



*The History of Tiszai Vegyi Kombinát (Tisza Chemical Works)*

*from 1953 to 2013*



# Introduction

## Dear Reader

If we look at our task in the most straightforward way, we could state the thesis of our mission in the following words: we synthesise a vast amount of carbon and hydrogen atoms, building elements of petrol and gasoil, in a way that allows our plastics processing customers to produce consumer goods, which facilitate our daily lives. These products and goods also make the lives of the individuals of the society simpler and easier.

The story began 60 years ago and in the decades since then, TVK has become a market leader in polyolefin production in Central Eastern Europe. To record and document the important moments of our past is valuable for our future. We must keep in mind the merits, which helped us become successful in the past. Similarly, we have to learn from the mistakes causing our failures at times so that we do not commit them again. To maintain and systemize the moments of our history gives us continuous work.

One important step in this process was the creation of the Museum Hall, which was inaugurated in autumn 2007.

This album describes some events of our 60 years' history and is a sort of continuation of this work. It is good to know that we do have many things to record and continue.

In order to adjust our work to new requirements, we have restructured the organizations of our company and harmonized their operations with TIFO operations; we have set to the implementation of a butadiene recovery plant, of which we expect to open a new chapter in our success story once we look back on the mid 2010's two decades later...

Being responsible citizens, we remember the duties our social role gives us and therefore, we contribute to the life of Tiszaújváros and the South Borsod Region. Each one of us has its own role in the implementation of this work. Even the smallest screw in the machinery does count. As demonstrated by the new logo of ÖTR, we count on any one of our employees who, in addition to fully implementing his duties according to his/her work description, is ready to make extra efforts to contribute to the improvement of the efficiency of corporate operations and to the enhancement of TVK's reputation, and to help TVK comply with the requirements of sustainable development.

Our past is our teacher: the books on history are important. A dialogue in Hans Christian van Baeyer's book Taming the Atom provides the motto for another book A Short History of Nearly Everything by Bill Bryson:

Physicist Leó Szilárd once told his friend Hans Bethe that he was wondering if he should keep a diary.

- *I would not publish it, just put down the facts as information to God.*
- *Don't you think that God is aware of the facts? - asked Bethe.*
- *He is - replied Szilárd. - He knows the facts, but not in our version.*

Editors' efforts to compile the album TVK 60 serve a similar goal: to flash the light on the milestones of TVK history in a way contemporary documents present them. However, we cannot describe the memories, impressions, and feelings of all those who used to work here. However, a historical review will allow all to recall the nice or tough moments, which by now have become parts of their lives.

This way, one version of the almost complete illustrated brief history of TVK can be read and seen, here.

I wish you good work and a pleasant reading!

Zsolt Pethő  
CEO





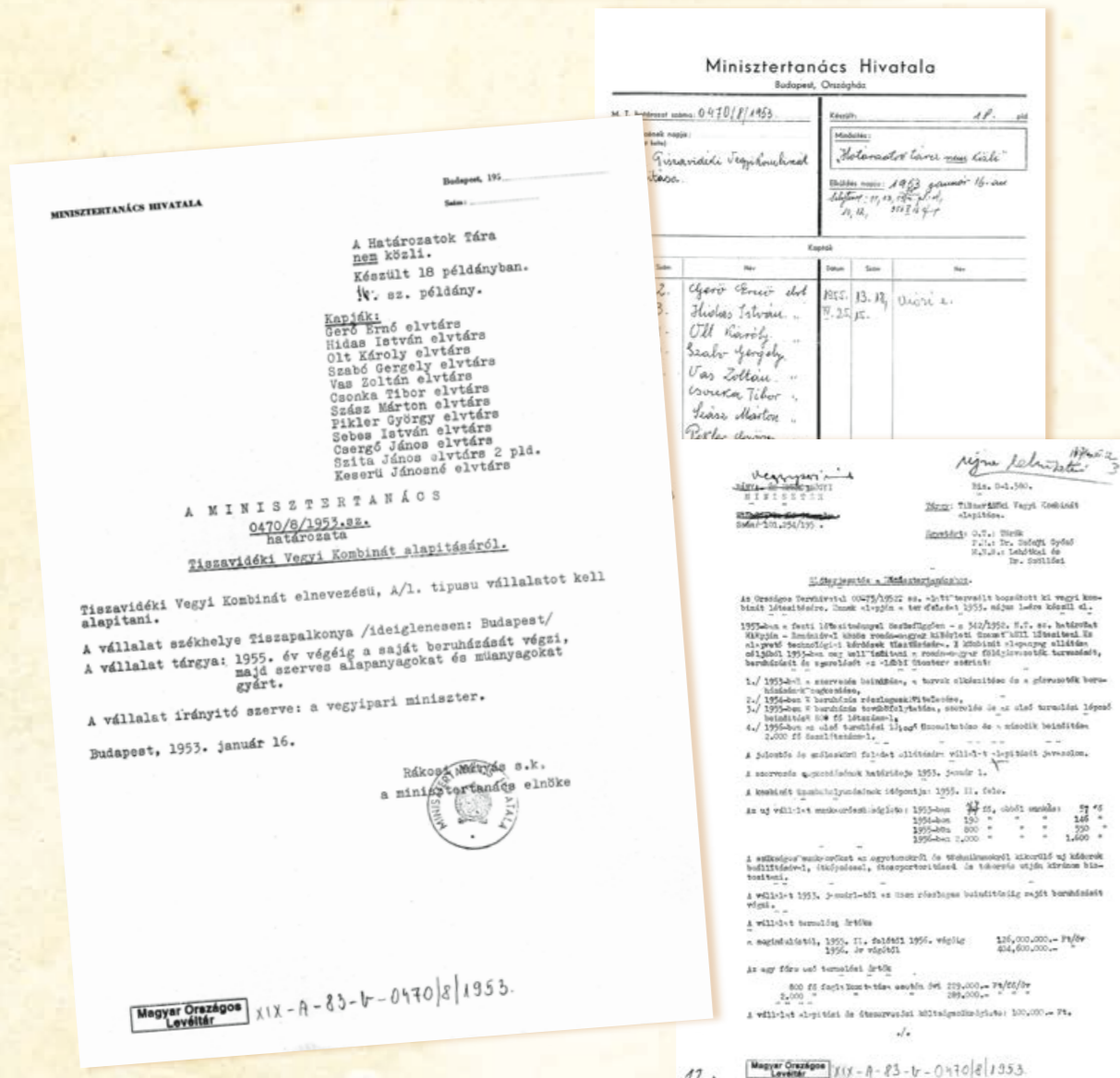
## The history of Tiszai Vegyi Kombinát (Tisza Chemical Works)

The history of Tiszaújváros (former Tiszaszederkény, and then Leninváros) goes back to only a few decades and closely connects to the post-war industrial development of this country. The geographical conditions in the area where the Sajó and Tisza Rivers meet were favourable to install energy, chemical, and refinery

industries. The formulating industrial region offered jobs for many. Families came from all parts of the country to settle here in hope of finding long-term opportunities of living. The birth of Tiszaújváros is owed exclusively to the foundation of TVK, and in the past decades, the town's history has been entwined with the history of TVK.



## Decision on the establishment



After the Second World War, in 1951, the government approved a project plan to build a thermal power plant in the outskirts of Tiszapalkonya in order to lessen the drawbacks of the largely underdeveloped electric energy industry. At the same time, the electric power to be produced here would allow the establishment of chemical industry in the region.

The initial plans for the construction of the first Hungarian Natural Gas Complex (1951) anticipated that such gas company would rely exclusively on the natural gas resources explored next to Lake Balaton, but it turned out not to be sufficient to satisfy natural gas needs for longer than 15 to 20 years. At the same time, an agreement with the Romanian Socialist Republic on 12 April 1952 for a yearly supply of 120 million cubic metres gas to Hungary through a pipeline rendered it more reasonable to build up a consumer unit in an area more to the east. The feedstock from Romania was excellent for the purposes of chemical industry, since it was one of the highest quality natural gases of the world.

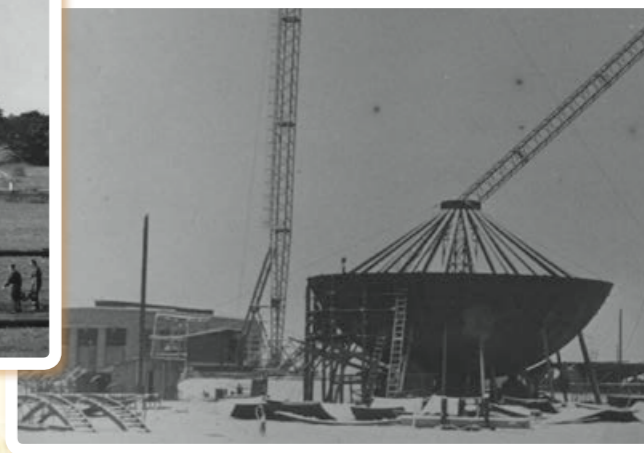
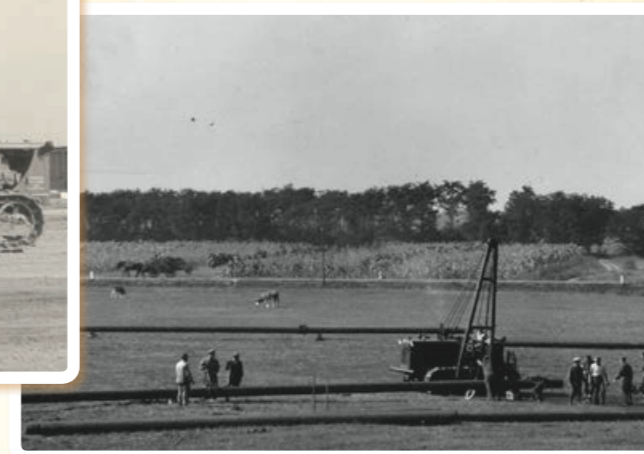
In its Decision 0076/52 of October 13, 1952, the National Planning Institute adopted the investment project for the construction of the Natural Gas Complex in Tiszapalkonya. The easy accessibility of feedstock, electric power, steam, and water, as well as the availability of workforce and transportation facilities played an important role in determining the site. The decision about the final location of the chemical company was brought on December 29, 1952 specifying that the facility had to be built on a plane area near to the Tisza Power Plant so that the necessary energy supplies were secured to the future company. Until January 31, 1953, the Ministry directing the project handled the practical operations of the project.

