

TPAO '08 ANNUAL REPORT

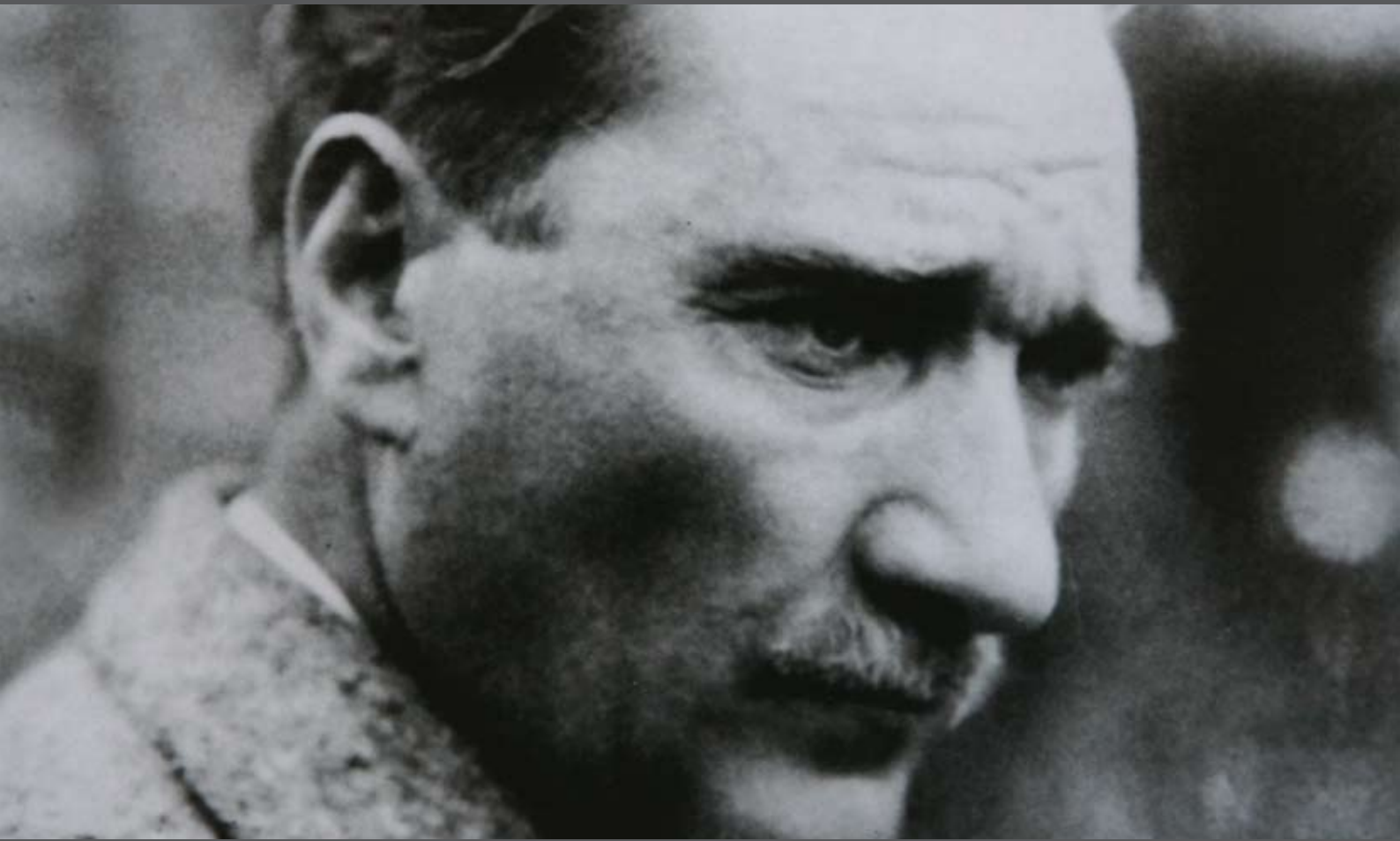


TURKISH PETROLEUM CORPORATION

“When we attempted to accomplish our great duties, our main guide and source of success were our nation’s noble common sense and capacity.”

M. Kemal ATATÜRK





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## our vision

To become a regionally effective world-class energy company meeting Türkiye's oil and natural gas demand and to be the most desired company to work with.

## our mission

To bring out oil and natural gas potential of Türkiye and provide them for the use of Turkish economy, supply new sources of income via international activities and play an effective role in the energy sector, by also actively participating in Türkiye's process of being an Energy Corridor.

## our values

Merit  
Effectiveness and efficiency  
Teamwork and communication  
Openness to change and innovativeness  
Environmental awareness  
Employee satisfaction  
Share of responsibility, knowledge, experience and authorization  
Reliability and honesty



## our strategies

TPAO's ambition is to meet all Türkiye's hydrocarbon demand in near future with increasing national production and also an increasing share of its production outside Türkiye.

To succeed in developing our national and international positions, we must beat the competition from the world class oil and gas companies. To achieve this target, TPAO's Strategic Direction;

### **Growth by;**

- Enlarging its international portfolio and gaining a leading player role especially in the nearby geography,
- Discovering hydrocarbon potential of the country,
- Increasing offshore investments,
- Establishing consortia with the giant companies, sharing risks, transferring know-how and technology.

### **Efficiency by;**

- Measuring and improving the Company efficiency in the operational perspective with its performance criteria as determined in the Corporation Score Card,
- Giving priority to technological innovation.

### **Integration by;**

- Being effective player in natural gas storage, pipeline projects and CNG,
- Carrying out renewable energy projects and looking for cooperations in this regard,
- Offering technical services supplied by Exploration, Production, Drilling, Well Completion Departments and Research Center.

### **Employee Development by;**

- Achieving highly motivated experts and learning individuals who desire to reach company goals through professional training,
- Integrating new personnel swiftly and efficiently.

Chairman and President  
Mehmet UYSAL

Bureau of the Board of  
Directors

Member of the Board  
Yusuf YAZAR

Member of the Board  
Yurdal ÖZTAŞ

Member of the Board  
İsmet SALİHOĞLU

Secretariat  
to the President

Advisor to the  
President

Auditing Committee  
Ahmet ASLAN

Legal Advisory  
Davut İYRAS

Defence Secretariat  
İsmail SİPAHİ

Department of  
Information  
Technology  
Levent ÖZKABAN

Vice President  
Murat ALTIPARMAK

Batman District  
Management  
Erdal COŞKUN (A.)

Department of  
Drilling  
Recep ATALAY

Department of Well  
Completion  
Batuhan TÜTEN

Department of  
Human Resources  
Yahya PEKTAŞ

Department of  
Finance  
Fikri NAYIR

Turkish Petroleum  
Int. Co. Ltd.  
Galip ÖZBEK

Vice President  
Ahmet ADANIR

Thrace District  
Management  
Adnan EROĞLU

Department of  
Production  
Ali TİREK (A.)

Department of  
Planning &  
Coordination  
Veli ÖZTÜRK

Department of  
Machinery Supply &  
Construction  
Recai GÜNGÖR

Department of Health,  
Safety & Environmental  
Protection  
Yusuf AHÇI

Board of Searching  
& Development

Vice President  
Yurdal ÖZTAŞ

Adiyaman District  
Management  
Besim ŞİŞMAN

Department of  
Exploration  
Ömer ŞAHİNTÜRK (A.)

Department of  
Research Center  
Ömer ŞAHİNTÜRK

Department of  
International Projects  
M. Ali KAYA

Offices

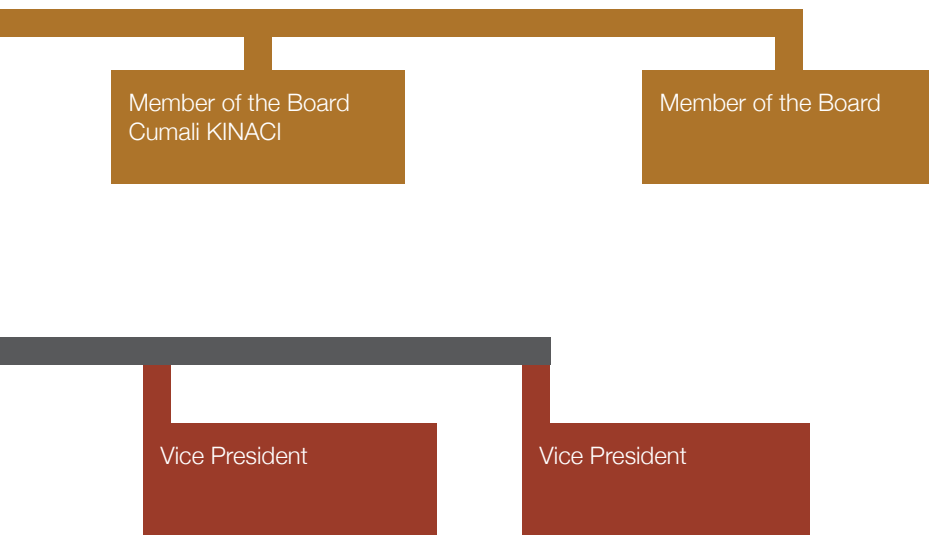
Department of  
Alternative Energies  
Feridun KURU (A.)

Department of  
Strategy  
Hüseyin YAKAR (A.)





## organization chart



message from  
the president

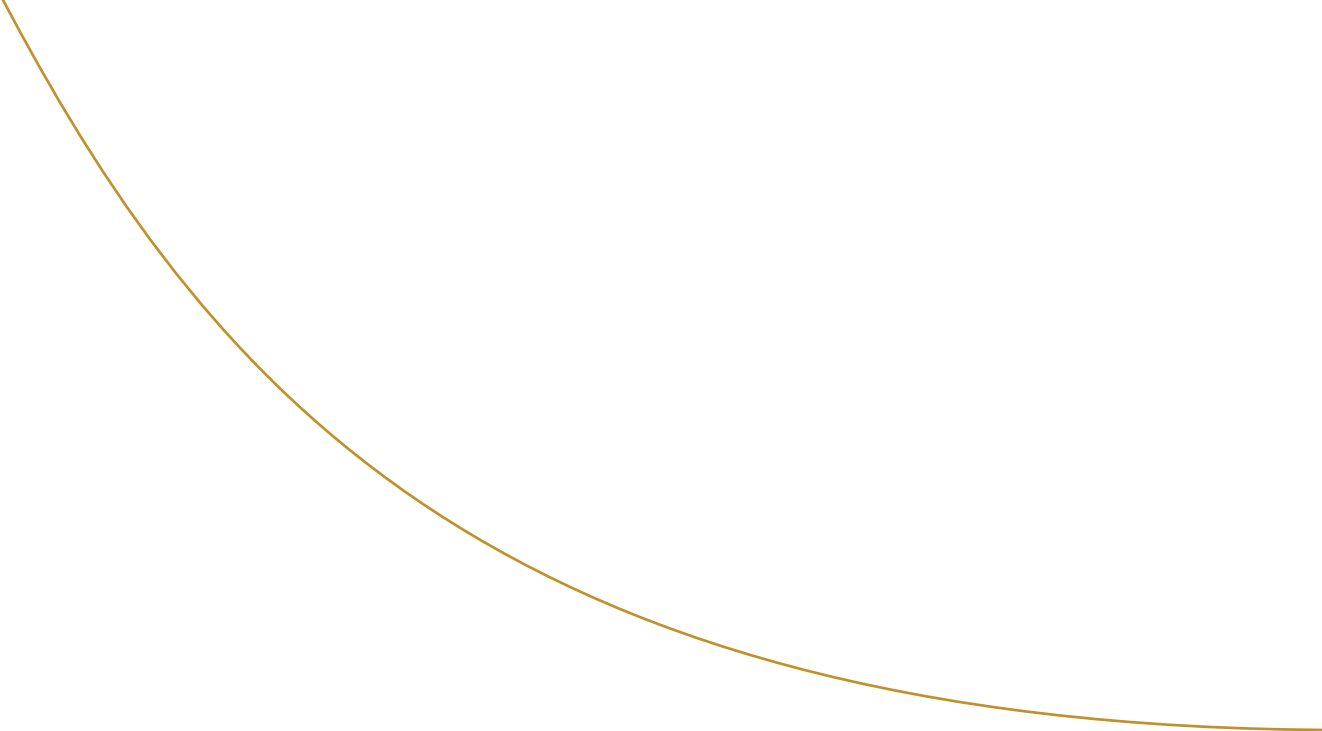
“Türkiye’s role of being the energy corridor as well as the energy center has now been agreed and confirmed by both its neighbouring and distant countries, and it is quite obvious that this effective role will embody the energy world of 21<sup>th</sup> century. ”



**Mehmet UYSAL**

Chairman and President





Türkiye's role of being the energy corridor as well as the energy center has now been agreed and confirmed by both its neighbouring and distant countries, and it is quite obvious that this effective role will embody the energy world of 21<sup>st</sup> century.

Türkiye will definitely improve and strengthen this significant task in energy by positioning herself as a producing country rather than a consuming country in the coming years. As TPAO, we have increasingly expanded our exploration activities since 2002. Now, it is a great contentment for us to express that we have obtained positive outcomes from our successful efforts.

It is estimated that oil and gas imports will cost Türkiye over 600 billion dollars within the period leading up to the Turkish Republic's 100<sup>th</sup> Anniversary. That is why I am convinced that it has become "indispensable" for Türkiye to take all necessary actions in the shortest possible time to reduce the cost of those imports and guarantee our energy security.

Türkiye is ranked as the 17<sup>th</sup> largest economy of the world and has an export value of over 130 billion USD each year. Therefore, increasing the export efforts is directly related with the provision of low-cost energy for the production of exported goods. In order to achieve the goal of providing cheap energy, intensive exploration activities are being carried out at onshore

fields in Thrace, Central and South East Anatolian Regions in addition to the activities performed at offshore areas. These activities resulted in successful oil discoveries in Şambayat/Adıyaman, D.Başpınar/G.antepe, G.Kırtepe/Diyarbakır (under TPAO-NVT Perenco partnership) fields located in the South East Anatolian Region. Being the deepest exploration well in Türkiye, Yuvaköy-1 well is yet to be completed and is hopefully expected to open up new frontiers for our forthcoming exploration studies. As a result of the exploration studies carried out under TPAO-Toreador partnership, 4 natural gas fields were discovered in the Western Black Sea in 2004. Production has been initiated in 3 of these fields and studies regarding the initiation of production from Akçakoca field are in progress.

Following the intensive seismic program performed between 2004 and 2008, and up to the present time, Black Sea has attracted the attention of many oil companies. After the execution of the Joint Operating Agreement with Petrobras in August 2006, TPAO has signed another Joint Operating Agreement with ExxonMobil in November 2008.

It is quite a successful achievement for TPAO that we are now ready to initiate, especially, deep offshore drilling activities in the Black Sea at the last quarter of 2009. Such exploration investments made in the Black Sea are not of strategic value for only TPAO but for our country as well.

“TPAO needs to be restructured to have such a dynamic, energetic and strong form of being to be able to compete with international oil companies. Through the application of necessary regulations, TPAO should possess the identity of an effective and integrated oil company. In this respect, TPAO’s reaching and adopting an integrated and autonomous form of being is regarded as a milestone to gain independence and become self-dependence in energy industry.”

On the other hand, I would like to point out that we have acquired promising results from our investments continuing in the Aegean Sea and the Mediterranean and we will make use of those findings in our exploration periods ahead.

In addition to the developments and the intensive activities performed, we have introduced the service of Silivri Underground Natural Gas Facilities with a total of 1,6 billion m<sup>3</sup> in April 2007, which is regarded as a “first” to our country’s oil industry.

