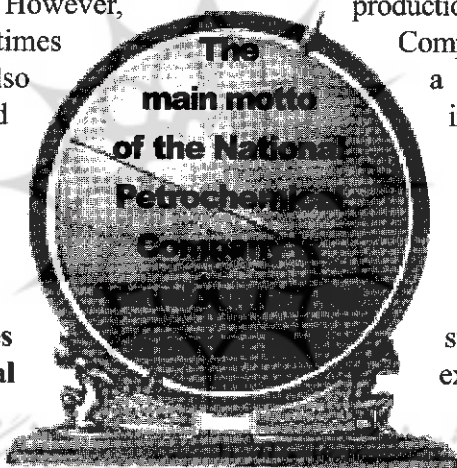
**Q: Will the complex have a pilot plant as its research unit?**

A: The general policy of the National Petrochemical Company is that every complex should have a pilot plant unit; but unfortunately due to the restrictions of the license acquired for production, Khuzestan Petrochemical Company is not allowed to set up such a research unit. However, taking into consideration the workers sent off to train in technology-owning countries, it is hoped that we can take steps towards streamlining production in the future. Moreover we are taking steps to invite Russian and Polish experts to come and cooperate with the complex.

**Q: What are the complex's mottos?**

A: The main motto of the National Petrochemical Company is "development for a better life" and this is a key slogan for Khuzestan Petrochemical Complex as well; but there is also an inner motto and that is utilizing all the potential existing in the forces for the better commencement of the complex, with higher quality and precision. In other words, we are trying to secure the contribution of everyone in the true sense of the word and by delegating the responsibilities between all the individuals and getting them engaged in the work we are trying to establish a dynamic and cheerful complex.

**Translated By: Sajjad Khoshroo**



world?

A: Iran is the only producer of polycarbonates in the Middle East. The pioneer of this product's production technology is America. Russia and some European countries such as Germany and Poland are also producers of this product.

**Q: How do you see the future of this product's sales market?**

A: The use and consumption of petrochemical products in different industries has had an increasing trend over the past 10 years. For example, in the years between 2000 and 2003 this growth reached as high as 8%. This is a testimony to ever-increasing need for the products procured from these goods. Polycarbonates face a bright future, as they have many uses in a variety of industries most of which benefit from new science and technology. Investment in this sector is sure to have high profit and economic feasibility.

**Q: Is the Khuzestan Petrochemical Complex capable of boosting its production capacity at the same pace as consumption and demand growth?**

A: Unfortunately, due to the limited space that the complex has under its control, as well as license restrictions the complex will be unable to boost its production capacity in the future. However there are plans underway to streamline the production grades in an attempt to boost their quality and it is hoped that these plans will, in the future, lead to some production increase, especially in the production unit.

**Q: What is the complex's feedstock and where is it supplied from?**

A: It is the first time that the products of the Khuzestan Petrochemical Complex are being offered and as a result the three main feedstock this complex is imported from abroad. These three feedstocks, which account 40% of the total feedstock, consist of annual imports of 8,400 tons of acetone and 26,700 tons of fennels from Belgium and 5,000 tons of epichlorohydrine from Korea. The complex's

other feedstock which are supplied domestically consist of natural gas at 2.5 million cubic meters per year from the Fajr Petrochemicals, and an annual 9,500 tons of chlorine and 160 tons of from the Bandar Imam Petrochemical Complex. However, carbon monoxide, and are all feedstock that are produced in the complex itself and are subsequently used in the later phases of production.

**Q: What is the method and volume of investment?**

A: The financial requirements of the project have been met in their entirety by the National Petrochemical Company (NPC) and 100% of the shares of the Khuzestan Petrochemical Complex belong to NPC. The currency investment in this project added up to \$165 million that was supplied through the finance method and the project's local currency investment came to 265 billion rials (\$33.1 million).

**Q: What percentage of the project has been completed and when will it come onstream?**

A: The progress in the project's engineering sector is 99%, the preparation, purchase and supply of equipment is 97% complete and the construction and installation phase has had a progress of 92%. In the first phase of the complex—which will be producing and all the civil, construction, structural and piping operations have been completed and are being tested and will come onstream by the third quarter of 2003. The second phase that is designed to produce polycarbonates will commence production by the first quarter of 2004. This project has thus far been progressing according to schedule.

**Q: What is the role of Iranian specialists in execution of the project?**

A: The project's engineering operation is being done inside the country and all the production, installation, pre-commencement stages have been completed by Iranian specialists. Despite the complexity and novelty of the complex's production process, the Iranian

## **Q** : What are the aims and objectives of the Khuzestan Petrochemical Complex?

**A:** The Khuzestan Petrochemical Complex has been established to achieve two aims: meeting domestic demand and entering world petrochemical markets in the field of engineered polymers. In regards to the first objective, it is worth mentioning that we believe it is our responsibility to fulfill the raw material requirements of Khuzestan's downstream industries, as well as the requirements of industries that use epoxy resin and polycarbonates as their raw material; and thus prevent the exit of capital and currency from the country. In relation to the second objective it must be said that the high value addition of producing engineered polymers, as well as having domestic access to the raw materials required for its production was what encouraged the National Petrochemical Company to consider it as an objective.