On the day following the date of issue of the deed of foundation, the Council of Ministers issued its decision N° 0470/8/53 on January 16, 1953 about the foundation of Tiszavidéki Vegyi Kombinát (Chemical Complex on Tisza), which would take over the management of the projects as of February 1, 1953.

## Construction begins

As planned initially, the decision of the Council of Ministers issued on June 14, 1954, envisaged the production of PVC, nitrogen fertilizer, organic intermediaries, and polyacryl-nitrile fibres. In 1954 and 1955, however, the project plans were revised and amended several times, its planned facilities relocated and completion dates re-scheduled, moreover, even the idea of cancelling the construction of the Tiszavidéki Vegyi Kombinát (Chemical Complex on Tisza) altogether popped up in the relevant disputes. (Some of the planned projects including the PVC manufacturing facility would finally be built in Borsodi Vegyi Kombinát/Kazincbarcika, or Wanhua-BorsodChem as is referred to today.) On May 9, 1955, the Ministry of Chemical Industries took a stand that the chemical plant should be built next to Tiszapalkonya, and the construction of the plant began in September

the same year. On January 31, 1956, the presidium of the National Planning Institute ordered the establishment of a company, Tiszavidéki Vegyi Kombinát to be in charge of handling the projects. The events of the revolution in 1956 had their impacts on the construction of TVK. Progress slowed down or came to a halt for shorter or longer periods. The construction resumed only one and a half year later in 1958. The largest construction of the second five years' plan began in September 1955 with operations requiring extraordinary efforts. The new plant giant was planned to build on the flood area of the Tisza River, which required large-scale landscaping actions going on for four years; construction workers moved 700 thousand cubic metres earth and built in almost one million cubic meters construction material.



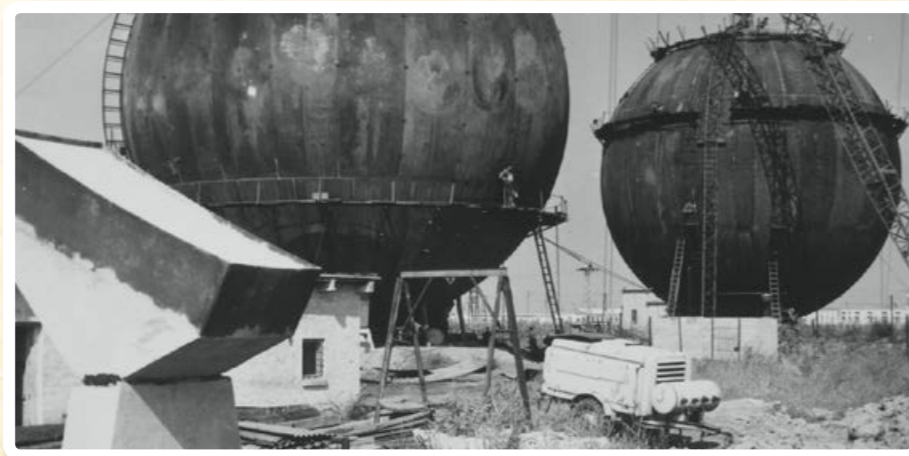
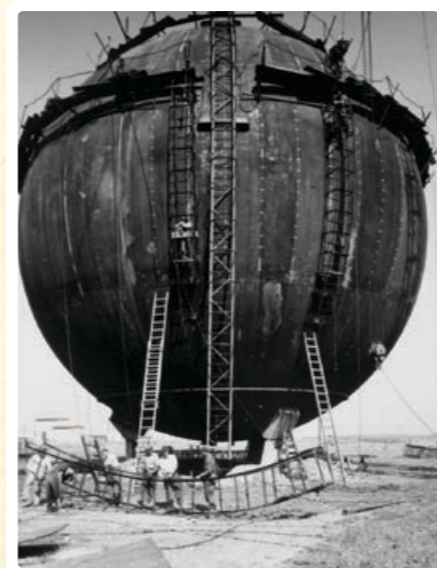
## The Gas Plant comes first

Finally, the Soviet Union solved the project problems by offering to hand over the project documentation for a nitrogen fertilizer plant with 210 thousand tons per year capacity and to deliver the pertaining equipment, as well. According to the agreement between the two governments, in November 1958, the Soviet party would supply the technical and production assets necessary to the construction of a Hungarian nitrogen fertilizer plant, in years 1961-1963.

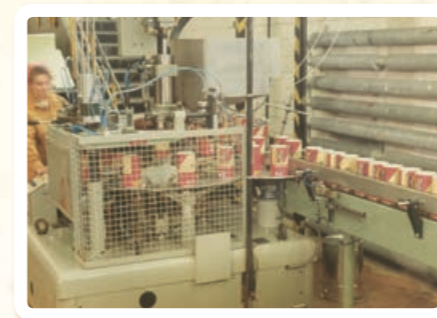
In 1959, construction engineering was completed for a plant designed to produce 100 000 tons of ammonia, 210 000 tons of ammonium nitrate, and 10 000 urea a year. What helped engineering work progress was that in 1958 natural gas supplies by Romania according to a former agreement were increased to 200 million cubic metres from 120 million cubic meters per year.

Simultaneously, the construction of the plant began in 1960 on an area of nearly one square kilometre, and also the training of the future plant personnel. The operators were trained in the chemical plants of various Romanian and Soviet towns and in Péti Nitrogénművek/Hungary (Nitrogen Works in Pét), founded in the 1930's, as well as in Borsodi Vegyi Kombinát, built some time earlier.

The first two operating TVK units were the Gas Plant receiving gas supplies from Romania and the central wastewater treating plant built parallel with the Gas Plant in 1959. The pipeline, starting at Kissármás/Romania, began commercial operation on April 1, 1959 to secure natural gas feedstock for the fertilizer plant. This pipeline ensured the gas demand of the paint plant and, from the beginning of autumn 1964, it would satisfy the feedstock demand of the nitrogen fertilizer plant, as well. The plant unit comprising the gas line and the gas receiver station began its operation on October 21, 1959. TVK's emblem still represents the typical gas tanks of the gas receiver station.



## Varnish Paint and Synthetic Resin Plant



As planned, a paint plant would be built in Budapest as part of the further development of the Hungarian chemical industry. Nevertheless, such development was doubtful to be implemented, since there was not enough room available and because the industrial load of the capital area should not be increased. Therefore, it was decided that the plant should be built somewhere else. On December 31, 1957, the Ministry of Heavy Industries ordered the installation of the plant at Tiszapalkonya.

The project program for the Varnish Paint and Synthetic Resin Plant with 6000 tons per year capacity was prepared in April 1958. The plant, originally intended to be built in Kőbánya, began to produce varnish paints and synthetic resin necessary for paint production following its five months' pilot operation in January 1961. The plant produced alkyd resin in the largest quantities, which gave the primary raw material for different kinds of paints and enamels including the so-called synthetic enamel sold in the highest amounts then. In order to secure the required packaging materials, the Technical Department of the company worked out the design documents of a tin manufacturing plant, which would soon be built.

Modern machinery and equipment freed plant personnel from hard work and the newly developed closed manufacturing lines protected them from the health hazards of the materials applied in the production processes. Relying on the alkyd resin manufactured locally, the plant produced over 50 thousand tons of paints representing half of domestic paint production at that time.

The products of the paint plant consisted of a wide range of varnishes, enamels, automotive paints, chassis and hollow treating coats, and modern water-soluble paints and adhesives. The tin plant made 4 000 000 tins per year.

## From the Fertilizer Plant to inauguration

The construction of the Fertilizer Plant began in 1961 and lasted for three years. The company was given its present name Tiszai Vegyi Kombinát (Tisza Chemical Works) on 22 March, 1962, while the implementation of the projects was in process. The Acid Plant was the first unit necessary for fertilizer production, which began its operation on August 15, 1964; it used liquefied ammonia purchased from Borsodi Vegyi Kombinát. The plant's own ammonia production began in October 1964, which would be followed by the gradual commissioning of the synthesis loops of the plant, successfully completing the pilot operation of the Fertilizer Plant on April 23, 1965.