Besides its domestic activities, TPAO has also been conducting intensive studies abroad. Production activities in Azerbaijan and Kazakhstan are being carried out through partnerships. While production and development studies are performed in Kazakhstan, exploration studies are conducted in Libya. We signed a Memorandum of Understanding (MOU) with our neighbour Iran, in November 2008, which covers the development of some blocks located at the South Persian fields.

In order to apply to the 1<sup>st</sup> tender announced by the Iraqi Ministry of Oil, we are carrying on our evaluations and studies regarding the establishment of a consortium. On the other hand, to be able to coordinate the activities in Iraq, TPAO is planning to open its branch Office in Bagdat as soon as possible.

We are especially emphasizing the development of joint exploration and production projects with neighbouring

countries including Georgia, Iran, Iraq and Syria, while continuing our intensive business development activities in Russia, Ukraine, Algeria, Egypt, Sudan, Yemen and Brazil. Two exploration projects carried out in Colombia are executed through TPIC.

TPAO has well-trained, qualified and experienced staff. In recent years, we provide scholarships to a hundred students attending postgraduate programs abroad, in addition to the improved national/international on the job training and development programs.

These education programs aim at enriching and improving our human resources for the future. Just as past achievement relied on a well qualified and experienced staff, we are aware of the fact that we will need a similar staff organization for our future success.

Our priority task and objective is to meet and respond to the oil and natural gas demand of identity and become a self-sufficient country in this industry. Thus, to achieve this goal, TPAO needs to be restructured to have such a dynamic, energetic and strong form of being to be able to compete with international oil companies. Through the application of necessary regulations, TPAO should possess the identity of an effective and integrated oil company. In this respect, TPAO’s reaching and adopting an integrated and autonomous form of being is regarded as a milestone to gain independence and become self-dependence in energy industry.



“

TPAO has well-trained, qualified and experienced staff. In recent years, we provide scholarships to a hundred students attending postgraduate programs abroad, in addition to the improved national/international on the job training and development programs.”

## board of directors

Yusuf YAZAR  
Member of the Board

Mehmet UYSAL  
Chairman and President

İsmet SALİHOĞLU  
Member of the Board

Yurdal ÖZTAŞ  
Member of the Board  
and Vice President

Cumali KINACI  
Member of the Board



## general management

**Yurdal ÖZTAŞ**  
Member of the Board  
and Vice President

**Mehmet UYSAL**  
Chairman and President

**Murat ALTIPARMAK**  
Vice President

**Ahmet ADANIR**  
Vice President

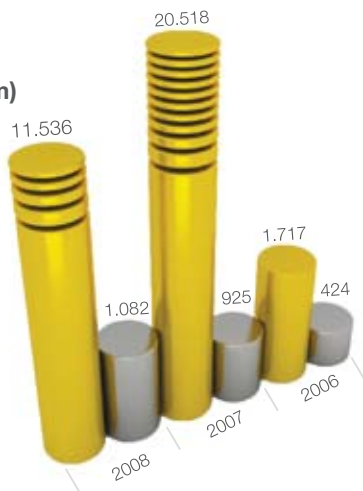






### 2D Seismic Activities (km)

■ Onshore 2D  
■ Offshore 2D

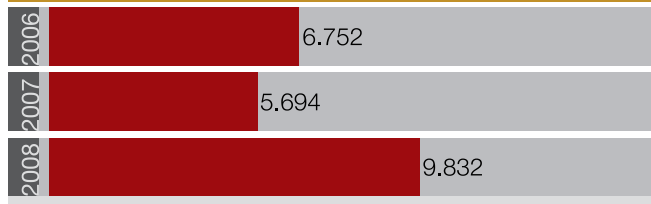


### 3D Seismic Activities (km²)

■ Onshore 3D  
■ Offshore 3D

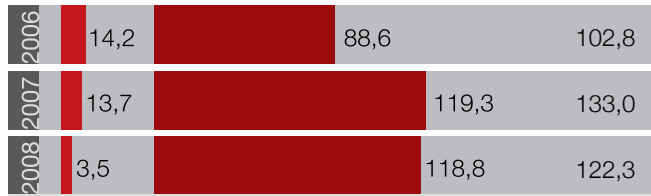


### Geological Activities (km²)



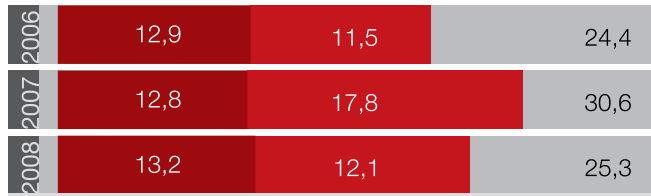
### Drilling Activities (Thousand Meters)

■ Onshore  
■ Offshore

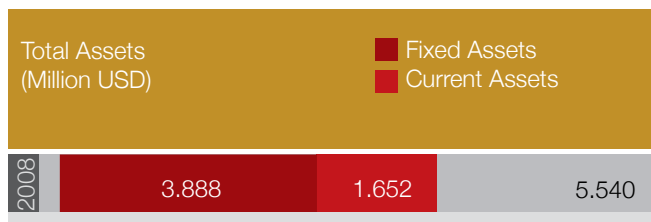


### Total HC Production (Million Barrels)

■ Domestic  
■ International

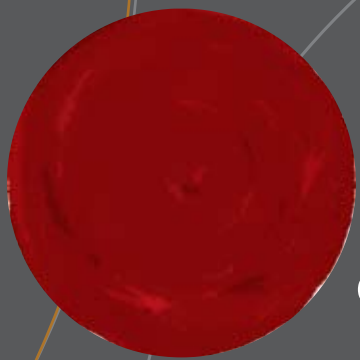


### 2008 Consolidated Summary Information on Balance Sheet (Million USD)



Total Liabilities (Million USD)  
■ Shareholders Equity  
■ Long-Term Liabilities  
■ Short-Term Liabilities





# company profile

**Total Capital and Operating Expenditures (Million USD)**

- Domestic Capex
- International Capex
- Domestic Opex

Year	Domestic Capex	International Capex	Domestic Opex	Total
2006	288	416	270	974
2007	346	391	261	998
2008	318	325	324	967

**Total Domestic Sales Revenue (Million USD)**

- Crude Oil
- Natural Gas
- Service
- N. Gas Storage Sales Revenue

Year	Crude Oil	Natural Gas	Service	N. Gas Storage Sales Revenue	Total
2006	570	116	62		748
2007	725	142	13	37	917
2008	783	173	38	17	1,011

**Total International Revenue (Million USD)**

- ACG
- KTM
- SD and SCP
- BTC

Year	ACG	KTM	SD and SCP	BTC	Total
2006	621	43			664
2007	1,019	28	66		1,113
2008	829	30	151	41	1,051

## 2008 Summary Information on Income Statement (Million USD)

### Consolidated Income

- Net Sales
- Other Income



### Consolidated Expenses

- Cost of Sales
- Opex
- Other Expenses



### Consolidated Net Profit

- Consolidated Income
- Consolidated Expenses and Tax
- Consolidated Net Profit



## domestic exploration and production activities



In accordance with our company's vision, mission and strategies, exploration and production activities carried out in 2008 have intensively covered offshore fields as well as the Thrace, Middle Anatolia Basins, Eastern Anatolia, South Eastern Anatolia Regions.

Nowadays, TPAO which sets target for meeting Türkiye's continuously increasing oil and natural gas demand from own resources, also views and adopts itself with the integration process of international oil companies and carries out its studies for the establishment of a competitive, secure, transparent and balanced market conditions for all oil companies engaging in oil and gas exploration business in Türkiye's oil market.

In 2004, TPAO has set its vision and mission for meeting Türkiye's continuously increasing oil and natural gas demand through domestic and international exploration and production means and has made a boom in its domestic investments by setting its new exploration strategy in the recent years by extending its activities in unexplored basins of Türkiye and especially offshore.

Especially, following Ayazlı gas discovery in the Black Sea in 2004, new exploration, establishment processes, well drilling programs were carried out and additional drilling operations were performed on offshore Akçakoca. In addition, 2D and 3D seismic surveys were realized to expose the hydrocarbon potential onshore lying along the territorial waters of the Black Sea.

Designations of hopeful structures as a result of exploration studies have great importance for TPAO's future exploration objectives. To reveal hydrocarbon potentials in the region, TPAO aimed at accelerating joint venture relationships with foreign oil companies in 2008 as well, by diversifying investment risks and using the latest technology.

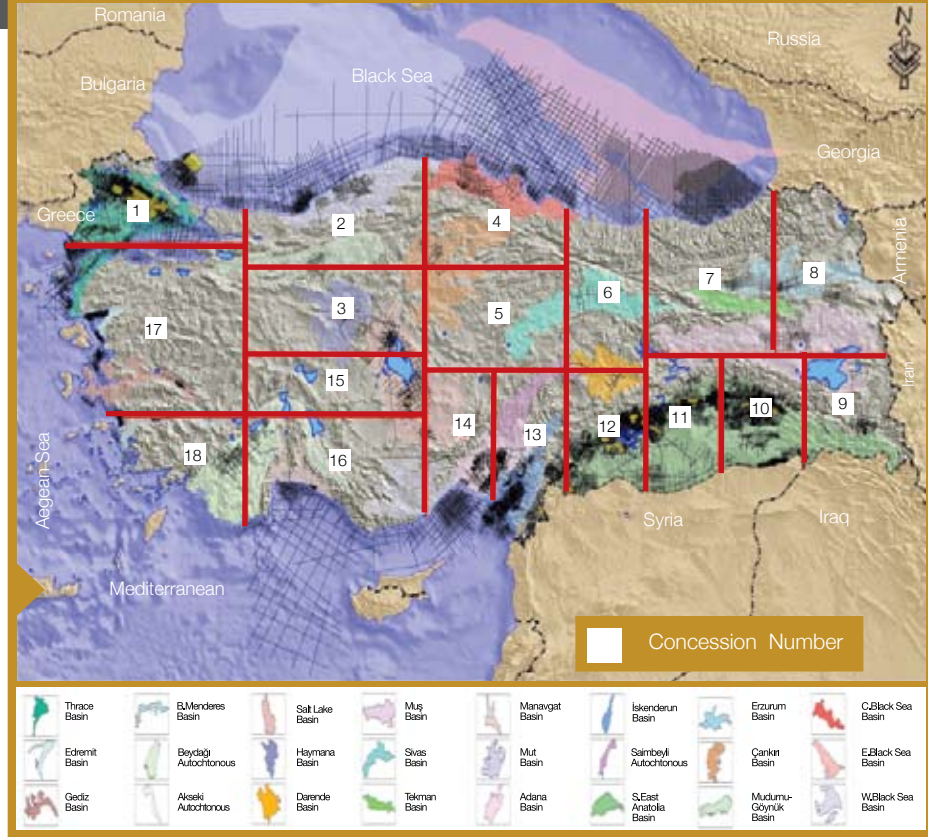
In addition to well-known fields, TPAO has continued its exploration and drilling activities to determine hydrocarbon potential of new fields. As a result of the exploration, drilling activities and achievements of considerable indications about the hydrocarbon potentials of these new exploration sites, geological-geophysical studies have been continuing.

### **We are Exploring All Offshore Fields Of Türkiye**

In the last five years, including 2008, a total of 65.000 km of 2D offshore and approx. 10.000 km<sup>2</sup> of 3D offshore seismic surveys were realized. With evaluation of acquired geophysical data, it is planned to intensify drilling activities on offshore fields in the coming years. With these studies, it has been targeted to give a further fillip to the country's economy by probable oil and natural gas discoveries.

Total amount of offshore seismic surveys realized in the last five years is much more than seismic surveys performed during TPAO's 55 years long history. This situation confirms the importance attached to offshore hydrocarbon explorations in recent years.

## Exploration Regions in Türkiye



Throughout 2008, interpretation studies of 2D seismic lines that were acquired in previous years in the Antalya, Mersin and Iskenderun Bays have continued. The preparations of the farm-out process that have been planned for 2009 have been completed. In this context, meetings with foreign companies have started for the licenses of the Antalya, Mersin and Iskenderun Bays.

In 2006, 3.900 km of 2D seismic data was acquired from the east, south and west side of Cyprus. Interpretation of these data provided us detailed information for Syria and Lebanon offshore, planned to be a part of farm-out process in 2008, and also for the area situated in the west of Cyprus.

Together with great perseverance, enthusiasm and expectations, TPAO has given priority to realize exploration, drilling and production investment programs also at onshore fields.

Offshore drilling operations are being carried out intensively at the peak level. TPAO has drilled 3 offshore wells in the Black Sea through her own efforts and 4 offshore wells were drilled in the Western Black Sea within the scope of TPAO-TOREADOR-STRATIC partnership in 2007. On the other hand, TPAO drilled 1 well through her own efforts in 2008 in Aegean offshore.

As of 2008, TPAO performed 49 05/30 crew/month geological field survey with 9.832 km<sup>2</sup> of areal coverage in 16 different oil exploration zones by our seismic crews, four as immobilized and the others as mobilized, at the Thrace, Marmara, Aegean, Black Sea, Mediterranean, Central, Eastern and South Eastern Anatolia Regions.



Yuvaköy-1 Drilling / Burdur

Well Name	Province	Spud Date	Completion Date	Total Depth (m)
Demre-1	Antalya	1985	1987	6.111
Boyluca-1	Batman	1979	1982	5.745
Kaş-1	Antalya	1988	1989	5.298
Çelikli-101	Siirt	1985	1986	5.195
Büyükalan-1	Burdur	1988	1989	5.190
Çorlu-3/A	Tekirdağ	1985	1986	5.043
Silopi-1	Şırnak	2006	2007	4.950
Akkuyu-1	Adana	1989	1990	4.871
Yuvaköy-1	Burdur	2007	Cont.	6.800
Cumalar-1	Adana	1988	1989	4.829
Kaynarca-1	Tekirdağ	1982	1983	4.828
Okçular-1	Siirt	2005	2007	4.494

Deepest Wells Drilled by TPAO

## Drilling Activities

In 2008, TPAO realized most of its drilling activities at Thrace, South Eastern Anatolia Regions and Other Regions besides one offshore well with West Black Sea Project at the west of Gelibolu semi-island in Aegean sea as well as in new areas.

Although drilling of 71 wells were planned in 2008, drilling activities were realized 73 wells in paralel with good results and developments obtained and drilling of 63 wells were completed. TPAO accelerated its oil and natural gas exploration and drilling activities 2 folds at onshore and offshore fields in the last four years. In addition to the explored basins, TPAO has continued its exploration and drilling activities at the unexplored basins such as the border of Syria, Adana, Diyarbakır, Hatay, Burdur, Gaziantep and as a result, it has acquired significant data to determine hydrocarbon potentials of those fields.

## Discoveries

### Crude Oil

Derindere-1 and Kösele-1 exploration wells drilled in X. Concession Region and Suvarlı-4 appraisal wells were completed as "oil wells".