## **Q:** Which polymers are called engineered polymers?

**A:** Engineered polymers are a member of the polymer family. These polymers have a particular method of production and a role in the production of special goods. Thus, they are more expensive and have a higher value addition compared to other polymeric materials. Polycarbonates that can be produced in countless grids are an example of these polymers.

## **Q:** What products will this complex be producing and in what volume?

**A:** The Khuzestan Petrochemical Complex annually produces 12,000 tons of phosgene, 30,000 tons of base-Phenol-A, 25,000 tons of polycarbonates, 5,000 tons of liquid epoxy resin and 5,000 tons of solid epoxy resin. Phosgene used as medium products and feedstock in the production of other products, and polycarbonates are finally taken to the market as final products.

## **Q:** Of the complex's products, which ones have domestic use and which ones are

exported?

**A:** The latest studies show a domestic market demand for only 20% to 30% of the polycarbonates produced in the Khuzestan Petrochemical Complex, so the rest can be sent off to global markets. However, due to the national industry's dependence on this product will be completely absorbed in the domestic market.

## **Q:** How much are the complex's products worth?

**A:** Considering the forecasted sales and assuming a good sales market, the value of the products produced in the Khuzestan Petrochemical Complex is estimated to be 580 billion rials (\$72.5 million) per year.

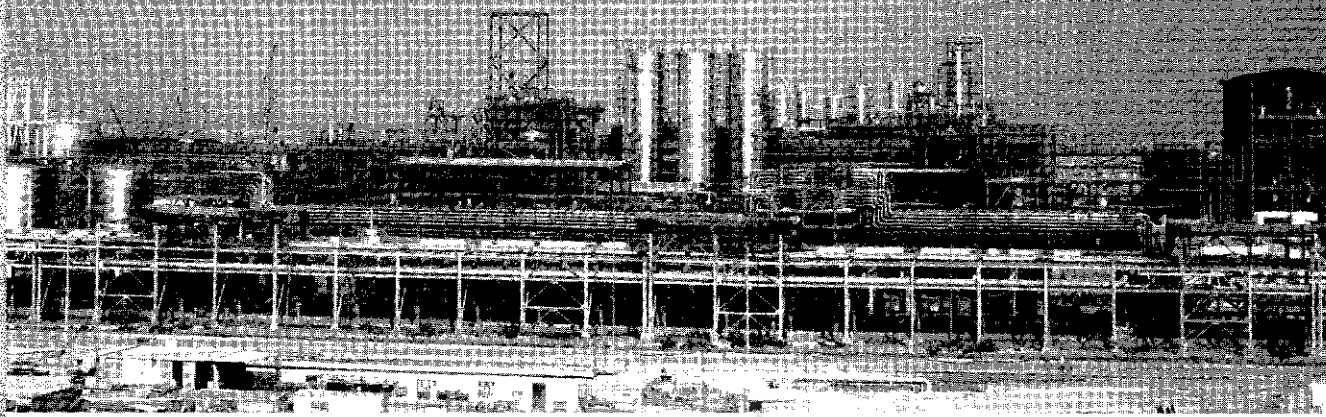
## **Q:** Which countries import the polycarbonates the complex produces?

**A:** Far East Asian states are the most common consumers of polycarbonates produced in the Khuzestan Petrochemical Complex. China is the region's major consumer. However, European states, especially Western Europe, are also amongst the consumers of our polycarbonates. Due to the high standard and quality of the complex's polycarbonates, we face no problems in exporting our products to anywhere in the world. As a result, the Petrochemical Commerce Company is currently marketing the complex's products in global markets.

## **Q:** What industries use polycarbonates?

**A:** Immediately after production and without any further manipulation, can be directly used in industries such as paint, textile, coverings, carpet, glues, polymeric concretes, pipe coverings as well as oil and gas industries. But polycarbonates, on the other hand, have several uses. It is eventually used in industries such as optics, film, shatterproof glass, aerospace, auto manufacturing, electronics, lighting systems, medicine and hygiene.

## **Q:** What is the situation of the production of these products in the region and the



# Khuzestan Petrochemical Complex

## The Polymeric Gem of the Middle East

**T**he first polymeric production in Iran dates back to the year 1970, when Abadan Petrochemicals started production at a capacity of 36,000 tons. Since then, many years have passed and today the National Petrochemical Company has taken significant strides in meeting the domestic demand of downstream industries as well as entering world markets. One such stride is the establishment of the Khuzestan Petrochemical Company. The said company is charged with producing branches of engineered polymers and sending them off to domestic and world markets. In an interview with Mohammad Reza Rezaei, the young Managing Director of the Khuzestan Petrochemical Company he touched on issues such as the aims, production, and commencement date of the Khuzestan Petrochemical Complex project, which is located in the Bandar Imam Special Petrochemical Economic Zone.