Mr. Jenő Fock, then deputy chairman of the Council of Ministers and member of the Political Committee inaugurated the largest chemical installation of Hungary on November 29, 1965, after it had operated safely for more than a year. At that time, the fertilizer plant and paint plant were the two production units in Tiszai Vegyi Kombinát, from January 1963 a central repair shop as well, which provided for the first facility of the future Machine Plant. Prior to the inauguration ceremony of the company, the business organization that operated Tiszai Vegyi Kombinát until then on June 1 became an independent company and its construction projects' handling section was converted into Petrolkémiai Beruházási Vállalat (Petrochemical Projects Company). The main function of this new organisation was to handle and manage TVK projects including the most important ones: the implementation of the Polyethylene Plant and Olefin Plant. The project programme for a low-density polyethylene plant with a yearly capacity of 24 thousand tons had been adopted in late April 1965, and the project programme of the Olefin began in the early 1970's.

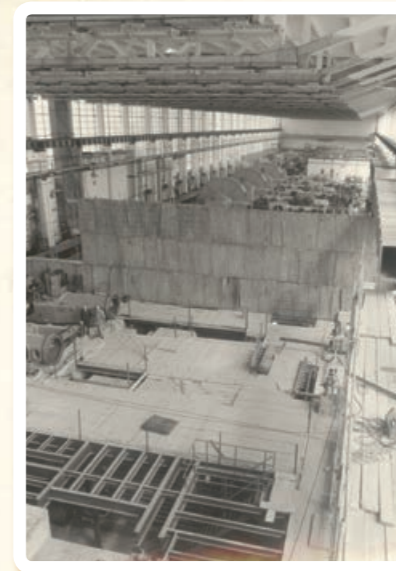


## Fertilizer and Urea Plant expands

After the pilot operation of the fertilizer Plant commenced, the expansion of plant capacity also started, which resulted in a capacity of 200 thousand tons fertilizer with 34% nitrogen content in 1965. In the same year, further development began with expansions implemented in the nitrogen fertilizer plant. These expansions made the plant capable of producing 250 000 tons of ammonia in excess of its initial production capacity, which allowed the plant to begin producing half a million tons of nitrogen fertilizer in 1968.

The pilot operation of the urea section commenced in October 1965 and created a basis for the production of fertilizer with 46.7% nitrogen content, the concentration being the highest of that time. This product was suitable both for farming as fertilizer, and for animal husbandry as a fodder supplement, and as a material for further utilization in mineral oil processing. Relying on the experience obtained in the meantime, the soviet specialists modernized the urea section, which would begin production at its total capacity after its pilot operation ended in May 1966.

In 1966, the company built a polyethylene plant for a capacity of 7 million polyethylene bags per year in order to secure weather resistant packaging materials for the outdoor storage of fertilizers. The plant also manufactured films for agricultural purposes. Plastics processing operations commenced in late September 1966 followed the production of polyethylene bags and agro films. The scope of production of the plant covered film products, twins and various blow moulded hollow products. The section, manufacturing polyethylene bags, was the first operating unit of the Plastics Plant. Since the date the section entered into operation, fertilizers would be loaded into weather resistant polyethylene bags, which made their transportation easier and allowed their outdoor storage.



## The Machine Plant built

**W**hile the basic project was implemented also a well-equipped central Maintenance Shop was built, the mainfunction of which was to help mechanical erection work and to supply materials to the operations. The task of people working here was to repair and keep the machinery and equipment of the company in a good working condition, to carry out their scheduled checks and calibrations. As a further element of the basic project, a foundry was built at the end of 1965 to manufacture iron, steel, and coloured metal castings necessary for machinery maintenance and for the erection of new equipment. Two years later, the Machine Plant began manufacturing various chemical appliances, drives, and plastics processing machines. (The foundry of the Machine Plant was phased out in 1982 because its operations had become unprofitable by then.)



## Olefin Plant – the basis of petrochemistry

**A**s part of the socialist economic integration, a Hungarian-Soviet Intergovernmental Olefin Agreement was concluded on September 15, 1970, which laid down the basis of a large-scale petrochemical development to come in the following years.

The main point of the agreement was that Hungary would build an ethylene plant with a yearly capacity of 250 thousand tons and supply in each year for ten years' period 130 thousand tons of ethylene and 80 thousand tons of propylene and other basic raw materials needed by the Soviet party for its plastics processing, while in return, the Soviet Union would deliver higher processed petrochemical products to Hungary.

The first step of this business was to build an Olefin Plant operating Linde's technology based on the thermal cracking of naphtha. In its decision GB 10.190/69 of December 20, 1969, the Economic Committee adopted a proposal for the construction of an Olefin Works. Simultaneously with the construction of the Olefin Plant, the construction of a vinyl chloride plant began in Kalush, Ukraine.



The construction of a 336 km long ethylene pipeline began in 1970 to bridge the distance between the two plants. The national sections of the pipeline were ceremonially coupled up on October 25, 1974 at Beregdaróc, a village at the frontier of the two countries. Company records refer to this event as the "red weld". This action created a direct technological link between the two countries.

At 1:00 o'clock p.m., February 13, 1975, continuous production commenced in the Olefin Plant and so did ethylene supplies to the Chlorine Vinyl Production Corporation in Kalush. The plant was inaugurated on March 3, 1975. A month later, Director Andor Huszár of TVK and director Gergely Szabó of the Petrochemical Projects Company were awarded a divided State Prize for the successful organization of the olefin project.

## Olefin Plant – the basis of petrochemistry

The commencement of the production in the Olefin Plant secured continuous feedstock supplies to the polyolefin-producing units of the company. The polyethylene and polypropylene plants to be built in the following years would rely on the products generated by the Olefin Plant. By cracking naphtha, the Olefin Plant produced ethylene, propylene, C4, C5, C6, and C7 fractions. The isobutylene component of C4 fraction would be converted into tertiary methyl butyl ether in the Tisza Refinery.

Under the Hungarian-Soviet Intergovernmental Agreement, TVK supplied yearly 130 thousand tons of ethylene, propylene, and C4 fraction to the Soviet Union for ten years' period, and in return, Hungary received petrochemical and plastic products from its counterpart. Railway tank cars and tens of thousands of trucks shipped huge quantities of products from the Tisza Chemical Company. The quantity of outgoing and incoming materials amounted to one million tons a year.

Petrochemical operations began on August 24, 1970 with the commissioning of the first low-density Polyethylene Plant (or as later referred to as Small Polyethylene Plant or LDPE 1) based upon ICI's technology. The official inauguration took place on October 28, 1971. (Before the Olefin Plant began its production, a low-capacity ethylene plant, referred to as the small ethylene plant,

operating a soviet technology, had tried to supply feedstock to the polyethylene plant and satisfy other demands. Because of its permanent technical problems, however, this plant would be shut down in 1974, and ethylene would be imported to supply the Small Polyethylene Plant before the Olefin Plant was started up).

By the mid 1970's, the capacity of the plant increased to 55 thousand tons per year, representing more than the double of its initial capacity. During the following years, specialty polyethylene grades were generated, which were used for a variety of products from packaging materials to cables.

The Tank Farm Plant started to function 1968 originally as the Tank Farm of the Small Ethylene Plant built to supply feedstock to the Polyethylene Plant (LDPE-1 plant at the present) with the related loading/unloading station. The first major development took place 1974-75, when the plant was extended: new atmospheric and pressurized tanks were erected to supply feedstock and certain auxiliary materials to the Olefin plant and for receiving the products of the plant in addition to ethylene and propylene by the reconstruction of the tanks in the ethylene plant and by erecting pressurized globes. A new loading/unloading station has been erected for the loading of pressurized liquid gases (propylene, C4-fraction) into rail containers.



## Creator of domestic plastics industry

Andor Huszár, considered as one of the most gifted and versatile company managers of the Hungarian chemical industry, managed TVK for two decades from July 1, 1965 to December 31, 1988. His name became a hallmark of a whole period in the company history, because his excellent organization skills made all TVK projects successfully implemented.

A yearly 250 thousand tons capacity olefin plant, polypropylene plants with a combined capacity of 90 thousand tons, and polyethylene plants with a total capacity of 195 thousand tons were built during the period he managed TVK. A part of the production quantities generated by the polyethylene and polypropylene plants was processed in the Plastics Processing Plant, whose yearly production capacity had been expanded to 100 thousand of tons in earlier years, while the remaining amounts were realized in domestic and foreign markets.

Former minister of chemical industries and later deputy prime minister Dr. Gyula Szekér had undying merits in the successes of both Andor Huszár and TVK. As head of the chemical development in the country, his directing and supporting role was invaluable in an era when the heads of various industrial branches keenly lobbied to obtain state sources for their projects. Andor Huszár as well, was member of the panel, which decided what and where to build. Their good work relationship and cooperation was indispensable for TVK's development.

Contemporaries share the opinion that Andor Huszár created something of lasting value with his unquestionable merits. His name is still remembered as is shown by the commemorative tablets in both TVK and Tiszaújváros.





## Plastics processing expanded

The Plastics Processing Plant began production in late September 1966 by processing polyethylene. Having an initial yearly capacity of 1 500 tons, the plant manufactured 6 million fertilizer bags and 200 tons of agro films a year. Beginning in 1969, milk packaging tubes and finished shrink PVC films were added to its product portfolio. In result of continuous expansions, the Plastics Processing Plant inaugurated a line on November 28, 1971 to produce 12 m wide agro films. Two years later, the plant commenced the production of polyolefin plates and cartonplast products, and in 1977, it began to produce 16 m wide agro films and blown drums, as well. Twelve years after its first sections had been commissioned, the ceremonial inauguration of the Plastics Plant took place in early November 1978.