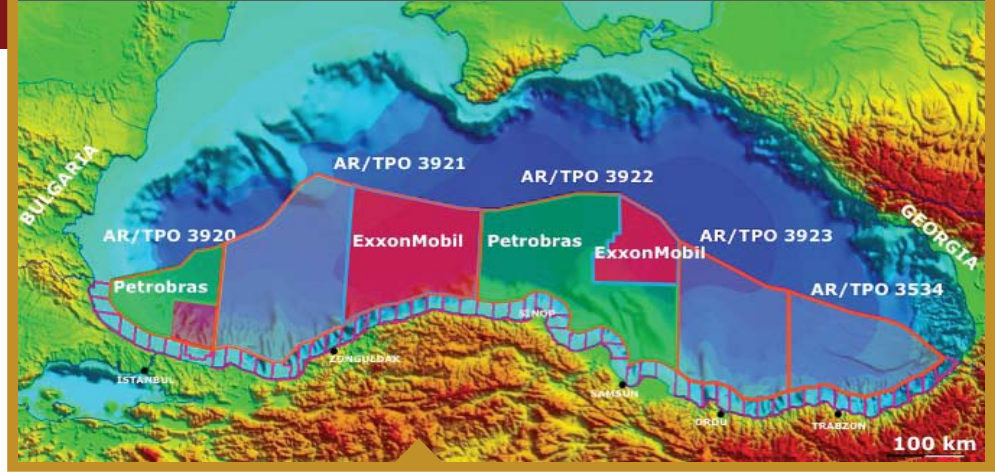
D. Çemberlitaş-1, Şambayat-1 exploration wells drilled in XII. Concession Region and also, B. Gökçe-2,3,4 and 5 appraisal wells were completed as "oil wells". G.Kırtepe-2 and 3 appraisal wells drilled by TPAO-PERENCO joint venture were completed as "oil wells".

### Natural Gas

Kaynaklı-1, Saranlı-1 and Alacaoğlu-3 wells drilled by TPAO in Thrace Region were completed as "gas wells".

Dikilitaş-1 exploration well, Dikilitaş-2 and Adatepe-7 appraisal wells drilled jointly by TPAO-AMITY OIL in Thrace were completed as "gas wells".

<b>Akçakoca</b>		<b>Kırklareli</b>		<b>Kastamonu</b>	
TPAO	51 %	PETROBRAS	50 %	EXXONMOBIL	50 %
TOREADOR	36,75 %	TPAO	50 %	TPAO	50 %
STRATIC	12,25 %				
		Sinop		Samsun	
		PETROBRAS	50 %	EXXONMOBIL	50 %
		TPAO	50 %	TPAO	50 %



TPAO Offshore Exploration Areas in the Black Sea

## Joint Domestic Exploration, Development and Production Activities

### Onshore

#### TPAO-CHEVRON-NVT PERENCO

Within the framework of TPAO-CHEVRON Joint Exploration and Development Agreement signed in 1988, 2D seismic data has been acquired by TPAO seismic crews during June-July period. In this period, synchronous data process studies have been carried out by German TEEC Company and TPAO separately. Amendment II, which defines the change in operatorship as well as the status of the parties, was signed on July 16, 2008. In this context, as of October 15, 2008, TPAO has been assigned as the Operator on 2 blocks. It has been decided to drill the Cudi-1 exploration well as a result of the technical meetings which relied upon the interpretations of the acquired 2D seismic data.

#### TPAO-TOREADOR

Within the framework of TPAO-TOREADOR partnership under the Development of Cendere Field Project, drilling and production activities have been carried out in accordance with the approved 2008 budget and work program. At the end of December 2008, drilling process in Cendere-22 well was started.

#### TPAO-NVT PERENCO

Within the framework of TPAO-NVT PERENCO JV Agreement, oil production activities from G.Kirtepe, Kastel, Karaali and Yalankoz Fields in South Eastern Anatolia Region has continued in 2008.

#### TPAO-AMITY OIL

Under current Joint Operating Agreement for Thrace Basin with AMITY OIL, activities have continued throughout 2008. Dikilitaş-1, Dikilitaş-2 exploration wells and the appraisal well named as Adatepe-7 were drilled jointly during the course of the year. Evaluation studies concerning the location of Dikilitaş-3, Paşaköy-1 and Tekmeşe-1 wells have been started.

## Offshore

### TPAO-TOREADOR-STRATIC

Interpretation studies of K.Ereğlisi well, characterization studies of Akçakoca reservoirs have been carried on and field studies in Akçakoca have been renewed. The connection of the Ayazlı-2A and Ayazlı-3A wells to the pipeline has been carried out on the Ayazlı production platform and wells have been put into production. The planning and coordination studies on reperforation, supplementary reperforation and other completion operations in D.Ayazlı-1, D.Ayazlı-2 and Akkaya-1A wells have been worked out and, operations have been conducted in all of the wells at different intervals. The reparation processes have been completed and production has been restarted.

### TPAO-PETROBRAS

With the aim of determining the Geology of Thrace, the studies have been carried on by the participation of the technical teams of TPAO and PETROBRAS. Within the framework of operatorship of PETROBRAS, seismic data acquired and processed as a part of the Middle Black Sea 2D program while the interpretation of the time levels of the studies has been ongoing. Data-processing studies of 2D seismic data acquisition operations in 2008 were followed up.

Interpretation studies of the Sinop 3D prospect have been completed. As a result of evaluations between our corporation and PETROBRAS, Sinop-1 deep offshore well location has been confirmed. Limanköy 3D data has been reprocessed by PETROBRAS, Kırklareli basin and AVO studies have been performed. As a result of the well location meeting conducted with PETROBRAS, well location of Istranca-1 has been arranged.

### TPAO-EXXONMOBIL

As a part of the farm-out process, a letter of intent has been signed with EXXON MOBIL with the aim of conducting exploration studies in some regions of the Black Sea. The partnership contract that covers Kastamonu-Bartın and Samsun blocks including the revisions offered by both parties has been finalized and signed with a ceremony on November 19, 2008. A workout has been conducted with the EXXON MOBIL about the 2D and 3D seismic programs.



### **Western Black Sea Exploration, Production and Development Project**

In the partnership offshore side, Ayazlı Platform, whose fabrication and assembly were completed in 2007 in the scope of Phase-I, put into production in March 2008 and the produced gas was transported to Çayağzı Natural Gas Process Facility.

After discovery of the gas in Akçakoca Field in 2007, it was decided that the field was economical as a result of the reservoir evaluation during the Phase-II development studies. In the scope of the “development plan”, TPAO signed an EPCI service agreement in September 2008 with GSP (S.C. Grup Servicii Petroliere S.A.), which is a Romanian company, for fabrication and installation of an offshore platform and connection of this platform to the existing offshore trunk pipeline via 7 km, 12” offshore pipeline which is necessary for putting into production from Akçakoca Field. The activities related to Akçakoca Field Drilling / Wellhead Platform and offshore pipeline are still ongoing.



Ayazlı Production Platform / Western Black Sea



Oil Production Pump / Raman

### Domestic Crude Oil Production

In 2008, TPAO produced 10.284.655 barrels (1.517.902 tons) of crude oil from its fields, which constituted 70 % of the total crude oil production of Türkiye. 68 % of the total oil production is from Batman Region, 31 % is from Adiyaman Region and 1 % is from Thrace Region.

The total number of production wells, which was 823 in the early 2008, reached 873 by the end of 2008 with the addition of 38 new and 25 re-completed wells and abandonment of 13 wells.

Serious amount of water was produced from our oil fields as well as oil. In 2008, 92.884.575 barrels of water produced with oil was injected into safe zones in different fields by 69 water injection wells.

Within its policy of keeping the production at the maximum level, TPAO has continued her domestic reserve development and production activities. Declining oil production from heavy oil reservoirs poses a technical challenge. Several reservoir studies are embarked on to offset the production decline and top the upside potential.

### Bati Raman Field Enhanced Oil Recovery Project

Bati Raman statistics show that since the carbon dioxide (CO<sub>2</sub>) injection start-up in 1986, cumulative injection into the field has reached 8,7 billion m<sup>3</sup> and in order to sustain this amount of injection, 6,8 billion m<sup>3</sup> CO<sub>2</sub> was produced from Dodan Field.

By the end of 2008, Bati Raman recovered cumulative oil reserves were 98,8 million barrels, 62,8 million barrels of which is the additional oil coming from CO<sub>2</sub> injection. In 2008, 459,4 million m<sup>3</sup> gas was injected, 361,4 million m<sup>3</sup> of this amount was re-produced and 184,8 million m<sup>3</sup> of this produced gas was re-injected into the reservoir.

Within the scope of water alternating gas injection application in low pressure regions of the field where emulsion problem is controllable, water injection aimed to improve CO<sub>2</sub> sweep efficiency continued in 2008, in total 431 thousand barrels of water alternating with gas was injected into 17 different wells.

Numerical modeling studies of the field were commenced. For this reason, 3D seismic survey and sedimentological analysis were done. New log, core and PVT analyses that are complementary information for existing data were performed. New detailed geological and numerical model were constituted from these updated data and history match studies were started.

In 2008, drilling operations of 17 new vertical wells were completed as "in-fill" wells. In order to extend the life of the project by drying and pressurizing the produced CO<sub>2</sub> gas in the east region for re-injection, the establishment of the second recycle system was finished and start-up working has been continued.

Dodan CO<sub>2</sub> Production Facilities



#### **Raman Field Production Enhancement Project**

Raman Field production enhancement project was started in 1994 and operations to increase oil production have been continuing periodically. 13,9 million barrels of additional oil was produced by means of this project.

4 new wells were drilled in the field to increase oil production in 2008 and well number increased to 236. As results of pilot polymer gel injection (MARCIT) done in 7 wells to reduce water-cut values in 2007 were good, gel injection operation was done in 20 more wells in 2008. About 70.000 barrels of extra oil production was obtained from 7 wells to which gel was injected in 2007. Gross production rates of 12 wells were increased in 2008. A total of 14 abandoned-11 wells after gel operation, 3 wells after workover operation were put into production in 2008. As a result, approximately 130 thousand barrels of additional oil was produced by these operations, in 2008.

#### **Garzan Water Injection Project**

Within the scheme of Garzan Water Injection Project, re-started in 1992 after a long halt since 1983, cumulative injection through 9 wells reached 30.506.682 barrels in Garzan-B field by the end of 2008, where annual injection was 2.258.489 barrels.

In Garzan-C field, cumulative water injection through 6 wells reached 25.903.580 barrels where total annual injection was 802.770 barrels.

Within the scope of Garzan Water Injection Project, approximately 25 million barrels of additional oil in Garzan-B Field and 12 million barrels in Garzan-C Field were produced by the end of 2008.

#### **Bati Kozluca Field Water Alternating Gas Injection (WAG) Project**

CO<sub>2</sub>/WAG feasibility in Bati Kozluca Field was investigated through a reservoir study and promising results led to investments for the application. CO<sub>2</sub> injection from 6 injection wells started in May 2003.

By the end of December 2008, cumulative gas injection reached 5.294 million scf (150 million sm<sup>3</sup>). The injection process is still underway.

In order to increase the effect of CO<sub>2</sub> injection, additional 11 wells were drilled at the B.Kozluca Field.

### Domestic Natural Gas Production

In 2008, TPAO's cumulative natural gas production was 495.586.522 sm<sup>3</sup>. The gas produced in Thrace Region was sold to 26 local companies, the gas produced from Çamurlu field in Batman Region was sold to a regional boarding school and to two companies in the region. In Adıyaman Region, gas released from produced oil was sold to a company and a school.

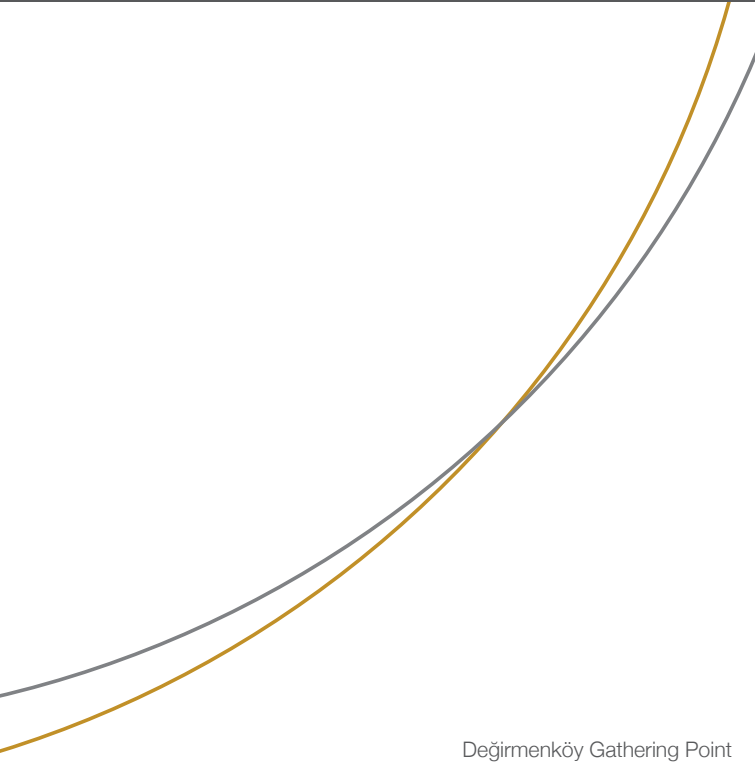
97,1 % of the total natural gas production is from Thrace Region, 2,2 % is from Batman Region and 0,7 % is from Adıyaman Region.

The oil equivalent of the gas output is 2.915.214 barrels. Thus, TPAO's cumulative hydrocarbon production reached 13.199.869 barrels by the end of 2008.

### Kuzey Marmara and Değirmenköy Fields Underground Natural Gas Storage Project

Kuzey Marmara and Değirmenköy Fields Underground Natural Gas Storage Facilities started commercial activity on April 13, 2007, completed the first storage period successfully and continued their injection and withdrawal operations in the second storage period.

Gas demand of our country tends to increase, therefore new storage facilities are urgently needed. BOTAŞ and Ministry of Energy and Natural Resources ask TPAO to increase the natural gas storage and withdrawal capacity rapidly. Therefore, TPAO anticipates to increase the daily withdrawal capacities of existing facilities up to maximum 40-50 million sm<sup>3</sup> within 3 phase (Phase I, Phase II, Phase III) by the end of 2012 and necessary works for Phase I and Phase II have already been started in 2008.



Değirmenköy Gathering Point



Silivri Natural Gas Storage Facilities



## international exploration and production activities

TPAO's Primary Business Development Fields for the next 5 years, are determined as Middle East, North Africa and Caspian Region, having two-third of the world's proved oil reserves.

Since the early 1990's TPAO, with her international activities, has become one of the important actors in the region. TPAO's international production in 2007 exceeded her domestic production amount. The greatest portion of the international production is from Azeri-Chirag-Guneshli Project in Azerbaijan. Upon putting BTC crude oil pipeline into operation in 2006, production of Azerbaijan projects is expected to increase and reach peak levels in 2010-2011.

As a shareholder of Shah Deniz Project, TPAO also started her first international natural gas production in March 2007 after completing and putting SCP Natural Gas Pipeline into operation in 2006 winter. With this production, TPAO started to meet a part of Türkiye's domestic gas demand from abroad. TPAO's production is continuing in her fields in Kazakhstan and efficiency achieved during operations carried out with KazMunayGaz increases our expectations.

In and beyond 2009, TPAO will exploit her reserves in the regional geography, and focus on certain countries priorities of which were determined as a result of global survey conducted throughout 2008, and work harder to increase her reserves. Because of the necessity of adding new reserves and turning

these reserves into production immediately to achieve its strategic targets, international activities become more and more important. Being aware of the strategic importance of energy for ensuring Türkiye's security of supply, TPAO has set her roadmaps and action plans according to her objectives in the years ahead.



Yelemez Station / Kazakhstan

## Caspian Region

It is estimated that, Caspian Region holds 4% of the world oil reserves and 6% of the gas reserves.

Because of the cultural and historical ties, Caspian Region has a special importance and value for Türkiye. Due to her significant role in transporting of energy resources to western markets and becoming an energy hub and settling stability in the Region, Türkiye will increase her strategic and geopolitical power in the field.

### TPAO is in the North Eastern Coast of Caspian;

#### Kazakhstan

TPAO conducts her activities in Kazakhstan through her Joint Venture KazakhTurkMunai (KTM) Ltd. in which TPAO holds a 49 % share and KazMunaiGas has 51 %. The joint company has 1 concession in Aktau Region and 2 in Aktobe Region of the Western Kazakhstan. Exploration and production activities are ongoing with a total of 24 wells located in 7 fields in these 3 licences.

In 2008, average production of the joint venture was realized as 1.700 barrels/day in Aktau Region and 2.700 barrels/day in Aktubinsk Region with a total TPAO share of 2.500 b/d.

Since 1993, TPAO has been carrying out her activities in Kazakhstan and intends to grow her portfolio in this country, which is in the focus of interest with its intense oil reserves.

By the end of 2008; yearly crude oil production is 1,6 million barrels (TPAO's share is 0,90 million barrels), cumulative crude oil production is 21,7 million barrels (TPAO's share is 13,97 million barrels) and crude oil reserves are 34,1 million barrels (TPAO's share is 17,57 million barrels).



Caspian Sea & TPAO's Projects



Sangachal Terminal



ACG Platform

## TPAO is in the Caspian Sea;

### Azerbaijan Exploration-Production & Transportation Projects

In Azerbaijan, TPAO is currently a participant of 3 exploration, development and production projects. These are; Azeri-Chirag-Guneshli (6,75 %), Shah Deniz (9 %) and Alov (10 %) Projects.

Furthermore, TPAO has a share of 6,53 % in the BTC Co. which was established for carrying out all activities of Baku-Tbilisi-Ceyhan Main Export Crude Oil Pipeline Project and 9 % share in South Caucasus Natural Gas Pipeline Project, which will transport Shah Deniz gas to Türkiye-Georgia border.

### Azeri-Chirag-Guneshli (ACG) Project

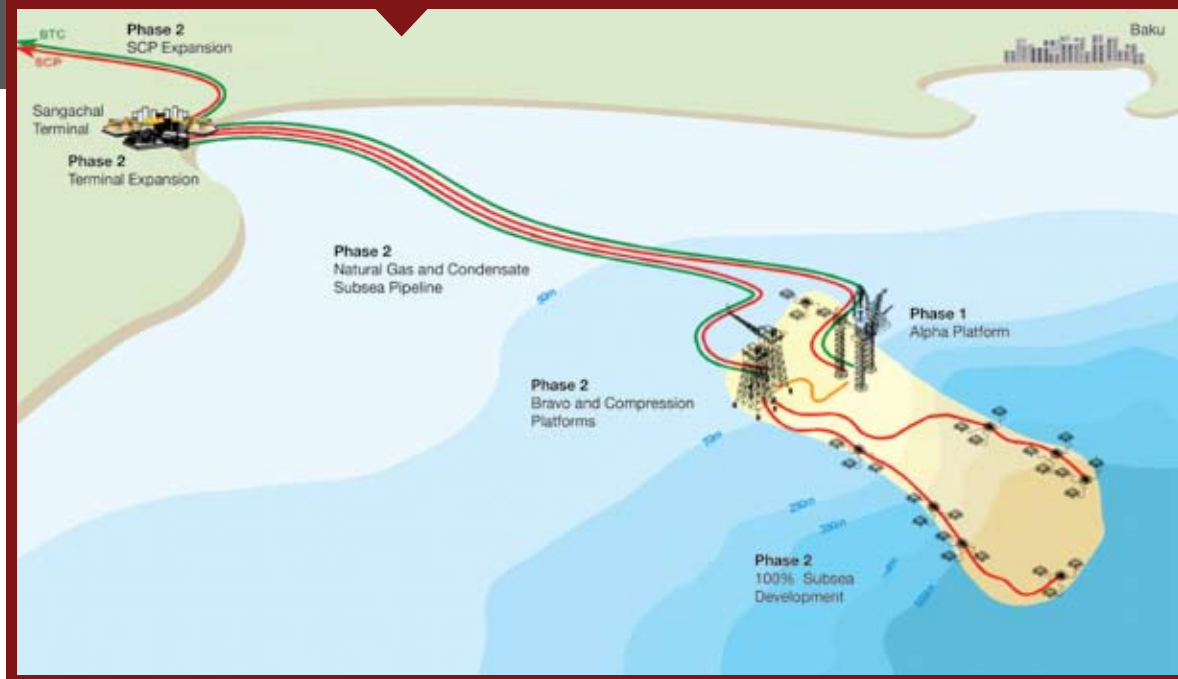
In 1994, the Joint Development and Production Sharing Agreement for ACG Project was signed in Baku among the State Oil Company of the Azerbaijan Republic (SOCAR) and the business consortium constituted by the foreign companies.

Throughout the ACG Project having 5,4 billion barrels of oil reserves, and producing 1,044 million barrels of crude oil (TPAO share; 65 million barrels), crude oil production is foreseen to reach 1,0 million barrels in 2010, while it was 690.000 barrels/day on the average in 2008. In 2008, 251,99 million barrels of oil (TPAO's share; 7,36 million barrels) was produced.

ACG Project has been developing in phases. The production started from Chirag field (the early oil project) in November 1997. The Phase-1 (Development of the Central Azeri Field) was put into production in February 2005. The production of the Phase-2 (Development of the West and East Azeri Fields) were commenced in January 2006 (West Azeri) and in October 2006 (East Azeri). The production of Phase-3 (Development of Deep Water Guneshli Field) was started up in April 2008. The engineering and design studies of Chirag Oil Project (COP) which aims to produce oil from undepleted area between the existing platforms in Chirag and Deep Water Guneshli are ongoing.



## Shah Deniz



### Shah Deniz Project

The Shah Deniz Structure is in the offshore South Caspian Sea, 70 km southeast of Baku and 70 km southwest of Azeri-Chirag-Guneshli field. The concession has an areal coverage of approximately 860 km<sup>2</sup>.

In 2001, the Minimum Obligatory Work Program of the Exploration and the Extended Exploration Periods were completed. The Sales and Purchasing Agreement (SPA) between BOTAS and SOCAR within the scope of Phase-1 for the natural gas discovered in the Project which had 625 billion m<sup>3</sup> natural gas and 750 million barrel condensate reservoirs and Intergovernmental Agreement between Turkiye and Georgia and Turkiye and Azerbaijan were signed.

According to the SPA, 6,6 billion m<sup>3</sup> of natural gas (at plato level) will be delivered to Turkiye for 15 years. Project will also supply gas to Azerbaijan, Georgia and to BTC as fuel. Within the scope of Phase-1, total sale is estimated to be 8.6 billion m<sup>3</sup> / year.

With the Shah Deniz Phase-1 Field Development and Construction Decision, construction period started in 2003 and commercial production was started on March 7, 2007 and is currently continuing with 4 wells. In 2008, 7,2 billion m<sup>3</sup> natural gas and 14,9 million barrels of condensate were

produced and by the end of 2008, production reached at 10,5 billion m<sup>3</sup> natural gas and 22 million barrels of condensate.

Within the scope of Phase-2, it is estimated that construction decision will be taken in 2010 and first gas delivery will be realized in 2015.

In 2008, TPAO's share of 494 million m<sup>3</sup> natural gas and 1,04 million barrels of condensate from the Shah Deniz Phase-1 Project were sold.

### Alov Project

Alov Exploration Project covers the Araz-Alov-Sharg prospective structures in the Middle of the Southern Caspian Sea, acquiring 385 billion m<sup>3</sup> of natural gas and 5 billion barrels of oil.

EDPSA was signed in 1998 and TPAO joined to the Project by an "Agreement on Participating Interest to be Vested" on July 29, 1998. For the Alov Project, the minimum contractual commitments are 1.400 km<sup>2</sup> of 3D seismic survey and drilling of three exploration wells for the three-year exploration period. The drilling of first exploration well is waiting for the determination of legal status of Caspian Sea and also for rig slot availability afterwards.

### **Pipeline Projects of TPAO Contributing to the Energy Corridor**

In Türkiye, which resides at the intersection of Middle East and Caspian Regions having the major portion of the world oil reserves, the basis of the energy corridor to carry the energy source to the world market was fulfilled by the constructions of BTC and SCP Pipeline Projects.

After the determination of the hydrocarbon potential of Black Sea, the triangle of source in the region hopefully will be completed and this source will flow through the Anatolia axis to reach the market in due time with confidence. TPAO being aware of its responsibility in this axis, has been trying to meet the national oil and gas demand. TPAO will continue her efforts towards increasing her activities and control through the East-West Energy Corridor.

#### **Baku-Tbilisi-Ceyhan Main Export Crude Oil Pipeline (BTC) Project**

Through the BTC Project, the transportation of oil produced in Caspian Region, especially from ACG Project in Azerbaijan to the world markets, in a safe, secure, reliable and environment friendly way has been targeted.

Within the scope of the Project, an approximately 1.768 km long pipeline with 42"-46"-34" diameters and necessary facilities with a nominal capacity of 50 million tons/year, starting from Baku-Azerbaijan passing by Tbilisi-Georgia and ending at Ceyhan-Türkiye, has been constructed. The physical construction was started in April 2003 in all three countries and was completed by end of May 2006. Then first tanker carrying Azeri oil started to be loaded in early June 2006. In July 13, 2006 the inauguration of the BTC Pipeline

was realized in Ceyhan Terminal. Works for the increase of capacity to 1.2 million barrels/day are going on.

Currently, transportation of ACG oil, Shah Deniz condensate and Kazakh Tengiz oil is continuing and from Haydar Aliyev Terminal 245 million barrels of oil was loaded to 313 tankers in 2008. Cumulatively, 513,24 million barrels of Azeri and Kazakh Oil was transported through BTC Pipeline to the world markets with 648 tankers.

#### **South Caucasus Pipeline (SCP) Project**

Within the scope of SCP Project, Shah Deniz natural gas is being transported to Georgian-Turkish border. The SCP passing through the same corridor with BTC is about 690 km in length and 42" in diameter. The pipeline has a transportation capacity of 8,1 billion m<sup>3</sup> of natural gas to Turkish border with one compressor station in Sangachal Terminal in line with the terms of AGSC-BOTAŞ Sales and Purchasing Agreement (SPA). However, it is possible to expand this capacity up to 22 billion m<sup>3</sup> in a year by adding compressor stations.

After commencement of the construction of the pipeline physically in 2004, construction activities have been completed, and pipeline has become ready to transport gas since 26th November 2006. In parallel with the production activities of Shah Deniz, continuous gas transportation was started on March 7, 2007. The pipeline having an investment cost of 1,4 billion USD, is transporting natural gas through Azerbaijan, Georgia, Türkiye and BTC's pump stations in Azerbaijan and Georgia. In 2008, totally 7,2 billion m<sup>3</sup> natural gas was transported and 4,4 billion m<sup>3</sup> of this amount was sold to BOTAŞ. The main target of the project is to transport the gas that will be produced from the Caspian Region to Europe via Türkiye in the future.



## Libya

TPAO's activities in Libya have continued in three exploration concessions.

### Block NC188-NC189 Exploration Project

An Exploration and Production Sharing Agreement (EPSA), signed between Turkish Petroleum Overseas Company (TPOC) and the National Oil Company of Libya (NOC) on Blocks NC188 (Ghadames Basin) and NC189 (Sirte Basin) came into effect in February 2000. The Agreement calls for a 5-year exploration period and commitments of drilling 5 exploration wells and seismic acquisitions in the Blocks mentioned above.

TPOC is the operator in both licences and signed a partnership agreement with ONGC-Videsh Ltd. (OVL), a subsidiary of the Indian National Oil Company (ONGC). The participating interests of the parties are 51% for TPOC (operator) and 49% for OVL.

Concerning the exploration period charges which ended on February 22, 2005, it was extended for 3 years starting from 12 June, 2006 in order to drill the rest 3 wells of the 5 wells which were to be drilled according to the concessions.

In both licences, obligations of seismic data acquisition studies are completed. In 2004, 2 exploration wells, A1-NC188 and B1-NC188, were drilled in the NC188 concession.

In 2007, 563 km 2D additional seismic data was collected and processed in block NC189. Besides, A1-NC189 exploration well was drilled. B1-NC189 exploration well was started in 2008 and it was completed "dry well with oil" on April 7, 2009. In 2009, C1-NC189 exploration well was initiated to be drilled on May 31, 2009.

### Block 147/3-4 Exploration Project

EPSA was signed between NOC and TPOC and came into effect in December 2005. Minimum exploration commitment for the Block covering an area of 2,783 km<sup>2</sup>, consists of drilling two exploration wells and acquisition of 2D and 3D seismic data during the five years of exploration period.

3,410 km 2D seismic data process studies were completed in 2006. In 2007, 573 km 2D and 352 km<sup>2</sup> 3D seismic data acquisitions were realized after evaluation of geological and geophysical studies. In addition, laboratory analyses on core and cutting samples, and detailed studies were realized with the gas samples taken from the wells in and around the licence.

In 2008, processing and interpretation of 2D and 3D seismic data were completed and drilling locations of first two exploration wells were determined. Two exploration wells are planned to be drilled in 2009.

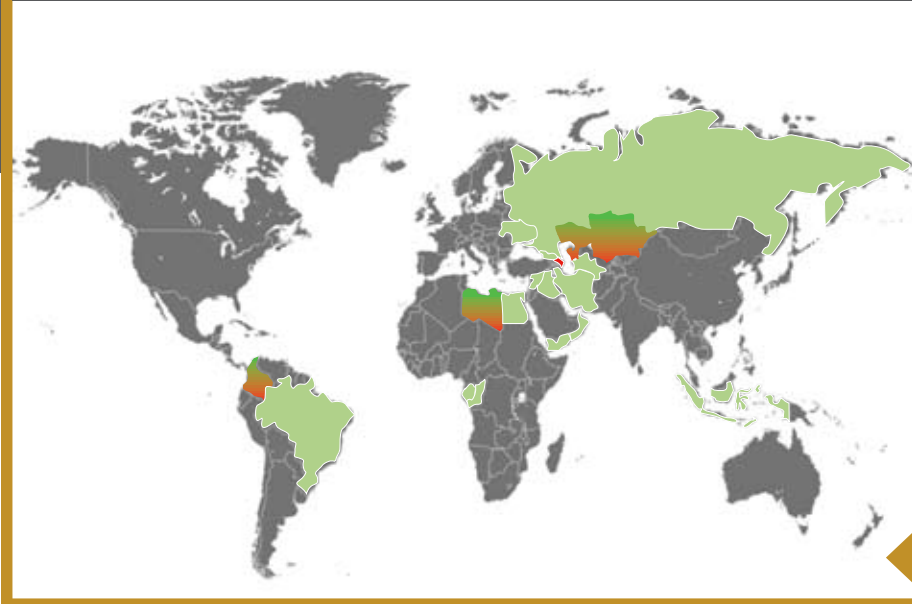
Current Projects



Current Projects/New Ventures



New Ventures



TPAO in the World

## New Ventures

### The Middle East

Due to the vital importance of its crude oil, as a raw material for Industrialization and Mechanization Process, Middle East is always on the agenda with her oil reserves.

Middle East has approximately 63 % (Saudi Arabia 25 %, Iraq 11 %, United Arab Emirates 9 %, Kuwait 9 %, Iran 8,5 %) of the world oil reserves.

### Syria

TPAO is continuing its efforts to negotiate for oil and gas exploration-development and production investments in Syria. In this scope, an Agreement was signed between TPAO and Syrian Petroleum Company - SPC (Syrian National Oil Company) in Ankara on January 4, 2008.

In accordance with the terms of this agreement, it is planned to establish a joint company for developing exploration and production projects in appropriate licences.

### Iran

According to the MOU signed on July 14, 2007, South Pars Field Development and Production Project, 22-23-24 Phases were reserved to TPAO with direct negotiations. In this context, Master Development Plan was delivered to TPAO. The evaluation and studies on this project is being carried out based on the MOU signed on November 17, 2008.