As part of further expansions in the range of plastics, the pilot operation of a film drawing line or BIAFOL I (to produce films stretched in two directions) had commenced in December 1981, and in next May, its continuous operation began. Owing to successful plant operations and product sales, the BIAFOL II plant was built later on where continuous production would begin on March 29, 1988.



Indicative of the development of the chemical complex, the product range of the plant kept expanding. The company commissioned its Geotextile Plant in early 1987 and began producing non-woven textile representing a new product with a prospect of dynamic development. TVK built its woven bag plant in 1989. In July the same year, the company was capable of manufacturing five-layer films, as well.



Owing to its dynamically expanding product range, the plant processed 100 thousand tons of polyethylene and polypropylene in 1989. Agriculture consumed the largest quantity of plastic films. Polypropylene served as basic material for a variety of products including cups for the dairy industry, films and binding tapes for the packaging industry, and corrugated plastic tubes for agriculture and building industry.

By this time, the modernization of the administration system for warehouse stocks had become timely. The Computer Centre, which had been commissioned in 1981, moved into a new building in 1990. Its task was to systemize and process economic data obtained from the entire IT network of the company.



## Polyethylene production – milestones



The parties to the Hungarian-Soviet Olefin Agreement concluded in 1970 extended the agreement for further 20 years on March 11, 1980, however the yearly 130 thousand tons of ethylene export to the Soviet Union would end in 1986. After the Olefin Plant in Kalush was commissioned the direction of ethylene supplies reversed when the Soviet Union began delivering ethylene to Hungary in a yearly quantity of 60 thousand tons, in return of which Hungary exported polypropylene pellets to the Soviet party. Relying on TVK-made ethylene and ethylene deliveries from Kalush, the management of the company decided to build a new linear polyethylene plant (or HDPE 1).



Considering that in the early 1980's, sales markets for these products were entirely secured, the State Planning Committee gave the green light to the installation of a new plant to produce high and medium density polyethylene grades. The committee reasoned that feedstock basis was available and that predicted demands were high enough to make product sales guaranteed. Final permission was given on February 23, 1983 by the issue of decision N° 5003/83, by which the Planning Committee authorised the installation of a linear polyethylene plant applying Phillips' technology and having a yearly nominal capacity of 140 thousand tons.



**TIPELIN**

Project construction started up on April 4 and progressed at a highly intensive pace to get to completion in 28 months instead of the initially planned 35 months.

The completion of the project almost coincided with the end of ethylene supplies to Kalush when the direction of ethylene supplies reversed. When started up on August 21, 1986, the new plant processed ethylene supplied from Kalush and ethylene produced in TVK.

A network of process control computers, automatically setting the optimal production conditions and quality parameters, greatly contributed to the high standards of the applied technology. To satisfy the increasing needs of sales markets, the plant would expand its yearly capacity to 180 thousand tons later on. The new high and medium density polyethylene products were highly demanded for technical applications and for packaging industry purposes. The permanent demand for polyethylene and the high rate of capacity utilization in the HDPE 1 plant made a furnace expansion necessary in feedstock supplier Olefin Plant, which took place in 1990.

A low-density polyethylene plant, or, LDPE 2 applying BASF's production technology commenced its production on July 3, 1991. The new plant represented another stage in the continuous development of TVK.

New plants being erected continuously required also the development of the tank farm. The erection of new tanks and loading/unloading stations was linked to the construction of every new plant.



**TIPOLEN**



## Polypropylene production starts



Propilla

After the central Petrochemical Development Programme was authorised in 1973, the Council of Ministers brought a decision (N° MT3057/75) on a large-scale state project for a propylene plant on February 13, 1975. The Polypropylene Plant, or, PP 1 with a yearly production capacity of 40 thousand tons was built. The plant, commissioned on September 30, 1978, applied HERUCLES' technology and was intended to satisfy domestic demands and create export opportunities. The Plastics Plant unit was started up in the same year in order to absorb the feedstock produced by the new plant. After the successful completion of its pilot operation, the plant was inaugurated on June 1, 1979.

### TIPPLEN



The increasing demand for polypropylene urged TVK to bring a decision in 1980 to build a new plant, which would apply SUMITOMO's technology. After the initial capacity had been increased by 25%, the new plant generated 50 thousand tons of polypropylene feedstock. The PP 2 Plant began production on October 25, 1983 and it was the first plant in Hungary to operate its processes under microprocessor control completely.

One of the most successful years in TVK's dynamic development was year 1983. This was the year when the Polypropylene Plant was built and a waste incinerator commissioned. The latter used the equipment of SUMITOMO, Japan and eliminated 6800 tons per year solid and liquid wastes, while generating steam.



The third step in the development was made when the new Polypropylene Plant, or PP 3 was built, which operated HIMONT's technology and had a yearly capacity of 60 thousand tons of polypropylene. Production in the plant began in February 1989.



## Political restructuring and transformation

The economic, social, and governmental crisis of the socialist system made certain changes necessary in the life of the company. In 1989, TVK's first joint venture named Polypack Kft was founded. This was followed by a series of similar companies formulated from various TVK plants and sections. Beginning on May 1, the Varnish Paint and Synthetic Resin Plant was converted into a TVK-AKZO joint venture. These events coincided with a sudden halt in the development of the company, which had begun in the late 1980's and lasted until 1994.

The social and political changes in 1989 and 1990 had their impacts in the economic management of the country. These changes did not and could not avoid Tiszai Vegyi Kombinát, either. At the meeting of the Company Council on October 25, 1991 then general manager Sándor Pálfi presented a proposal for resolution to convert the company into a company limited by shares. This meant that, beginning from December 31, 1991, the chemical complex would continue its operation as a state owned corporate sole.



In August 1991, the company commenced to build its quality assurance system based on ISO 9000 standard series. In order to improve its competitiveness, the company had its ISO 9001 quality assurance system audited for its entire production activity in 1993. Two years later this process commenced, four production units, that is, the Olefin Plant, Polyethylene Plant, Polypropylene Plant and the Geotextile Plant received the certificates for their quality assurance systems. On April 5 of the following year, the Plastics Processing Profit Centre obtained its quality assurance certificate, while the Fertilizer Profit Centre received its certification on September 13. A further step was made in quality assurance in March 1995 when the Board of Directors of TVK Ltd. adopted a decision about the introduction of an Environmental Management System in the company.

Fulfilling the requirements of the changing Labor Code, the first Works Council has been elected on May 25 and 26, 1993 at TVK. József Kovács was elected president of the Works Council consisting of 13 members. The election in 2010-11 was the seventh of the Works Council elections, at that time the members were granted a mandate for three years to protect the interests of employees. Trade unions represent employees at TVK since 1959, at the present there are three trade unions at the company.



This period coincided with an unfavourable market environment and with the recession in petrochemical industries. This was coupled with a sudden halt in the development of Tiszai Vegyi Kombinát in the early 1990's. The recession went on until 1994 and had a serious impact on the profitability of operations, because the company was unable to realize high feedstock prices in its sales prices.

Under these circumstances, the company decided to transfer its activities that were not closely related to its core activity to economic organizations and to phase out its unprofitable divisions. Ammonia production was the first to fall victim to the changes made necessary by changing market demands: it was shut down in July 1992. The shutdown of fertilizer production came next in June 1995. The towers of the Fertilizer Plant were pulled down in summer, 1998.



## Change of Regime and transition

By spinning off the sections not pertaining to its core operations, the company created a group comprising almost 40 different companies. Besides, the structural changes of the group became unavoidable as well. The year 1995 brought reorganisations, when some of the actually existing structural units and divisions were established. All these changes aimed to modernize the organization along its major product groups. This is how the Olefin Business, Polypropylene Business, LDPE Business, and HDPE Business were set up. While reorganization went on, in May 1995 the Board of Directors adopted the first Code of Ethics of the company.

These changes were followed by the privatization of the company in 1996 when the employees, too could apply for company's shares. The shareholders consisted of the Hungarian state, foreign institutional investors, company employees, domestic institutions, and private individuals.



In 1996, TVK management recognized that an appropriate emblem helped to improve company reputation and recognition. It was clear that the time of the old emblem, that had been in use for almost thirty years and symbolized three gas globes, two dispersion towers, columns, and tail gas stack, was over. TVK management would invite a tender for a new emblem that would demonstrate the shutdown of its fertilizer production, its changed product range, and modernized processes. Of the proposed emblems, the decision makers chose the one, which kept the contours of the old emblem, reminded of the computer age, and appeared in two bright shades of blue.

The waste incinerator plant for the elimination of 7000 tons waste was inaugurated in October 1996 in the presence of the chairman of the Environmental Committee of the Parliament. At the end of the following April, a long-term agreement concluded with BorsodChem for ethylene deliveries by TVK secured a long-term sale of ethylene quantities produced by the company. A company-scale environmental management system had been operating according to ISO 14001 standards since December 1997. TVK was the first Hungarian chemical company to receive this certificate on February 6, 1998.

The today still running Support System for Ideas (ÖTR), which commenced in April 1998, encourage employees' initiatives to improve operation efficiency. The objective was to motivate employees to work out novelty and useful solutions in order to tackle technical, safety and administration problems in the company. ÖTR follows employees' solution ideas from their presentation, through implementation to post evaluation. The solution ideas, which allow cost savings and efficiency improvement are rewarded financially, too. In 15 years following the introduction of ÖTR, a number of employee proposals have been implemented, some of which have increased the results of the company by tens or even hundreds of millions of forints.