### Iraq

TPAO has been working closely with the Ministry of Oil of Iraq for exploration and production opportunities in Iraq since 1994. TPAO is continuing its efforts in order to post a bid for the development/production fields in the Iraqi 1<sup>st</sup> Petroleum Licensing Round which was announced by Iraq petroleum authority PCLD. Within the context of Gas Export Project of Turkey and Iraq, a MOU has been signed for Exploration, Production, Transportation and Marketing of Iraqi natural gas between TPAO, BOTAS and Shell. Studies are being carried out in this context.

### Turkmenistan

TPAO continued her oil and gas exploration and development projects in onshore and offshore Turkmenistan since 1993. Although Turkmenistan office was closed down in September 2008, our relations have continued.

In parallel with the developments in Turkmenistan, our endeavors to participate in onshore and offshore oil and gas field development projects and to take place in the Transcaspian Natural Gas Pipeline Project with a specific share if it is to be added to agenda, continue.

### Russia

Russia is one of the biggest producer and exporter of hydrocarbons at the global scale. Our company endeavours to acquire shares in production followed by exploration assets in Russia.

### **Ukraine**

Through joint ventures and/or joint companies with the Chornomorneftogaz and other state oil and gas companies and as well as international oil companies, our desire to participate in offshore and onshore oil and gas exploration and development projects continues.

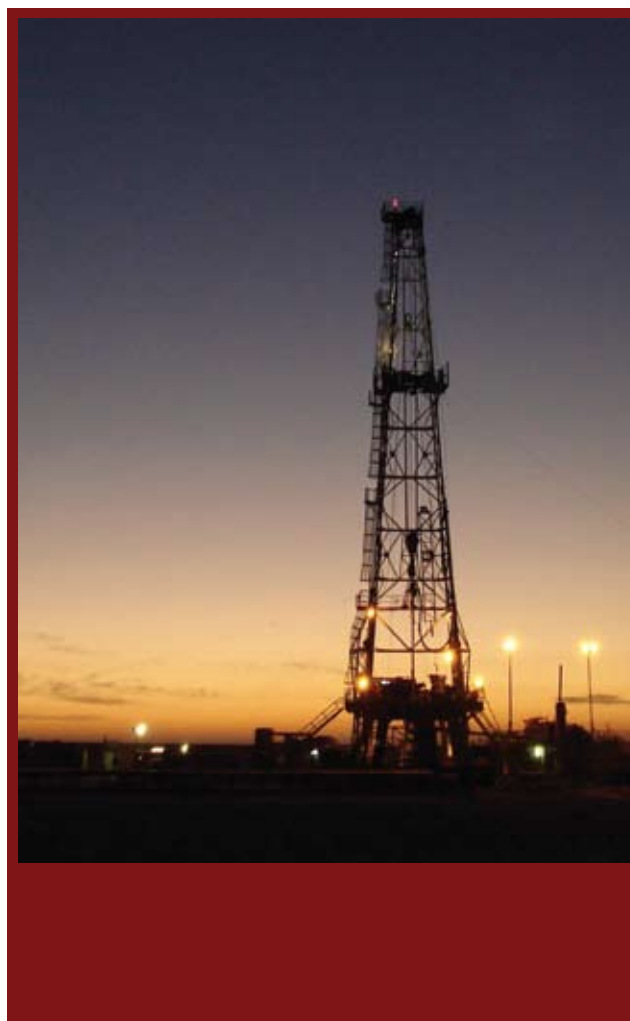
### **North Africa**

The continent of Africa has been known as the third largest oil field in the world, after the Middle East and America. Africa's oil production accounts for approximately 11 % of the world. Besides North Africa (Libya and Algeria) Western Africa is also rich in oil with her 139 billion barrels proven oil reserves. More than 60 % of oil is produced in offshore fields in the continent of Africa. Oil rich countries are; Nigeria (2,5 million barrels/day), Angola (1 million barrels/day), Congo Brazzaville (280 thousand barrels/day), Guinea (270 thousand barrels/day), Gabon (270 thousand barrels/day).

Besides her oil reserves, Africa is also fourth largest gas region in the world after the Middle East, Russia and Far East. Except the natural gas rich fields in the Northern Africa (Libya, Algeria and Egypt) the natural gas reserve of the South Africa is estimated to be around 12 trillion m<sup>3</sup>, 7 trillion m<sup>3</sup> of which is in Nigeria and 5 trillion m<sup>3</sup> in other countries.

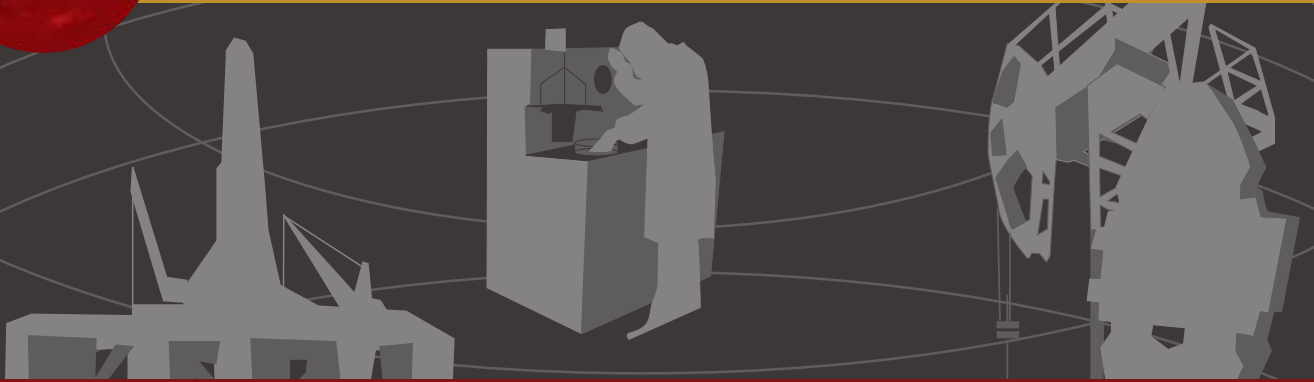
### **Other Countries**

In addition to the activities mentioned above, TPAO has been continuing to search and negotiate for business opportunities in other hydrocarbon rich regions such as Russian Federation, Ukraine, Algeria, Egypt, Brasil, Indonesia, Sudan, West Africa and South America.





## technology



Within the scope of using advanced technology, 2D seismic data acquisitions system with 240 active channel capacity was re-designed and converted to 3D seismic data acquisitions system. Through this system, shot number per km<sup>2</sup> was reduced and also cost reduction and time savings were obtained. In parallel with accelerated exploration activities, data processing capacity of seismic crews was expanded through updating technology in Seismic Data Process Center.

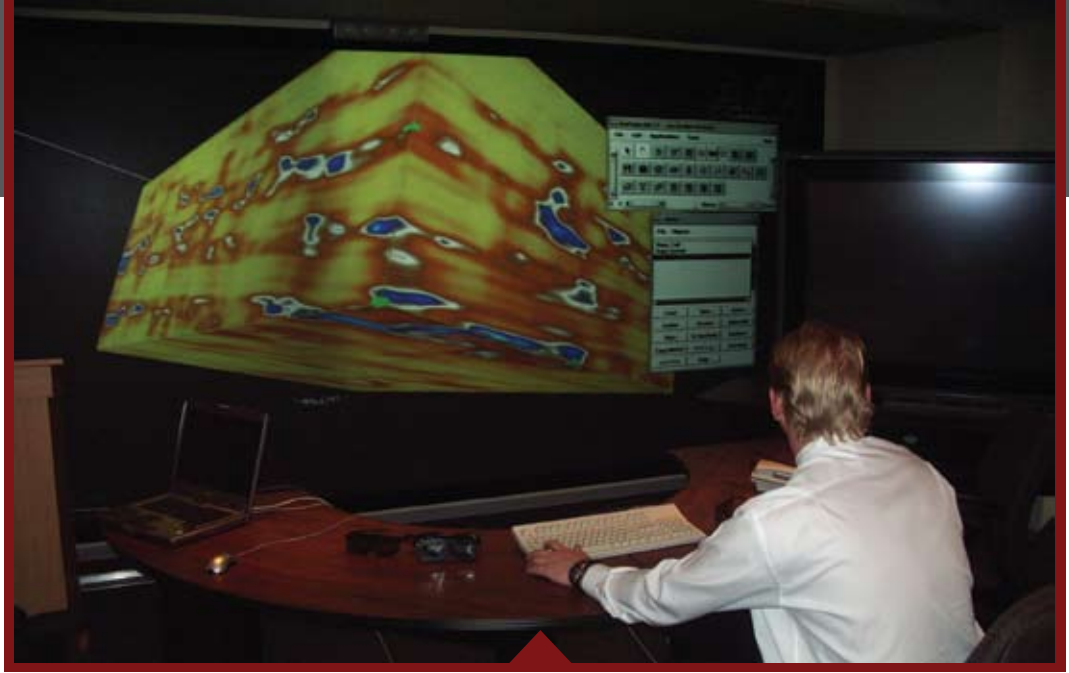
3D Seismic Interpretation and Simulation System was put into operation in May 2005 in order to minimize the risk factor in hydrocarbon exploration and to carry out integrated and more effective seismic data surveys in the interpretation systems through the goal of raising the discovery success ratio in new oil fields.

Data Bank installation studies were initiated for an easy access, sharing and protection of data used for exploration activities. The field geology crews were equipped with GPS and tablet PC in order to study in an efficient and effective way.

### **Deep Water Drilling Technology**

TPAO is continuing its drilling activities in Western Black Sea within the context of joint exploration and development projects by intensifying its exploration activities on offshore.

Within the framework of joint activities with bp, TPAO completed the first deep water drilling in the Eastern Black Sea and gained a significant experience in deep water drilling technology. TPAO is trying to determine the offshore hydrocarbon potential of the Black Sea and increasing its efforts to discover new fields for providing added value to the national economy.



3D Visualization and Interpretation Center

### TPAO Drilling Rigs

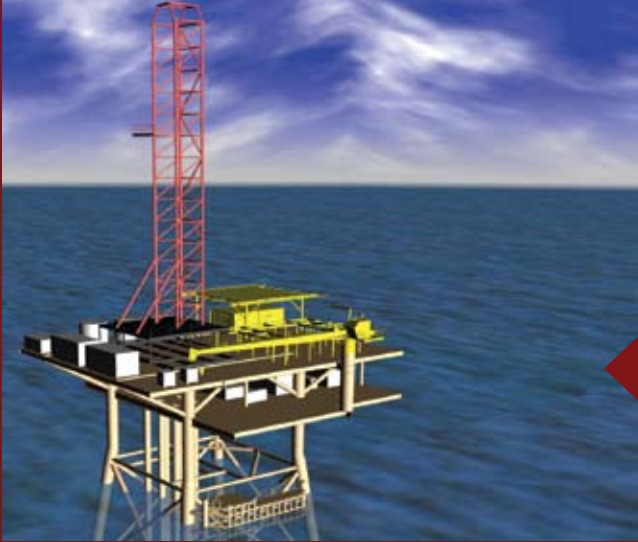
For providing mobilization, cost reduction, time saving and faster drilling, 800 HP MR-7000 mobile rig with the drilling capacity of 2.500 meters was delivered to TPAO in April 2007, 1500 HP AC Drive electrical onshore rig with the drilling capacity of 5.000 meters was delivered to TPAO also in 2007 and DM-1500 Rig started to drilling activities at the Eastern Karakuş Field.

Besides, within the scope of F-320/3 Rig Upgrading Program; main equipments of Mast, Substructures, Electrical Drawworks and Rotary Table were upgraded to 2000 HP AC Drive Electrical Rig with the drilling capacity of 6.500 meters was produced by National Oilwell Varco (USA). Drilling activity at Yuvaköy-1 well was continued with NOV-2000 Rig during the year.

Prepurchasing works started in mid-June 2008 and ended at the end of December 2008; one complete onshore rig which have 1.500 HP, AC Drive Electrical, (With 5"DP's) 5.500 m Drilling capacity, 500 Tons Top Drive and Triplex (3X12-P-160) Mud Pump Systems will be produced by National Oilwell Varco (USA), and delivered to TPAO, jointed to rig's filo in mid-2010.



MR-7000 Mobile Drilling Rig



Phase II Studies  
Akçakoca Drilling - Production Platform

### Production Field Development Technology

All oil and natural gas fields are monitored actively by multi-disciplinary teams using special softwares which have regularly updated digital database and by broad communication network system created among center and fields.

Reservoir modelling can be created and petrophysical rock properties such as porosity and permeability and distribution of reservoir can be monitored easily by simulator. Besides, pressure and gas/oil/water saturation changes by production can be observed thus regions in the field that are not drained can be determined. Using different production scenarios, best case can be obtained to get the highest recovery factor for the field.

By means of reservoir and well analysis software, production performance of both field and each well can be observed historically. Well cross sections, digital logs, well completion operations and well performance can be monitored simultaneously. Besides, future production forecasts can be made by "Decline Curve Analysis".

And also production estimation of new drilled wells is made by evaluating well test data by using advanced software.

Reservoir parameters such as effective porosity, water saturation which are obtained from log interpretations are the most important parameters in reserve calculations. In this objective, digital log data of the wells are processed with advanced software and parameters needed for calculations are obtained.

As a result of these technological and scientific studies, new production well locations, productive zones in a reservoir, suitable secondary production method in field, can be determined if needed and field production evaluation can be carried out.





Fully Visible PVT Test System



Cement Laboratory HPHT Consistometer

### Research and Development Technologies

In accordance with the policy of following innovations in technology, TPAO has concentrated on technological investments of exploration, drilling, well completion, production and research center. In order to accomplish this aim, especially TPAO Research Center enhanced her technological investments and increased her analyzing ability with advanced technology. The knowledge power gained through RD studies and new technology is reflected to the exploration and production activities and also to laboratory supported projects.

#### New Technologies of Research Center;

- Isotope Geochemistry,
- Digital Core Imaging,
- Determination of Source Rock Kinetic Parameters,
- Surface Geochemical Prospection,
- Soil Gas Analyses,

- SEM with Low Vacuum,
- Spectral Core Gamma Ray Logger,
- Automatic Thin Section System,
- Determination of Solid Phase Behaviour under Reservoir Conditions,
- Interfacial Tension and Contact Angle Measurements,
- GC Analysis to Determine Oxygen Compounds in Gasoline, Fatty Acid in Biodiesel,
- LC Analysis for PAH (Poly Aromatic Hydrocarbons) Measurements of Diesel and Environmental Samples,
- Computer-Aided Mud-Cement Systems,
- Mobile Laboratory in the Field and the Well Site.

research center



TPAO Research Center, established in 1974, has a capacity to perform over 400 different types of analyses and tests which are obtained from 27 different laboratories equipped with modern analytical instruments. Research and development projects, applied projects, consulting services and technical training programs are carried out by its 80 well-trained and experienced staff.

Research Center, as a modern high technology complex, provided the necessary technical services, laboratory tests and analyses, and applied research toward the needs of our Corporation in domestic and international exploration, production, drilling, and well completion operations. In this context, research and evaluation studies have been carried out to find solutions to the problems encountered in the well and field projects of geology and oil-natural gas units.

A total of 35 projects, which are in collaboration with Exploration (10), Production (5), International Projects (2), Healthy, Safety and Environmental Production (2) were performed in the Research Center during 2008. 12 projects were carried out within the department and 4 university projects were supported. 27.775 analyses and 9.078 quality control tests were conducted in the Geology and Engineering Laboratories within the scope of these projects. The overall number of tests and analyses is 36.853. 54 reports were prepared related to these activities. Throughout the year, totally 2.367 man/day of field engineering services and field works were carried out

in domestic and international operations of TPAO. Research Center experts contributed to the field surveys, especially surface geochemical prospecting studies, in Batman/Bismil and Konya/Kulu concessions.