In 1998, thirteen companies, most of which were interested in production and processing industries, applied for the National Quality Award established in 1996. Tiszai Vegyi Kombinát won the award on November 13, 1998 in the category of large production companies. In its reasoning, the evaluating committee pointed out that "the quality assurance systems of eight business divisions of TVK has had their ISO 9001 certifications for more than five years, and since 1996, the Safety Division, too, has had this certification".



## Construction of the PP 4 Plant

The company developed a new strategic plan in 1998 and 1999 in order to implement two main objectives: to strengthen petrochemical operations and to sell the production units not closely related with its core activities. At that time, more than 40 companies engaged in different businesses belonged to the group, most members of which would be divested under a forthcoming programme to spin off non-core operations.

As part of the process to strengthen core operations, the chemical complex initiated the construction of a new polypropylene plant. The proposal had been authorised on November 19, 1997 and the foundation stone was laid down in October 1998. The plant had a yearly capacity of 140 thousand tons and ran Himont's Spheriphol (today LyondellBasell) process. The construction of the PP 4 Plant was completed in 2000 when the plant represented the most modern polypropylene plant of the time in Europe. In March 2000, the plant was able to generate products of commercial quality.

The loading/unloading systems of the first propylene plants were erected at the old loading/unloading station of the small ethylene plant, then the propylene unloading system was erected 1989 on the new loading/unloading system of the Olefin plant, in connection with the erection of the PP-3 plant. This was extended and upgraded 1999 in the course of the erection of the PP-4 plant. The horizontal underground cylindrical tanks and also the C3 unloading system equipped with computerized monitoring system were erected and installed at that time, respectively.



## Preparations for developments

In addition to building new plants, the company kept in mind development activities, as well. TVK's world-patented Syntumen process, which allowed converting mixed plastic wastes into reusable industrial feedstock materials, represented one stage of these developments. The process was introduced to the press and specialists on May 11, 2000. The pilot operation of the process was carried out; however, the ongoing divesting strategy to spin off non-core activities would not allow the practical utilization of the process.

The year 2001 was an eventful one, which brought a number of changes in the life of the company. TVK spent the long recession period on rearranging and re-organizing its operations. Furthermore, TVK focused more on divesting some of its companies including the successful Biafol business, which was sold to Radici, Italy, in spring 2001.

On August 13, 2001, the company took an important step in efficiency improvement when an Advanced Process Control (APC) system, formerly installed as part of an overhaul of the Olefin 1 Plant, was first tested in live. APC allowed the plant to improve the operation availability of its equipment and increase the utilization rate thereof, which increased profitability, as well.

The company applied for the European Quality Award in 2001 when it was given a diploma Recognized in Europe for Excellence.



In early 2002, TVK received two important awards for its performance in the preceding year: the Hungarian Business Leaders' Forum gave the company the award Business Life for the Environment. In the same year, TVK, jointly with its affiliate Inno-Comp Kft, won the 2001 Innovation Award of the Ministry of Education for the development of a polypropylene powder grade R 806.

In order to extend the agreement concluded in 1997, TVK signed a long-term blanket agreement with BorsodChem Rt on November 23, 2001 under which TVK would keep supplying ethylene to satisfy BorsodChem's demands in the period from 2004 to 2013.



## As member of the MOL Group

In September 1999, MOL switching to a strategy based upon a complete value chain from mineral oil to chemical industry and taking steps to become an international company, purchased a packet representing 20% of TVK shares. In the following years, MOL and an investor with Austrian-Russian background entered into competition to acquire TVK shares, where MOL would prove to be the winner.

By the end of 2000, MOL had acquired a direct proprietary ratio representing more than 32% of TVK shares, and some more percentage of the shares went into "friendly" hands. These transactions rendered the oil company the largest shareholder of TVK and the fragmented circle of the rest of the shareholders makes it unlikely that any other interest group can acquire the majority of TVK shares (more than 50% of the shares) in the years to come.

The general meeting on April 20, 2001 and the preceding Board Meeting represented a symbolic starting point in TVK's present efforts. This day brought significant changes, namely the Board authorized strategic projects, referred to as the Petrochemical Development Programme, and authorized a long-term feedstock supply contract with Moltrade Mineralimpex.

By purchasing additional shares in September 2001, MOL increased its direct interest in TVK to 34%, and made an option agreement, which would allow it to acquire a majority interest, or more than 50% of TVK shares.

All these events happened before 2004, when TVK began to operate as member of the refinery value chain and a company integrated in MOL Group. In February 2007, MOL's direct and indirect proprietary ratio in TVK went over 94%. TVK's integration into MOL Group increased the stability of the company's financial background and secured safe feedstock supplies, as well. The integration of the petrochemical value chain into the refinery value chain gave mutual benefits to the parties: it improved their operation efficiency and value creating potentials in both the refinery and petrochemical businesses.

The integration process had made TVK's activity become an organic part of MOL's Downstream (or Refinery) Division by early 2013. In the same year, the harmonization of the daily operations of TVK and TIFO will be completed, as well. When implemented, these measures will integrate the management of the daily operations of the production plants at the level of their operating staff as well.

## Petrochemical Development Programme and results

### FOUNDATION STONE PUTTING



The General Meeting – held on April 20, 2001 – authorised the Petrochemical Development Programme (or PFP) for a planned budget of 400 million Euro. The launch of the pertaining projects got the green light in 2002 when MOL became majority shareholder and decisive owner. Under this programme, the company would implement three important expansions in its production capacities including the construction of a new olefin plant, a new high-density polyethylene plant, and capacity increase in the PP 4 Plant, that has been in service since 2000. Furthermore Tank Park was developed also.

The investment, amounting to nearly 110 billion forints, represented a turning point in the life of the company. At the end of 2004, test productions began in both the new olefin plant and new high-density polyethylene plant. The expanded capacity PP 4 Plant was inaugurated on October 18, 2005, following the completion of almost a year's test production. Indicative of the importance of the event, then prime minister Ferenc Gyurcsány attended the inauguration ceremony. By operating world-level technologies installed under the development programme, TVK succeeded to strengthen its leading position in the chemical industry in Central Europe.

### ETHYLENE TANK



### HDPE-2



### Olefin-2



### PFP-INAUGURATION

## Petrochemical Development Programme and results

### 28.5 months

A world record: the Olefin 2 Plant, the longest lasting project of the Programme, was completed in 28.5 months

### 430 million Euros

The project was implemented within its authorised budget of 430 million Euros, or HUF 110 billion.

### 70%

The development programme resulted in 70% increase in TVK's production capacities.

### 600 contracts

For the implementation of the strategic projects, 600 contracts were concluded and 300 contractors involved.

### 10 000 workforce

In the high peak of construction 3000 outsider builders and mechanics worked on the site and 10000 contractors' workforce took part in the implementation altogether.



PETROCHEMICAL DEVELOPMENT PROJECT



### 230 km

About 230 km long piping network was built under the project. Hundreds of kilometres of electric cable routes were built.

### 220 000 pc

As many as 220000 welds were made during the implementation of the project.

### 10 000 m<sup>3</sup>

The new ethylene tank weighs about 6000 tons and is capable of containing 10000 m<sup>3</sup> of ethylene.



In frame of a separate project, which however was closely associated with the new project, TVK and power supplier ÉMÁSZ established a project company at the end of October 2001 for the construction of a new, combined cycle power plant named TVK Power Plant. The unit was intended to meet the steam requirements and partly the energy supply of TVK process plants. Associated with the power plant, also a water preparation plant, worth 3 million forints, was built in order to secure soft water supplies to TVK and TVK Power Plant in the long run. The water preparation plant was commissioned on November 28, 2003, while TVK Power Plant was commissioned on May 12, 2005.

The operation safety and availability of the plants further improved and their production capacities increased in the years following the commissioning of the projects. This was due to the fine-tuning of the technologies, made possible by the APC system, first installed and tested in the Olefin 1 Plant. Gradually, other plants would begin to apply APC to improve operation availability and increase capacities. By now, the two olefin plants have reached a combined production capacity of yearly 660 thousand tons of ethylene, and the five operating polyolefin plants (two polypropylene and three polyethylene plants) have increased their total yearly production capacity to 765 thousand tons of polymer.

## Recognitions

Owing to the good performance of its new plants, the company closed the years 2006 and 2007 with record revenues and profits. In these years, the company's performance was acknowledged both inside and outside MOL Group. The company successfully applied for the Healthy Job Award of the American Chamber of Commerce (AmCham) and won the 3rd prize in December 2006, and would receive a special award in December 2007. In the same year, in recognition of its previous year's HSE performance, TVK won MOL Group Chairman's award established for the category of integrated organisations.

TVK Museum inaugurated on October 10, 2007 presents the history and traditions of the company. On the same day, a permanent exhibition was opened in the column hall on the first floor of the Central Office Building to present the history of the company from the date of issue of the deed of foundation to the date of opening of the museum.



### REACH: Registration, Evaluation, and Authorisation of Chemicals

- » **R**egistration = regisztráció
- » **E**valuation = értékelés
- » **A**uthorisation = engedélyezés
- » of **C**hemicals = vegyi anyagok
- » **R**estriction = korlátozás, betiltás

Date of effect = June 1, 2007.