**Some of these generally exploration based projects are as follows;**

- North Thrace Basin Stratigraphy & Sedimentology,
- District X Prospect Evaluation Project,
- District IX Prospect Evaluation Project,
- Characterization of X District Border Oils and Correlation with Syria Oils,
- GDA Paleozoic Project,
- Western Black Sea Offshore Project,
- Maykop II Project,
- Unconventional Reservoir Project,
- Taurus-Mediterranean District Hydrocarbon Potential Evaluation Project,
- Sedimentology, Reservoir Characterization and Reservoir Geochemistry in Raman Oil Field Project,
- TPOC Libya Project,
- CO<sub>2</sub> Storage in Geological Environment,
- Underground Natural Gas Storage Project.



Research Center Exhibition Hall

**Drilling based projects that were carried out together with ITU and METU Petroleum and Natural Gas Departments are;**

- Determination of Compression Strength and Permeability Properties of A and G Class Cements at High Pressure and High Temperature Conditions with “ARI” Additive and Investigation of Industrial Application in TPAO Fields.
- Determination of Cuttings Carrying Capacity of Gas-Liquid Mixture as the Drilling Fluid.
- Determination of HTHP Rheological and Fluid Loss Properties of Sepiolite in Water Based Drilling Fluids and Serving of Sepiolite to the Drilling Industry.

**Production based projects, that were carried out, are as follows;**

- Bati Raman Enhanced Oil Recovery Project Field,
- Raman Field Water Shutoff Project,
- Evaluation of High Temperature Gels for Water Shutoff,
- Determination and Elimination Studies of Scale Tendencies in Production Waters of Raman-3 Field in TPAO,
- Enhanced Oil Recovery Process for Extra Heavy Oils,

**Occupational safety and environmental protection based projects, that were carried out are as follows;**

- Bioremediation Project,
- Applications for Establishment of Standard Test Method for Monitoring, Management and Disposal of Waste Water.

During 2008, necessary tasks related to IWCF Membership and being an Accredited Assessment Center were performed.

Fifteen Well Control Courses were carried out for 118 personnel consisting of engineers and technicians from TPAO and other technical staff from domestic and international companies.

46 IWCF and 112 TPAO Well Control Certificates were granted to the successful trainees in 2008.

Totally 172 trainees, from both TPAO and other companies were given technical trainings on 8 different subjects with these courses.



ICP-MS Instrument

### Research Center Laboratory Services

In the Geology Laboratories, analyses were performed mostly related with biostratigraphy (micropaleontology, nanoplankton and palynology), sedimentology (petrography, clay mineralogy, scanning electron microscope-SEM, lithology, sequence stratigraphy and reservoir evaluation), geochemistry (gas, oil, source rock, organic petrography, oil and gas origins, isotope analyses, kinetic parameters, oil-oil and oil-source rock correlations, reservoir geochemistry, mathematical modeling, evidence analyses, oil systems and potential with informing samples) subjects.

The analyses performed in Petroleum and Natural Gas Engineering Laboratories cover drilling technology (drilling fluid and cement program, additives quality control, rock mechanics- well bore stability simulation, simulation of hydraulic and acid fracturing), production technology (corrosion and scale control, injection water quality, fuel oil analyses and biodiesel production) and reservoir engineering (basic and special core analyses, reservoir fluids (PVT) analysis) and EOR subjects.



Lithological Analysis

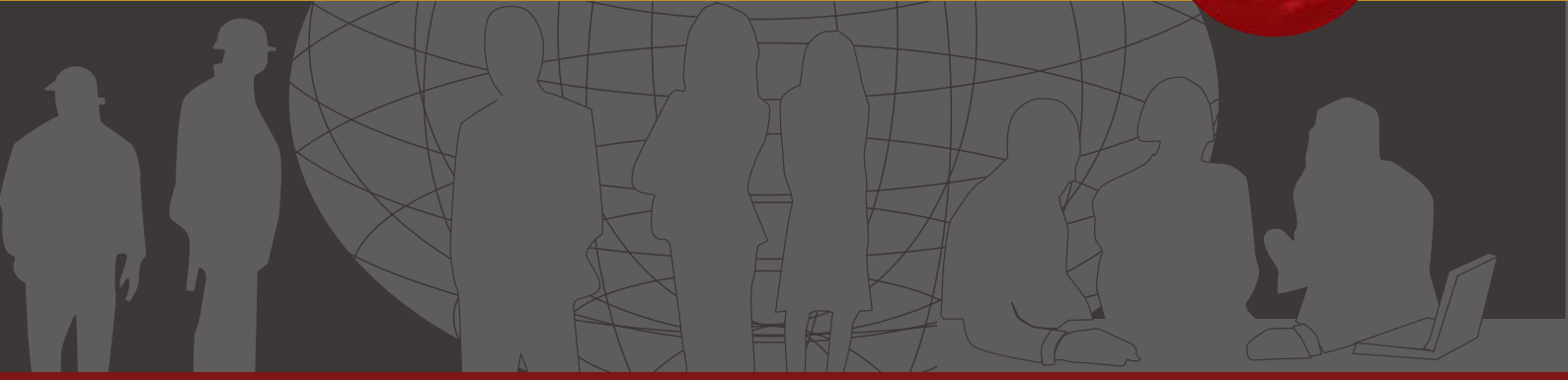


In order to register TPAO Research Center Laboratories as a dependable, contemporary arbitrator laboratory at an international level, accreditation studies in accordance with the TS EN ISO 17025: 2005 "General Requirements for the Competence of Calibration and Testing Laboratories" have been completed.

Accreditation of Research Center Laboratories has been approved by Turkish Accreditation Agency Board on October 31, 2007 for a total of 31 analyses on the following titles;

- Petroleum Product Analyses,
- Natural Gas Analyses,
- Water Analyses,
- Drilling Fluids Additives Analyses,
- SEM/EDS and Clay Minerals Analyses,
- Biodiesel Analyses.

## human resources



Believing that the success can only be achieved through highly motivated individuals, TPAO continues its studies to create a dynamic Human Resources System within the context of Corporate Resource Management.

TPAO uses competence based interview techniques to measure the employee candidates' ability to communicate, research, discernment work under stressful situations, along with their responsibility consciousness and openness for improvement.

TPAO has been carrying out her activities successfully with her dedicated employee, turning the experience of her 55-years of existence into a source of reference and knowledge, strong organizational structure, advanced technology and experiences in the international projects.

### Performance System

TPAO plans her activities according to her vision to become regionally effective world-class energy company meeting Türkiye's oil and natural gas demand and to be the most desired company to work with. To achieve this vision, TPAO believes Human Resources must be the biggest of all the investments.

Within the context of a human based administration focusing on employee needs, training and development, our

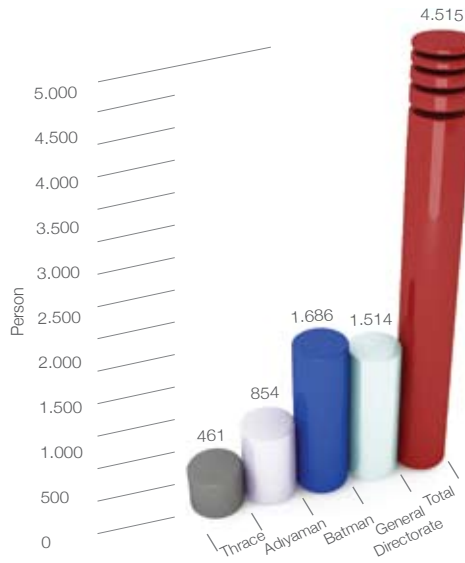
management, responsible for the arrangements to arouse human resources efficiently, continues to integrate modern Human Resources functions to the existing structure.

Human beings are considered to be the most valuable sources of a company. This consideration is turned into activities through projects. There are three main projects, affecting each other results;

1. Work Force Planning
2. Organizational Construction
3. Career Planning



### Staff Situation in 2008



We will continue the projects, and the preparations of which we started in 2008.

Development based Performance Evaluation System continues its 2008 computations within the context of competences in accordance with our vision, mission and values by adopting multiple evaluation systems for the white collars and single evaluation system for the blue collars.

Performance Evaluation System will continue in 2009 as well.

### Staff Profile

By the end of 2008; our total number of employees is 4.515, where the numbers of employees in General Directorate, Batman, Thrace and Adiyaman District Managements are 1.514, 1.686, 461, and 854 separately.

TPAO's 3.387 scope, 1.128 out of scope staff is very well informed and experienced. They have many ethical principles, such as merit, effectiveness, team work, communication, self-efficiency for coping with the changes and responsibility. These principles will carry TPAO to great successes in the future.



Extended Directors Meeting / Kızılcahamam

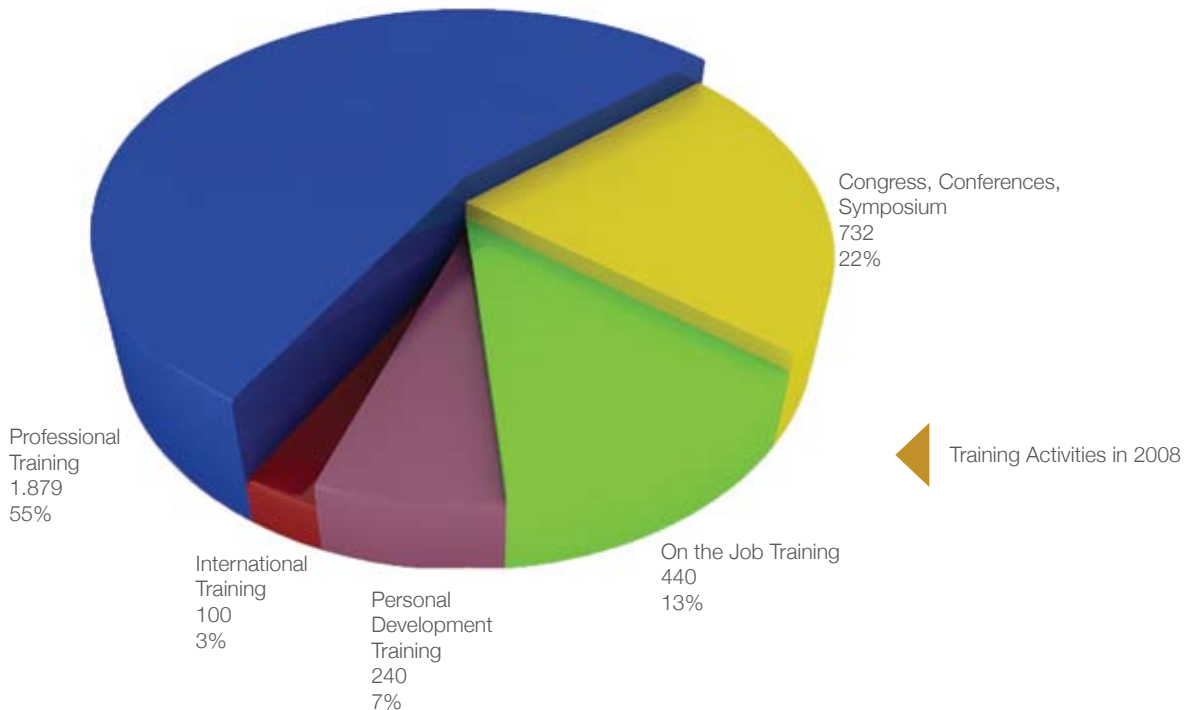
### Continuous Training

All corporates need rigged staff, who can lead to reach her goals and objectives. Within this scope, in 2008, training and development courses were accelerated for the staff to follow the rapidly changing knowledge and developing technology.

Objective of training and development activities is to equip staff with the skills and knowledge that will enable them to contribute to the targets of corporate.

In this context, a total of 3.402 staff – 3.297 in Türkiye and 105 abroad- participated in various training programs.

Within the context of orientation training program, new employees of different departments have been informed of our field of activity, visited oil fields in the District Managements and carried out on-site inspection.







Dart Tournament



Children Festival

### Life Quality of the Employees

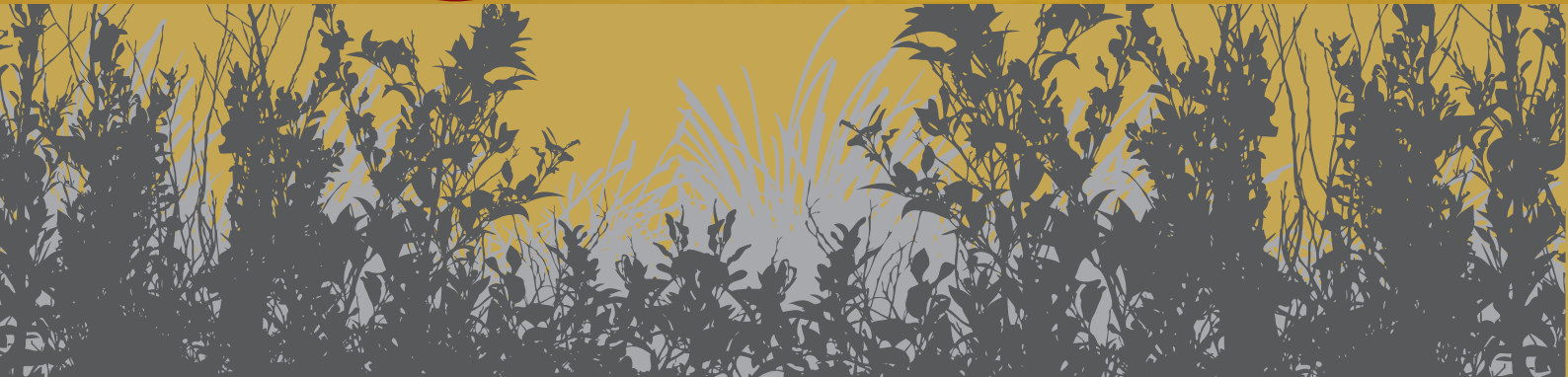
TPAO believes that self-sacrificing studies and high performance of the employee depend on high life quality. Based on this belief, various social activities have been arranged in order to increase motivation of employees. Furthermore, it provides communication required for the company culture.

In this context, social activities such as football, bowling, dart, billiard and table tennis tournaments and summer school, Children's Festival, Spring Festival, musical activities and excursions were arranged. TPAO offered discounts to its employees for the sustainability of their high quality life standarts. Our sport complexes, full of modern sport equipments, are in the service of our employees. Economic aid for the employee in need is provided by TPAO. Funeral services are provided for our employees as well. Besides, TPAO offered holiday opportunities for the employees with their families in her own Social Complex in Güllük/Milas-Muğla.

Our retired staff also benefitted from some of these services.



## occupational safety and environmental protection



Our Corporation is the leader in its sector in the field of occupational safety and environmental protection and the technological improvements are followed and implemented in all our activities.