One of the chief achievements in 2008 was the successful implementation of the first phase of REACH registration. Operating as MOL Petrochemical Division, our company had its materials registered successfully before December 1, 2008, the specified deadline of the first phase of the new EU regulation REACH (Registration, Evaluation and Authorisation of Chemicals), which had come into effect on June 1, 2007. The registered materials and products were the ones, the production and trading of which the company intended to continue after the registration date. Had the products been not pre-registered, or had they failed in pre-registration, would have meant the restriction of company operations.

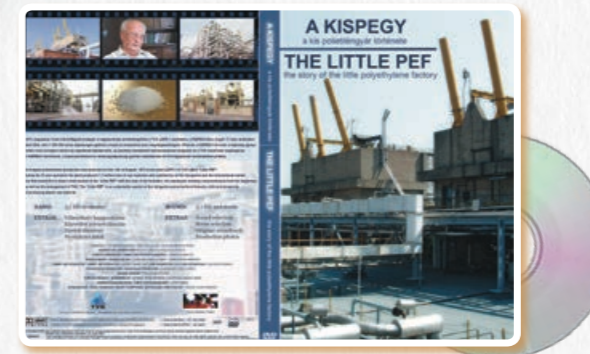
Another recognition of TVK's activity was the Business Superbrands Award won in 2008. The Superbrands programme was launched by a circle of reputable marketing and communication experts in Great Britain nearly one and a half decades ago. The idea has proved excellent, because today the term Superbrands indicates a special qualification in 86 countries of the five continents. The Superbrands programme launched in 2004 in Hungary; the Business Superbrands Awards were granted in 2008 for the first time. Since then, the independent evaluation board granted TVK this award for the 5th time in 2012! Since 2010, Superbrands programme has implied Magyarbrands Awards, which TVK has won in each year.

## Records, anniversaries, and prizes

Many of our plants celebrated anniversaries in 2009. Our PP-3 Plant celebrated the 20th anniversary of the start-up of its production. However, the plant was designed to have an initial capacity of 60 thousand tons per year, later developments and the APC system would increase its rated capacity to 100 thousand tons per year today. When process reliability and the rate of utilization of operation time are considered, the PP 3 and PP 4 plants were among the best twenty in the world and among the best three in Europe in 2007. PP 4 celebrated the 10th anniversary of the start-up of its production on December 3, 2009.



The year 2009 came about with a sad event. On March 16, 2009, the company shut down production in the LDPE 1 Plant, having operated for 39 years, which meant the shutdown of the plant itself. A film was prepared to tell about the history of the legendary plant known as the Small Polyethylene plant.



The year 2009 however did not pass by without bringing award to the company. It happened for the first time for the company to win the title Cyclist Friendly Work Place established by the Environmental and Water Management Ministry and by the Transportation, Telecommunications, and Energy Supplies Ministry for organisations in the category of large companies. TVK has won this recognition in each year, thereafter.



In 2010, the company celebrated a number of anniversaries and awards. On February 1, the Olefin 1 plant celebrated its 35th anniversary of the start-up of its production, and on February 18, HDPE 2 Plant, launched in 2005, celebrated the achievement that it succeeded to produce more than one million tons of products in less than five years of its existence. In November, the company successfully implemented the inspections according to the European Chemical Agency (ECHA) under the second phase of REACH registration obligation based upon a uniform European legislation. This meant that all of our materials concerned received their registration codes before the deadline for registration, which was the end of November.

In the same month, the Hungarian Red Cross acknowledged the company with the title Blood Donor Friendly Work Place, 2010. The song Coming home from home composed by Frigyes Orliczki to acknowledge faithful employees was first sung at a Old Staff Banquet on November 28. The song, which has become popular as Staff Song, is being sung at each Old Staff Banquet since then.



## Another innovation award

In addition to bringing anniversaries, the year 2011 came with organisational changes, too. On July 3, 2011, LDPE 2 Plant celebrated the 20th anniversary of its commissioning, and on August 21, HDPE 1 celebrated the 25th anniversary of its commissioning. In the 25 years of its operation, the latter produced more than 4 million tons of products. Due to some group-level organisational changes implemented in the meantime, TVK and the Petrochemical Business began to work as part of MOL's Downstream Division as of June 1. Because of unprofitable operation, the Compound section of HDPE 1 plant was shut down on October 8 after it had been in service for 25 years.



The result of years' long research was crowned in the Hungarian Parliament building on March 30, 2012 when TVK's product Tipplen K850 received the Hungarian Innovation Grand Prize and the Innovation Award established by the Hungarian Chamber of Commerce and Trade. The product, developed on customer demand in long years' research, became successful in international markets, too. Since the production of this grade started in 2010, all sales quantities had exceeded planned figures, and as of the end of 2012, the product represented 10% of TVK's total polypropylene production.

The most important event in 2012 was the decision about the construction of a butadiene recovery plant. MOL Board had authorised the start-up of the project in spring 2012, and the contract with the best bidder of the tender invited for the implementation was signed in November the same year.

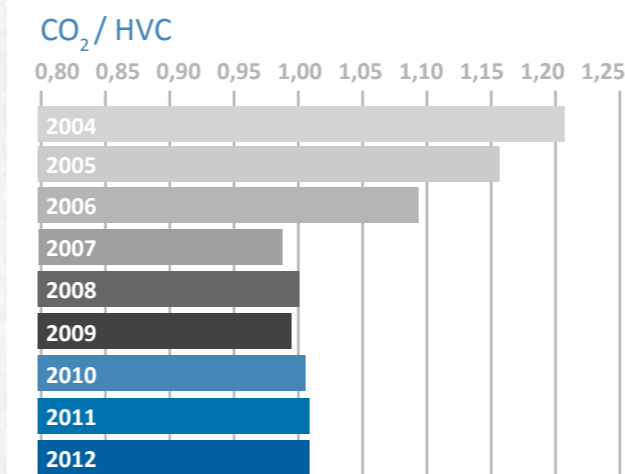


## Reacting to the years of crisis

The oil price explosion in 2008 and the world-scale financial crisis breaking out in autumn the same year, as well as the subsequent economic recession left their marks on the performances of even large international companies. The impacts of increased feedstock and energy prices, eroded margins on petrochemical products, and of slackened demands were badly felt especially in Europe. The crisis would make a number of chemical companies to close down some of their plants, either temporarily or ultimately. Notwithstanding these tough circumstances, causing continuous losses in its profits after tax, TVK remained operative due to its financial safety and safe feedstock supplies allowed by its integration into MOL Group.

The company responded to the challenges of the crisis by improving its operation efficiency and by taking a number of measures to reduce its specific energy consumptions: it rationalized its organisational structure and made its operation processes more efficient by coordinating them with those of MOL refineries. At the completion of the three years' efficiency improving programme launched in MOL Refinery Division in 2012, TVK too will be able to increase its operating profit by about ten billion forints through more efficient operations alone.

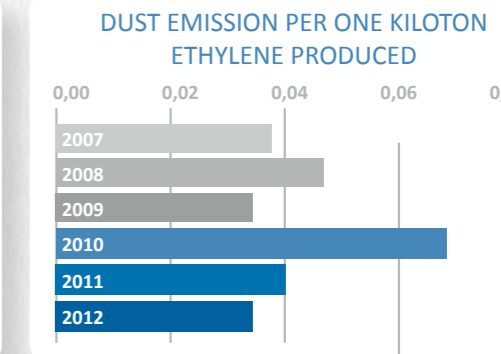
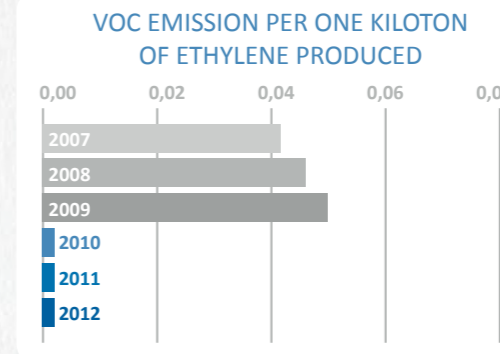
Carbon dioxide emissions from 2004 to 2012



Financial results from 2006 to 2012, in million forints

	2006	2007	2008	2009	2010	2011	2012
Sales revenue	308 736	337 646	323 406	265 372	365 185	411 462	374 591
Net profit	17 271	23 684	-146	-9 192	-1 170	-11 226	-7 499

Air protection from 2007 to 2012



## A new project launched

While permanently improving its operation efficiency, the Company makes efforts to keep capitalizing on the potentials inherent in the better utilization of the petrochemical value chain. One element of these efforts is that TVK management – with the approval of MOL management – has authorized the construction of a butadiene recovery plant with a yearly capacity of 130 thousand tons for a budget of 30 billion forints. According to the plans, the plant will enter into service in early 2015. When compared to polyolefin demands, butadiene demand is more stable and the product is more profitable and less exposed to the ups and downs in the industry and to the cyclic changes in international businesses. If the analyses and plans are approved, the butadiene plant, when built, will create theoretical and practical chances for the company to enter into synthetic rubber markets, which secure more steady demands and profits than polyolefin markets do.

The most important raw material for butadiene production is C4 fractions generated in TVK's processes. It can be re-used for butadiene production more efficiently than for the purposes they have been used for earlier. In addition to this, producers' competition is not as tough in synthetic rubber markets. This is partly accounted for the high polyolefin production capacities, which have recently entered in the Middle East where production is based upon cheap ethane feedstock, primarily. However, due their specifics, polyolefin technologies do not yield C4 fractions in quantities sufficient to build plants to recover butadiene from them.

Notwithstanding the crisis, TVK has been successful to strengthen its market positions in the Central Eastern European region in the period since 2008. The company can expect that efficiency improvements, development projects, which have already commenced, ongoing developments, and continued improvements in effectiveness will secure its future for the coming decades and help it remain number one market player in the region.



## The company today

Tiszai Vegyi Kombinát is a public company limited by shares and the largest chemical complex in Hungary. It is an integrated production company, which converts naphtha and gas oil into ethylene and propylene to produce downstream polypropylene, low-density, medium-density, and high-density polyethylene grades. From 2015, its product portfolio will include butadiene, which will allow the company to manufacture further new products.

The company is in market leader's position and sells more than two thirds of its polyolefin products abroad. The plastic products made of the feedstock generated in the company are indispensable for industrial consumers and for the public, alike. Agriculture is the major consumer of film grades; food industry is the largest consumer of modern packaging materials; building industries absorb most quantities of pipe grades and the automotive industry is the largest consumer for blow-moulded products. The objective of continuous improvements is to develop plastic feedstock materials with excellent quality parameters, which allow the company's plastics processing customers to manufacture competitive products.





## Quality and environmental protection

Traditionally, TVK addresses quality and environmental matters as highly important areas. The company's environmental policy still regards prevention and responsible thinking as being priority issues. According to its management methods, the company coordinates modern control and quality assurance systems with the requirements of healthy and safe work environment.

The company introduced an ISO 9000 environmental management system in its plants in the years from 1991 to 1994. This was followed by the adoption of an Environmental Management System according to ISO 14001 at the end of 1997. Along with the implementation of the environmental objectives, it was especially important for the company to develop employees' environmental awareness and dedication. Five years later, the Work Place Health and Safety Management System (or, MEBIR) was introduced.



The company has made preparations to meet the environmental requirements effective in the European Union. By operating the best available technologies, the company also excels in safety indicators. Due to continuous improvements, the company produced exemplary results in work safety, fire safety, occupational health, and in technical inspections. The company had its materials registered to date according to the requirements of the new EU regulation for the registration of chemicals (or REACH registration).

Being a member of MOL Group and integrating its operations into MOL's refinery value chain, now the company enjoys a lot better economic and financial stability than a single petrochemical market player would. This is especially important in a globalizing market environment where the economies of Central Eastern Europe can connect more deeply with the circulation of the world economy.

These factors, coupled with the work of competent and dedicated employees, secure that TVK has not only its past and present, but its future, too for decades ahead.

## Future replacement personnel - education and training

The company has always been keen to employ highly trained and competent specialists and to secure further training opportunities to them. TVK supports its employees at the beginning of their initial training periods, as well as when they take part in further training sessions after work. In each year of the past decades, the company spent about a hundred million forints on education and training programmes.

The programme Staféta Relay launched in 2006 is worth mentioning here. It is intended to train replacement personnel who will take over foremen's and senior process operators' jobs in the olefin and polyolefin plants. Under this programme four classes have completed their training until now and the fifth class is being trained now. In 2012, a new training program named VUP was launched to support the training of employees to replace those in senior positions. The first class of VUP will complete its training in 2013.



In harmony with MOL group-level programmes, TVK takes part in Growww programme meant to recruit gifted new graduates who just begin their careers.



## After work

The company has for decades contributed to the active relaxation of its employees after work. Beginning in 1977, the guesthouse in Jávorkút in the beautiful natural environment of the Bükk Mountains received TVK employees. The Leisure Time Centre or SZIK was gradually built. The skating rink, opened on November 4, 1981, utilized the cold energy obtained from the evaporation of a part of the liquefied ammonia generated by the Fertilizer Plant.

Subsequently, on April 18, 1986, a swimming pool with a 118-metre long slide and children's pools were built next to the skating rink to utilize waste steam generated in various processes of TVK. Then, a relaxation park and various catering units were added to the facility to serve the relaxation needs of the employees. Both, the Jávorkút guest house and leisure time centre were divested in the first five years of the 21st century as part of the process of spinning off non-core activities.



Laza Pláza



The clubhouse named Laza Pláza was inaugurated on November 27, 1998, which has housed company events and employees' parties ever since.

As part of its care for the former employees, the company established a fund named Borostyán (Ivy) on June 7, 1996 to support former employees retired from their jobs in TVK and in its predecessors of title.

The fund Kinyújtott Kéz (translated outstretched hand) was initiated in 1996 with the aim to improve the living conditions of those who get injured in job accidents or contract occupational or other diseases in connection with their jobs in TVK, to ease the financial losses such employees have to suffer, and to help them and their family members re-integrate into the society.

## The development of Tiszaújváros

The industrial development required to secure housing for the employees. The first apartments had been built by 1958 when 105 apartments with one or one and a half rooms were provided to the first residents of the town. Following this period, a long-term development program was prepared, which planned to build apartments for 10000 residents in its first stage and for 40000 residents in the second (only the first stage of the long-term development programme would be implemented finally). In line with the allocation of the first apartments, a network of public utilities and welfare institutions began to function and provided the necessary services.

On April 2, 1966, the Presidential Council of the Hungarian Peoples' Republic declared the settlement developed from former Tiszaszederkény a town, which was the 66th town of the country. The Culture Centre named after artist Gyula Derkovits was built as a TVK investment project and inaugurated on November 4, 1967. Similarly, many institutions still operating in town were built by TVK from company resources and handed over to the town later on. These include e.g. the first buildings of today's Sports Centre, which were built before 1979.

The hotel known today as Cívus Phoenix Hotel was inaugurated by TVK in 1973 under the name Hotel Olefin. The hotel was divested in April 1997.

Tiszaújváros and TVK have always been in a special relationship. The reason for this is that many institutions, serving the life of the town, were built by TVK from its own resources, even though, in terms of economics, they did not belong to the set of facilities necessary for the core operations of the company. (At that time, the term social role was unknown, though the company operated partly according to its principles.)

The situation changed fundamentally when the company was converted into an organisation limited by shares at the beginning of 1992. Further changes would come in the middle of 1996 when TVK was privatized and its shares floated on the stock exchange. From that time on, the relationships of TVK and town have functioned and still function in the framework of the social role the company undertakes, in addition to the payment of tax and various contributions to the town.



## Social responsibility

TVK established a fund For the Future of Tiszaújváros in June 2000 with the intention to support cultural, educational, health, welfare, sports, and leisure time programmes in the town. The local government joined the fund at the onset, and now TVK and town share the financing of the fund on a fifty-fifty basis. A jointly selected board decides the line of activities, programmes, and institutions to be supported. The grants from this fund support the yearly organisation of the programmes of TVK Triathlon Grand Week in addition to supporting other programmes, as well. In the twelve years from the date of its establishment to the end of 2012, the fund distributed grants in a total of 900 million forints.

Tiszaújváros is the centre of the South Borsod region at the same time. This was the reason why TVK decided to set up a fund TVK for the South Borsod Region (DBA) in order to give support to the training and educational institutions in 31 settlements in the vicinity of the town, primarily. In each year since its foundation, DBA has provided yearly scholarships to fifty gifted, but socially disadvantaged pupils (the yearly scholarship amounts to 60 thousand forints per pupil). Since its establishment in 2000, DBA has given support to the operation of the settlements nearby in a total amount of a hundred thousand forints.



While implementing its programs as part of its social role, TVK addresses the education of the future generation and the protection of the environment as highlighted issues. As part of this, the programme series In one day around TVK is organised with the objective to make TVK operations known and get the youth to like sciences including chemistry. The first programme series was arranged in the local Kazinczy School in April 1997, which has been re-arranged in each year ever since. A further objective is to familiarize primary school pupils with TVK operations and its efforts for the protection of the environment.

The programme presents how chemistry-based sciences, production technologies, and products generated by responsibly managed chemical plants can satisfy the needs of modern societies while releasing much less carbon dioxide and environmental contaminants than they would without using plastic based materials and means.

Later on, the program was expanded in the form of one-day competition on invitation in order to include the schools in the South Borsod region. In 2010, the teams of 120 pupils from 15 schools and the teams of 152 pupils from 19 schools in 2012 entered into competition to test how much they know about chemistry, chemical industry and TVK.

## Social responsibility

The company strengthens its relations with the institutions of medium and higher education, too. It has long years' relationship with the Erdei-Grúz Vocational Secondary School in Debrecen, where chemical technicians are trained, which gives a basis for specialists' replacement in TVK. The company helps medium level education in Tiszaújváros, as well, by spending its vocational training contribution on specific purposes. Here, the Eötvös József Secondary School, Vocational School, and Hostel receives millions of forints as support.

In order to replace specialists with higher degrees, the company established external Petrochemical Faculties in 2009 in cooperation with the Debrecen and Miskolc Universities. These secure opportunities of practice-oriented training for undergraduates in chemical engineering and in chemical mechanical engineering. At the same time, TVK has the chance to find and recruit gifted career starter engineers. In addition to maintaining relations with these universities, the company strengthens its ties to the departments training chemical engineers in the Pannon University and in the Budapest Technical University, too.



As part of its social role, TVK finds it important to build a healthy work environment and create opportunities for its employees so that they can take part in various programmes of personal growth and health protection. The company has for years supported a health programme STEP launched on a MOL group-level initiative. Under this program, the employees can take part in various health-screening actions and participate in the programmes of Sports Day arranged every year. It is a decade long tradition in TVK to support mass sports. Free exercise and keep-fit opportunities are available for the employees throughout the year. If he wishes, almost every employee can find a form of exercise or keep-fit opportunity in TVK.