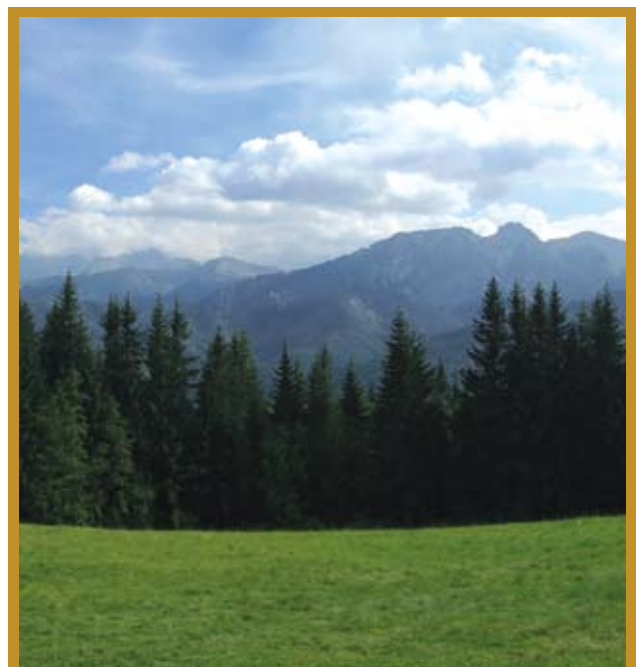
Occupational safety, health and environmental protection have been identified as a labor policy for our organizations, conducted not only for complying with national legislation but also considered to be a rising value in our performance objectives.

***Our objective is to put a continuously rising performance into practice in the field of Occupational Safety, Health and Environmental Protection with the active participation of our staff.***

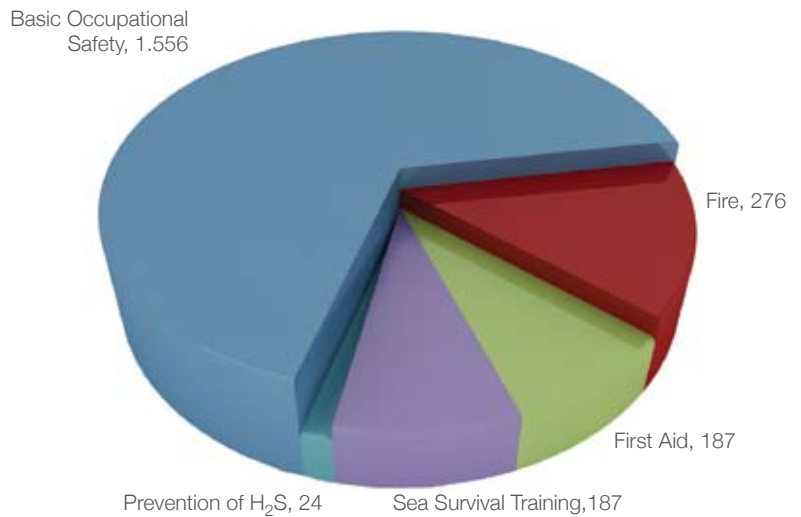
***Main objectives of Our Occupational Safety and Environmental Protection Policy are to :***

- Minimize the negative effects of our activities on environment,
- Conduct the regular trainings to turn the HSE consciousness into a corporate culture,
- Conduct the activities in accordance with National and International Legislation,
- Apply Active Risk Management by defining dangerous situations and acts regarding Occupational Safety and Environmental Protection,
- Prepare an Emergency Response Plan,
- Fulfill all necessities regarding Waste Management in collecting, identifying, decomposing and transporting,
- Measure the performance in all activities to step forward.

Following the main policy regarding objectives and targets, all staff should be trained in accordance with HSE policy in order to catch the required consciousness and their participation should be ensured.



HSE Training Activities  
Between 2005 and 2008



### Occupational Safety and Health

In accordance with the principle that **preventing is easier and more humanitarian than paying for penalty**, efforts to eliminate Occupational Health and Safety risks of the employees and work sites are made.

Irregularities, risks and improving opportunities regarding HSE are determined, discussed and solved in HSE Committee Meetings.

Suitable Personal Protective Equipment (PPE) is used to prevent accidents and occupational diseases at work site. Use of PPE is checked regularly and employee is warned when required.

Our Corporation conducts systematic and planned training programs regarding General Safety Rules, Fire Safety and First Aid in order to achieve better occupational health and safety conditions at work sites thus preventing the loss of skilled manpower and work days.

Health services which we think are parts of employee satisfaction and motivation are carried on as polyclinic and protective health services.

Various health scanning programs are conducted in case of a necessity or on demand of staff. Thus, early diagnosis and medical treatment would be possible beforehand. In this context, urinary system scanning, coronary heart disease scanning, blood donation campaign and influenza vaccine campaign have been organised. Scannings and campaigns were well-attended and accepted by the staff with great pleasure and interest.



Akdamar Island / Van

### Environmental Protection

Following studies are conducted to eliminate or mitigate the negative environmental impacts resulting from activities;

- Contribution to Create National and International Environmental Legislation Regarding Petroleum Activities,
- Studies on Environmental Impact Assessment,
- Preparation and Implementation of Waste Management Plans Through Developing Environmental Protection Rules and Standards,
- Preparation of Emergency Intervention Plans,
- Environmental Protection Audits.
- Studies on Awareness of Environmental Protection.
- Activities Regarding Staff Consciousness on Environmental Protection.





Studies are conducted at Environmental Committees to determine and eliminate wastes derived from activities, to take environmental precautions in accordance with environmental legislation and to minimize negative effects of environmental accidents.

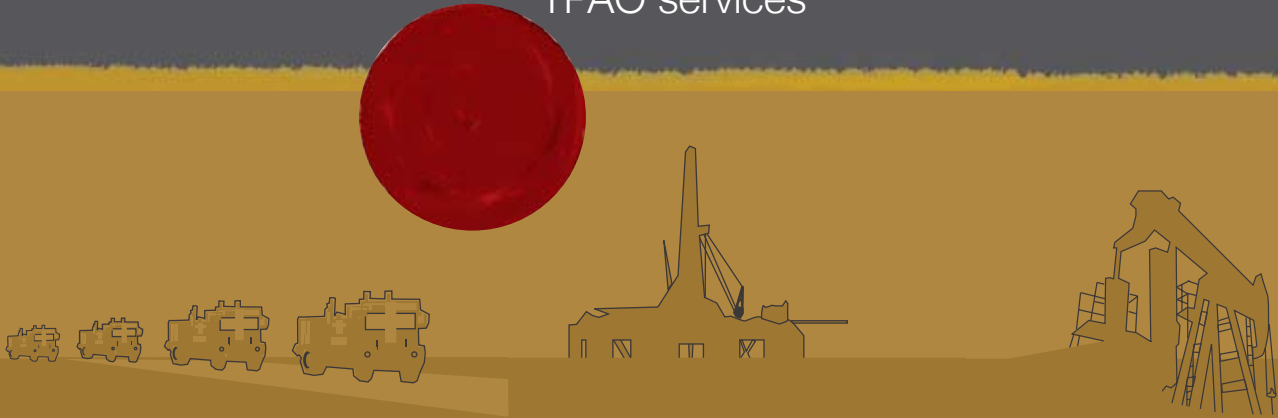
Rehabilitation is conducted by bioremediation process on sites polluted due to petroleum activities.

Activities conducted in 2008 concerning the Environmental Protection are as follows:

- Creating Analysis Standards for Waste Water derived from TPAO Activities,
- Studies on Waste Water Management Including Elimination Applications,
- Management Project of Waste Water Derived from Oil and Gas Production Activities (TUBITAK-Kamag Project),
- Projects regarding International Activities,
- General Directorate Sewage Treatment Plant Project,
- Western Black Sea Offshore Project,
- Drilling Waste Water Disposal Project,

- Bioremediation Studies,
- Preparation of Emergency Intervention Plans,
- Laboratory Wastes Disposal (TPAO Research Center),
- Hazardous Wastes Disposal (erasing from fields),
- Preparation of Standard Procedures,
- Studies for Gas Emission Permits,
- Oil-Well Programme Revision Studies,
- Studies Concerning Equipment Use.

## TPAO services



### Data Acquisition with Geophysical Methods

#### Seismic Data Acquisition

Seismic data acquisition studies in 2008 have been carried out by two Seismic Crews under our Geophysical Operations Department. Seismic-1 Crew has 5 vibrators of M26 HD/623 B P type, working with GPS system, and is operated by “Vibroseis” method.

Generally, in 3D seismic data acquisition studies, Seismic-1 Crew uses Sercel-408 UL type recorder which has 12 receiver lines and 120 receiver channels, a total of 1440 active recorder channel system.

In topographic surveys, Leica GPS 530 system is being used and required data quality control and preplanning studies are carried out by EGHAS software.

Seismic-2 Crew is operating with “Dynamite” as an explosive energy source. 13 Heavy-Weight (Iveco 6x6) Truck Mounted Drill Rigs are being used to locate the energy sources. Sercel SN-388 type recorder is being used by Seismic-2 Crew. This crew generally operates 2D and 3D seismic data acquisitions. For 3D acquisitions, the crew can operate up to 6 receiver lines. It is expected that the vibros bought for the creation of 3<sup>rd</sup> seismic crew will be operated in the second half of the 2009.

Furthermore, seismic field design, topographic quality control, recorder quality control and static analyses have been applied while performing Seismic Data Acquisition Services.

Besides; in the scope of Seismic Data Acquisition; Seismic Field Design, Topographic Control, Record Control and Statical Calculation operations are conducted.



Seismic Crew Camp

New Vibros  
(2009 Model)



### Seismic Process Applications

- 2D/3D Conventional Seismic Process,
- Refraction Static (Linear and Non-Linear Tomographic Analysis),
- Signal Process,
- Improvement in Signal to Noise Ratio,
- Multiple Attenuation (RADON/SRMA),
- DMO,
- Pre Stack Time Migration,
- 2D/3D PreStack Depth Migration,
- Post Stack Depth Migration,
- 2D/3D AVO,
- VSP Process,
- Long Offset Seismic Line Process (2D PSTM and PSDM),
- Seismic Modelling.

### Non Seismic Data Acquisition

#### Gravimetric and Magnetic Surveys

Non-Seismic Data Acquisition surveys are carried out by one Gravity and Magnetic Acquisition Crew under Geophysical Operations Department.

#### Seismic Data Processing Systems

2D/3D onshore and offshore data processing have been realized by Focus and Geodepth softwares from Pradigm Company. Also, Thrustline Softwares by Geotomo Company have been used to solve problems in South Eastern Anatolia Thrust Zone.

#### Interpretation Systems

For seismic, well and geological data interpretations, UNIX based software of Landmark and Schlumberger companies

has been used actively on the latest technology hardware. Software of both companies can be used for advanced seismic interpretation, mapping and well and geological data interpretation.

On the other hand, advanced reservoir modelling and studies related to petrophysics are carried out. Except from Unix-based software, PC-based software also has been used commonly for seismic, well and geological interpretations. Furthermore, Geographical Information System (GIS) applications have been applied for any kind of mapping. Digitization paper maps to GIS environment are being realized with the highest quality to compose advanced geological mapping applications.

Recently, remote sensing analysis has been carried out for surface geology applications and correction of existing geological maps.

#### GIS and Remote Sensing

Through the goal of carrying out remote sensing studies and producing necessary maps, ESRI Products have been used. Also, studies under the ARBIS (Exploration Information System) Project, which allows the end users to browse or produce their own maps over intranet, has been initiated in 2008. Although ARBIS project has been structurally completed in 2005, data entrance is underway.

Additionally; MAPRAYS system put into operation in 2008 that provides more effective licence tracking is in the service of the users.



3D Visualization and Interpretation Center

### **3D Visualization and Interpretation Center**

TPAO has been using 3D seismic interpretation and simulation system since May 2005, in order to minimize the risk factor in hydrocarbon exploration and to carry out integrated and more effective seismic data surveys in the interpretation systems for raising the discovery success ratio in new oil fields.

### **Data Bank**

By installing the necessary hardware and software, the project which enables the management, storage and electronic user access of all digital seismic data, well logs and other relevant data and also the archived documents of Exploration Department, in a single and secure environment, was completed. The system was brought into service within 2008 and data loading is still in progress.

### **Well Geology Services**

#### **Mud Logging Unit (MLU) Systems**

By MLU systems, which provide services for both our Corporation and joint-venture modern gas and exploration well pursuits, data that belongs to geological and drilling disciplines are registered methodically and provided for the service of relevant project and management authorities.

#### **Real Time Visualization System**

Within the advanced technology and in accordance with the needs and requirements of our Corporation, Real Time Visualization Project which had been started to be built up in 2007, was to put into service in December 2008, succeeding the test activities completed in the last quarter of 2008.

### **Research Center Laboratory Services**

In 2008, technical services, analyses, sample preparation, projects, consulting and training programs were performed on due basis requested by universities, industrial foundations, domestic and foreign oil companies operating in and abroad.

Mining analyses were carried out under the organization of General Directorate of Mining Affairs, on behalf of the private mining companies. Environmental analyses and consulting services for the Courts of Justice, and consulting and training services for foreign petroleum companies were provided. Furthermore, for TPIC which is dealing with feasibility studies with Exploration Group in Qasab Field of Iraq, various analyses and evaluation reports were performed. On the other hand, various types of studies were also carried out for the crude oil transported by BOTAŞ.

Besides, the experts from the Engineering Division of Research Center carried out engineering and consulting field services in Turkey and abroad. In this respect, drilling fluid services were provided for 26 wells of TPAO, 1 offshore well of TPAO in Western Black Sea Project, and 1 well drilled by TPOC in Libya.

Cement slurry compositions were designed for casing cementing of 64 TPAO wells, 1 offshore well drilled by TPAO in Western Black Sea, 1 well drilled under the operator of ENDA, 1 well drilled by MERTY Company, 1 well drilled by BM Company, 1 well drilled under the operator of PEMI, 1 well drilled under the operator of Menderes Geothermal Inc., 1 well drilled under the operator of Tuzla Geothermal Inc. Moreover, performance and comparative performance tests were





Spectral Core Gamma Ray

conducted with the cement samples from Well Completion, and Logistics Department of TPAO. Under the manner of the foreign jobs, cement quality tests were conducted with the different types of cement samples requested by Mardin Çimento, Bolu Çimento, AS Çimento and Nuh Çimento. Finally cement additives performance tests were conducted with the samples requested by Molar Kimya, BASF and KATN.

Research specialists have provided field services and consultancy during the course of water shutoff treatments in 20 wells in Raman field and 4 wells in G. Dinçer field.

#### Stratigraphy Laboratory Services

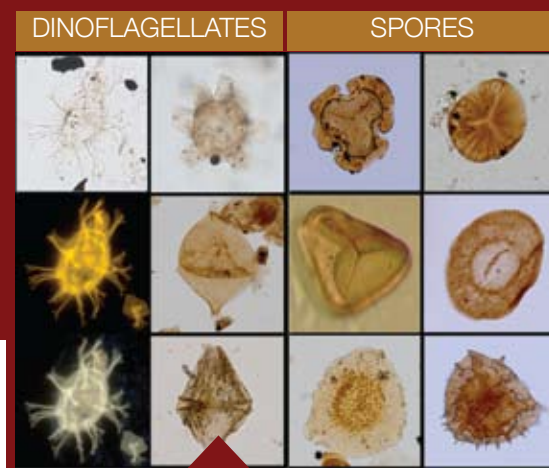
- Foraminiferal Micropaleontology,
- Palinology,
- Nannoplankton,
- Organic Maturation Laboratory,
  - Determination of Age and Sedimentation Medium, Environment,
  - Reservoir Biostratigraphy,
  - Paleoclimatology, Paleogeography, Paleoecology Analyses,
  - Bio-Chronostratigraphic Analyses and Correlations,
  - Analyses of Well Head and Field,
  - Palinomorph and Age Determination from Liquid, Hydrocarbon Samples,
  - Sample Processing for Visual Kerogen and Whole Rock,
  - Organic Facies Analyses,
  - Digital Microphotography

#### Sedimentology and Reservoir Geology Laboratory Services

- Lithological Analysis,
- Petrographical Analysis,
- Sedimentological Core Analysis,
- X-Ray Diffraction (XRD) Analysis,
  - Whole Rock and Clay Analysis,
- Scanning Electron Microscope (SEM) and Energy Dispersive Micro-Analysis (EDS/XRF),
  - a. Morphological and Image Analysis,
  - b. Elemental Analysis,
- Core Spectral GR Log and Scanner,
- Sedimentology,
  - a. Facies and Environmental Studies,
    - Depositional Environments,
    - Sedimentological Modeling,
    - Sedimentological Interpretation Using Electrical Logs,
    - Lithological and Core Logs,
    - Facies Determination, Distribution and Mapping,
    - Sea Level Changing and Cluster Analysis,
    - Correlation by Using Sequence Stratigraphy and Electric Logs,
  - b. Reservoir Determination and Characterization,
    - Reservoir Facies Properties and Distribution,
    - Interpretation of Sedimentological and Petrophysical Data,
    - Porosity Type and Percentage,
    - Approach to Permeability,
    - Determination of Paragenetic Evolution of Diagenesis,
    - Determination of Reservoir Distribution by Facies, Diagenesis and Reservoir Quality Studies.