## June Festival and Old Staff Banquet

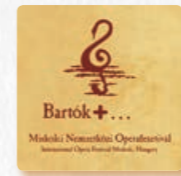
**I**t has become a tradition in TVK to arrange a June Festival in each year when the members of the company family can spend some time together taking part in the programmes of active relaxation and entertainment including sports, stage performance, games and health programmes. In 2012, nearly four thousand people took part in the June feast arranged for the 16th time.



**T**o express the company's appreciation to its faithful employees, in each year since November 2006, the company has arranged a Old Staff Banquet to celebrate those who in the current year have worked for the company for 10, 15, 20, or more years. The awards The Person of the Year, first granted in 2003, and the challenge award For Specialists' Replacement in TVK, established in 2010, are granted at the Old Staff Banquets. Since 2006, the Life Career Awards, established in 2003, have been granted at MOL Group celebrations.

## Social responsibility

**I**n addition to supporting a number of institutions, the company has been a traditional sponsor to the National Theatre in Miskolc since 1996 and has for long years supported the Miskolc International Opera Festival, which has earned international reputation by now. The Tiszadob Piano Festival, the Herman Ottó Museum in Miskolc, and the Hungarian Chemical Museum in Várpalota, are sponsored, too.



**J**ointly with the local government of the town, the company has supported the sports competition TVK Triathlon World Cup and the programmes of the associated Triathlon Grand Week. In 2012, the Triathlon World Cup had been arranged in the town for the 16th time, which was unprecedented in the history of triathlon world cups. In each year, thousands of visitors come here to attend the cultural and mass sports events of the Triathlon Grand Week accompanying the programmes of the Triathlon World Cup. The programmes of the Triathlon Grand Week, arranged for the 14th time in 2012 and the visitors created a real festival atmosphere in the town. Today, the TVK World Cup and associated Triathlon Grand Week are internationally known: the International Triathlon Association has tested many innovative measures in the races held here, which will be introduced in the races of the Olympic Games and in other world competitions. The organisation of the 2010 Triathlon World Competition in Budapest can be accounted for the successful organization of the races in Tiszaújváros.

## Social responsibility



**A**mong the sponsored sports persons, we have to point out figure skater Julia Sebestyén whom the company supported throughout her 15 years' sports career. She was active from 1995 to 2010 and won gold medal at the European Championship on February 7, 2004, in Budapest. She has been the first and sole European champion in women's figure skating in Hungary up to now. Having competed for Hungary at four Olympic Games, Julia first became Tiszaújváros' envoy and a trustee of MOL's foundation New Europe at the beginning of 2012.

**I**n the list of grants to sports, the Tiszaújváros Water Sports Association has an important role. The association, established in 1989, has added a number of medals and good positions to its list of fame in many world competitions. Based on its results in 2011, the Tiszaújváros Association was positioned 11th of 64 members of the Hungarian Kayak-Canoe Association. The Tiszaújváros Water Sport Associations celebrated the 50th anniversary of its foundation in 2012.



## A TVK első számú vezetői 1953-tól napjainkig

» April 1, 1953	– December 31, 1955	<b>László Darvas</b> director
» January 1, 1956	– June 30, 1965	<b>György Dr. Fodor</b> director
» July 1, 1965	– July 14, 1979	<b>Andor Huszár</b> director
» July 15, 1979	– December 31, 1988	<b>Andor Huszár</b> general manager
» April 21, 1988	– October 14, 1988	<b>Lajos Sipőcz</b> acting general manager
» October 12, 1988	– September 16, 1990	<b>Imre Pintér</b> general manager
» November 15, 1990	– December 31, 1991	<b>Sándor Pálfi</b> general manager
» January 1 1992	– July 1, 1993	<b>László Nagy</b> acting general manager
» May 21, 1993	– December 31, 1994	<b>Pál Vanyó</b> acting general manager
» October 7, 1994	– January 1, 1995	<b>László Vígh</b> acting general manager
» January, 1, 1995	– April 27, 1999	<b>Miklós Várhegyi</b> CEO
» April 28, 1999	– September 30, 2000	<b>Sándor Pálfi</b> CEO
» October 1, 2000	– April 20, 2001	<b>Nagy László</b> CEO
» April 27, 2001	– June 30, 2003	<b>József Molnár</b> CEO
» July 1, 2003	– May 31, 2011	<b>Árpád Olvasó</b> CEO
» May 1, 2011	–	<b>Zsolt Pethő</b> CEO

## Some events from the 60 years' history of the company



<b>October 13, 1952</b> - By issuing its Decision N° 0076%52, the National Planning Office authorises the project programme of the Tiszapalkonyai Földgáz Kombinát (Natural Gas Complex, at Tiszapalkonya).	<b>February 23, 1983</b> - In its Decision N° 5003/83, the National Planning Office finally decides on the construction of a Phillips technology linear polyethylene plant with a yearly capacity of 140000 tons.
<b>January 16, 1953</b> - By its Decision N° 00470/8/53, the Council of Ministers establishes the Tiszavidéki Vegyi Kombinát (Chemical Complex on Tisza).	<b>October 25, 1983</b> - The PP 2 Plant, Hungary's first solely microprocessor controlled plant starts up production.
<b>September 1955</b> - The construction of the complex begins.	<b>August 21, 1986</b> - The computer controlled Linear Polyethylene Plant (HDPE 1) begins its operation.
<b>April 1958</b> - The Ministry of Heavy Industries authorizes a project for the Paint and Resin Plant.	<b>February 1989</b> - The PP 3 Plant with a yearly capacity of 6000 tons is put on stream.
<b>November 1958</b> - The Hungarian and Soviet governments conclude an agreement for the supply of the design documentation of a nitrogen fertilizer plant with a yearly capacity of 210000 tons and for the supply of the necessary equipment by the Soviet party.	<b>July 3, 1991</b> - The second Low-Density Polyethylene Plant (LDPE 2) on BASF process begins production.
<b>October 21, 1959</b> - The plant section consisting of the gas line and receiver station begins to operate.	<b>January 1, 1992</b> - As of this day, TVK begins to operate in the form of a company limited by shares.
<b>January 1961</b> - Following five months' pilot operation, production begins in the Paint and Resin Plant.	<b>October 25, 1993</b> - Four TVK plants (Olefin Plant, Polyethylene Plant, Polypropylene Plant, and Geotextile Plant) receive their ISO 9001 quality certificates.
<b>March 22, 1962</b> - The company receives its name, Tiszai Vegyi Kombinát (Tisza Chemical Works).	<b>June 1995</b> - Because of incompetitiveness, fertilizer production is shut down.
<b>August 15, 1964</b> - Being the first section of the fertilizer plant the acid plant starts up.	<b>Summer 1996</b> - TVK's privatization process begins with the introduction of its shares in the stock exchange.
<b>November 29, 1965</b> - Following more than one year of safe operation, the Fertilizer Plant as well as Tiszai Vegyi Kombinát are inaugurated.	<b>October, 1996</b> - After commissioned 13 years earlier, the waste incinerator plant is inaugurated.
<b>July 1, 1965</b> - Andor Huszár, having worked as deputy director before, is appointed director of TVK.	<b>November 13, 1998</b> - TVK wins the National Quality Award.
<b>September 1966</b> - Production begins in the bag plant, the first section of the Plastics Plant.	<b>March 2000</b> - The PP 4 Plant with an initial yearly capacity of 140000 begins commercial operation.
<b>December 20, 1969</b> - In its Decision N ° GB 10.190/69, the Economic Committee adopts the construction of a new Olefin Plant to operate LINDE's production technology.	<b>April 20, 2001</b> - The General Meeting of the company authorizes the elaboration of the Petrochemical Development Programme (PPF) at a budget of 400 million Euro.
<b>August 24, 1970</b> - The first low-density polyethylene plant (or Small Polyethylene Plant) is commissioned.	<b>August 13, 2001</b> - The new process control system, APC takes its debut in the Olefin 1 Plant.
<b>September 15, 1970</b> - The Hungarian-Soviet Olefin Agreement is concluded.	<b>November 28, 2003</b> - The percentage of TVK shares owned directly by MOL and of those in "friendly" hands exceeds 50%. Beginning in early 2004, TVK works as an integrated MOL company.
<b>October 28, 1971</b> - The Low-Density Polyethylene Plant is inaugurated officially.	<b>October 18, 2005</b> - Following one year's pilot operation, the new plants of PPF, that is, the Olefin 2 Plant, HDPE 2 Plant and related additional facilities are inaugurated.
<b>March 3, 1975</b> - Having operated continuously for a month, the Olefin Plant is inaugurated.	<b>February 2007</b> - MOL directly and indirectly owns 94% of TVK shares.
<b>November 1978</b> - The Plastics Plant is inaugurated: it manufactures agro films, hollowed polyolefin plants, cartonplast, milk packaging tubes, and blow moulded drums in addition to bags having been produced since 1966.	<b>March 30, 2012</b> - One TVK product, Tipplen K850 wins the Grand Prize of the 20th Hungarian Innovation Contest, as well as the Innovation Award of the Hungarian Chamber of Commerce and Trade.
<b>June 1, 1979</b> - The inauguration of the Polypropylene Plant (PP 1) with a yearly capacity of 40000 tons takes place.	<b>November 2012</b> - A contract is signed for the implementation of a butadiene recovery plant with the best bidder consortium.