Gas Chromatography - Mass Spectrometry Analysis



Palynomorph

#### Organic Geochemistry Laboratory Services

- Pyrolysis (RE-6) Analyses,
- Gas Chromatography,
- Gas Chromatography Analyses,
- Gas Chromatography Mass Spectrometry Analyses (Biomarker Analyses),
- Stable Isotope Analyses (EA-GC-C-IRMS),
- Total Organic Carbon (TOC) Measurements in Rock Samples,
- Determination of the Type and Potential of the Organic Material,
- Determination of the Kinetic Parameters of the Organic Material,
- Analysis of Gaseous Hydrocarbons,
- Hydrocarbon Distribution Analyses in Oil and Extract Samples,
- Analyses of the Soil Gas Used in Surface Geochemical Prospecting Studies,
- High Temperature Gas Chromatography Analysis in Oil and Extract Samples,
- Saturate and Aromatic Biomarker Analyses in Oil and Extract Samples,
- Stable Isotope Analyses of Whole Oil and Saturated-Aromatic Fractions of Oil and Solid Hydrocarbons.

#### Drilling Technology Laboratory Services

- Drilling and Completion Fluids Analyses,
- Cement Slurry Analyses,
- Rock Mechanics and Well Stability Analyses,
- Cement and Cement Additives Quality Control Tests,
- Drilling Fluid Additives Quality Control Tests,
- API and High Pressure-High Temperature (HPHT) Filtration Test,

- Measurement of HPHT Flow Properties,
- Permeability Plugging Test,
- HPHT Tickening Time Test,
- HPHT Dynamic Filtration Test,
- Static Compressive Strength Test,
- Dynamic Pressure Strength Test,
- HPHT Static Gel Strength Measurement,
- Triaxial Compressive Strength Test,
- Static Deformability Test,
- Dynamic Deformability Test,
- Linear Swelling Test,
- Capillary Filtration Time Test,
- Gas Migration Test.

#### Reservoir Engineering Laboratory Services

- Core Analyses,
- Reservoir Fluids (PVT) Analyses,
- EOR Studies,
- Porosity and Permeability Measurements under Overburden Pressure,
- Relative Permeability Test,
- Capillary Pressure Test,
- High Pressure Mercury Injection Test,
- Fluid Saturation Determination Tests ( Retort, Dean Stark)
- Oil, Condensate and Gas PVT Tests,
- Phase Behaviour Test,
- Solid Detection Test,
- Hydrate Test,
- CO<sub>2</sub> Mobility Control in CO<sub>2</sub> Injection by Foam,
- Polymer Gel Application for Improving Reservoir Conformance in CO<sub>2</sub> Injection,
- WOR Reduction by Crosslinked Polymer Gels.



Lubricity Tester

#### **Production Technology Laboratory Services**

- Petroleum and Petroleum Product Tests,
- Water Analyses,
- Gas Chromatography Analyses,
- Tracing and Controlling of Corrosion,
- Well Stimulation Services,
- Miscellaneous Analyses,
  - Determination of Physical and Chemical Parameters of Petroleum and Petroleum Products,
  - Complete Analysis of Formation, Oil Field and Injection Waters,
  - Determination of Water Conformations to the Injection Operations,
  - Determination of the Composition of Hydrocarbon and Sulfur Compounds in Natural Gas and Gaseous Fuels (like LPG),
  - Monitoring Corrosion Coupons and Probes,
  - Performance Tests of Scale Inhibitors,
  - Determination and Evaluation of Additives Used in Well Stimulation,
  - Computer Simulation of Acidizing Operation by STIMCADE,
  - Determination of Appropriateness of Additives Used in Drilling and Well Completion Operations.

#### **Research Center Training Activities**

- Applied Well Control,
- Applied Drilling Fluids Technology,
- Matrix Acidizing,
- Core Analyses,
- PVT Analyses,
- Oilfield Water Treatment and Injection Quality Determination,
- Corrosion Control in Oil & Natural Gas Production,
- Sedimentology and Reservoir Geology of Carbonate and Clastic Rocks,
- Clay Mineralogy and Microanalysis Techniques (XRD/SEM/EDS) and their Usage in Oil Exploration
- Sedimentology of Fan Deltas (Field Course the Antalya Miocene Basin)
- Basin Classification and Sedimentation - Tectonic Relationship,
- Petroleum and Gas Geochemistry,
- Applied Lithostratigraphy and Sedimentology.



Offshore Drilling

### Drilling Services

The basic principle of our quality policy is to supply drilling services for TPAO's and our customers' exploration and production activities through meeting their increasing requirements and expectations with high quality and relevant cost. While conducting drilling activities with highly experienced staff, our target is to drill the wells in a safe, secure and high quality manner with low cost by applying the latest technology.

TPAO Drilling Department provides drilling, casing deployment, drilling for core plug, well control, air-foam-low pressure drilling services with the rigs having various drilling capacity.

### Onshore Drillings

- Drilling Experience in 2.537 Wells,
- Deep Well Experience (6.800 m),
- Deviated and Horizontal Wells,
- ERD (Extended Reach Drilling),
- Multi Lateral Well Drillings- Bati Raman Field.

### Offshore Drillings

- Shallow Water Drilling (up to 80 meters water depth),
- Deep Water Drilling (from 80 to 1.000 meters water depth)
- TPAO-TOREADOR-STRATIC Western Black Sea Joint Exploration Project,
- Ultra Deep Water Drilling (Over 1.000 meters water depth) TPAO-bp Eastern Black Sea Joint Exploration Project,



Log Unit

### Well Completion Services

Well Completion Services of TPAO can provide various well completion services in oil, natural gas and geothermal wells drilled as exploration, appraisal and production wells in-house and abroad and also, cementing, line testing, logging, well stimulation and workover services requested by other oil companies are supplied in line with TPAO's vision with the principle of reaching international standards.

### Workover Operations

Well completion, re-completion and production string repair activities are performed in and abroad with 12 workover rigs including new NAT-1, 7 rodpuller and their equipments.

### Logging Operations

Open Hole, Cased Hole and perforating services are supplied with 6 digital, 1 analog logging truck, 3 digital skid units and 1 analog skid unit totaling 11 logging units. Logging operations are performed with new IQ system and INSITE tools.

### Technical Operations

Cementing, acidizing, and leak off operations are performed with 12 pumping units and their equipments (cement silos and batch mixers, etc.) and also, DST operations are performed with 11 DST equipments.



Rodpuller and Workover Rig

## district managements



### Batman District Management

Exploration, drilling and production activities of crude oil and natural gas which are vital inputs of national economy have been carried out continuously since 1954. Batman District Management has an important position in oil sector as it is located in the region where the first oil discovery was realized and crude oil production commenced.

The first oil discovery in Turkey was realized at Raman Field in 1945 by MTA and the first production in economical means was realized in Raman-8 well in 1948. After foundation of TPAO in 1954, Batman District Management played a leading role in the exploration, drilling, production and refinery activities of the country.

In line with intensive exploration, production activities and oil field development studies in Batman District, drilling activities were continued in 2008. In this context, 58,405 m of drilling was realized in 39 new wells with 6 active drilling crews (3 TPIC crew) and 6 drilling rigs.

In 2008, new production wells were drilled in the fields near Syria border where high potential of oil production is estimated to exist. 4 wells were drilled and put into production at the B. Kozluca and Çamurlu fields. In B.Kozluca field the construction study of a new Block Station was started in order to handle the oil production and to collect and re-inject the

produced CO<sub>2</sub> into the reservoir. In İkiztepe field abandoned wells were re-completed and oil production was re-started in 2008.

In order to enhance oil production in Batı Raman and Raman Field, a total of 26 wells were drilled and put into production. At the B. Raman and Raman fields, drilling activities with the aim of field development have continued. In order to reduce water coming from the reservoir and increase oil production, 24 production wells were successfully treated with polymer (gel) and obtained positive results in G.Dinçer and Raman fields.

In order to use CO<sub>2</sub> gas more effectively and for a long time, the installation of re-cycle compressor system was started up in the B. Raman AP-2 Station.

In 2008, the production activities in Batman District were continued from 682 wells in 37 oil fields and in one gas field. As a result of these activities, 7,0 million barrels of crude oil and 64 thousand barrels oil equivalent of natural gas were produced in 2008. In the production fields, 28 new wells and 21 abandoned wells were put into production.

At the Dodan Field, totally, 9,7 billion scf CO<sub>2</sub> was produced and refined. Then, CO<sub>2</sub> was compressed and transported to



Batman District Management

B. Raman field via pipelines and was injected to Batı Raman reservoir by 82 CO<sub>2</sub> injection wells. In addition, 3,2 billion scf of CO<sub>2</sub> was re-injected into the reservoir by re-cycle compressors.

With the aim of protecting the soil and preventing soil pollution during and after hydrocarbon exploration and production activities, Batman District Management concentrated on the implementation studies of bioremediation method used by the petroleum companies worldwide, in addition to the rehabilitation studies of contaminated soil through neutralization and stabilization methods. In the production fields, 50 new concrete mud-pits were built and brought into operation to prevent environment pollution and to gain the oil flowing from well head.

Batman District Management has also played an active role in the economic and social development of the region while conducting all these activities. Batman, before the oil discoveries, was a small village, namely İluh. It has become an important province in South East Anatolia with these discoveries.

Batman has gained a great dynamism in the economical and social areas with the discovery of oil and establishment of the Refinery. Today, Batman, as being located around TPAO complex and plant, since drilling, transportation and processing of oil requires high labor force has a great deal of contribution to national economy by increasing the employment volume in the region.

Batman District Management has been continuing its activities in the campus having a wide-range of social facilities. Moreover, the District Management contributes to the education of the people in the region with the school situated in the complex.

It is envisaged that Batman District Management will boost its activities with great enthusiasm and endeavor in forthcoming years for achieving TPAO's vision of becoming a company meeting domestic oil and natural gas demand.



Thrace District Management

### Thrace District Management

Thrace District Management has intensified its activities especially in natural gas exploration and production investment in recent years. TPAO initiated its exploration and drilling activities in Thrace Basin with Uluman-1 well, in 1960. As a result of the studies performed in Thrace District, the first economical natural gas was discovered in 1970 at the Hamitabat and Kumrular Fields and the first oil discovery was realized in K.Osmancık and Deveçatak wells which were drilled in 1973-1974.

Due to substantial increases in TPAO's exploration and production activities in Thrace Region, TPAO Marmara District Management was founded in Tekirdağ in 1977. Furthermore, District Management's name was changed as Thrace District Management and moved to Lüleburgaz in 1984.

TPAO increases its contributions to the national economy with its Natural Gas Storage Facility and Çayağzı Natural Gas Process Facility and by discovering new fields as well as natural gas production in Thrace District. With team spirit and total quality approach, our staff have been carrying on their self-sacrificing studies at an accelerated pace.

In 2008, 25.064 m. of drilling activities were realized in 16 wells by Thrace District Management.

In the Thrace Region, 481.464.172 sm<sup>3</sup> of natural gas and 106.136 barrels of crude oil were produced in 2008. The produced crude oil and condensate have been transferred to TUPRAŞ by tankers.

Saranlı 1, Dikilitaş 1 exploration wells, Adatepe-7, Dikilitaş-2, Alacaoğlu 3 appraisal wells drilled by our corporation in the Thrace Region were completed as "gas wells".

Construction of the Çayağzı Natural Gas Process Facility was completed and Ayazlı, D.Ayazlı and Akkaya production platforms installed at sea have been used since May 20, 2007, with the production of 500.000 sm<sup>3</sup>/ day.

Inauguration Ceremony of Silivri Natural Gas Storage Facility was held on 11 July 2007 and in 2008, totally 1.514.284.568 sm<sup>3</sup> of natural gas was stored by injection. In parallel with increasing natural gas need during the winter season, our storage facility started re-production in mid November 2007





Kuzey Marmara Field - ERD Wells / Silivri

and 893.997.948 sm<sup>3</sup> of natural gas was re-produced in 2008 and it continues to meet Turkiye's increasing gas demand.

In addition to Silivri Underground Natural Gas Storage Facility, within the scope of new storage area investigation, evaluation studies of the existing natural gas fields are still going on intensively.

The natural gas produced from the TPAO's fields is transported by TPAO pipelines 365 km in length and sold to 24 companies located in the region most of which are in textile, food and glass industries.

Thus, TPAO contributes to the economy of the Thrace Region by providing low-cost energy input to the industrial plants that play significant roles in the national economy.



Kuzey Marmara Natural Gas Process Facilities



Adiyaman District Management

### Adiyaman District Management

In 1954 after the acceptance of 6326 numbered Petroleum law, foreign companies entered Turkey for exploration and in 1958, the first petroleum exploration of Adiyaman Region was made by California Asiatic Oil and Texaco Overseas Petroleum at Kahta-1 well in Kahta field.

In Adiyaman, TPAO has realized the first oil discovery in Adiyaman Field that was put into production in 1971. After that, G.Adiyaman, K.Adiyaman and Bölükyayla in 1977, Çemberlitaş in 1982, Çukurtaş in 1985, B.Firat and Akpınar fields in 1986 were discovered.

In 1988, after the discovery of Karakuş field as a result of exploration activities, G.Karakuş in 1989, Cendere, K.Karakuş, Beşikli and O. Sungurlu in 1990, D.Beşikli, Bakacak, Tokaris and İkozce fields in 1991 were also explored.

Until that time, the activities had been carried out by Camp Chieftancy of Batman District; however, after the exploration

of these fields and enhanced production, they started to be carried out by Operation Management in 1991 and by District Management in 1992.

With the enhanced studies, Karadut in 1992, Çaylarbaşı in 1993, Sarısöğüt in 1994, Yananköy in 1995, Bozova in 1996, Eskitaş and Lilan in 1997, Akgün in 1998, Yalankoz in 2000, D.Karakuş in 2006, B.Gökçe in 2007, Gölgeli, Suvarlı and Şambayat fields in 2008 were added to the proven reserves.

Until the end of December 2008, in Adiyaman District, TPAO produced 178 million barrels of crude oil in 35 fields and has continued its production in 182 wells, in 26 fields.

Between the years 1960-1992, Batman District Management and after 1992, Adiyaman District Management was accomplished the exploration, drilling and production works in XI., XII., XIII. and XIV. Petroleum Regions.



Atatürk Dam

As of end of 2008, drilling of 20 wells was realized. 8 of those wells were completed as “oil wells”. 3 of these were registered as petroleum exploration.

Adiyaman District Management plays significant roles in exploration and drilling activities performed in co-operations with domestic and foreign firms. The technical support and equipments were supplied to the Western Black Sea project and other projects performed by TPIC (TPAO’s Subsidiary), within the context of geology, drilling and well completion services.

Adiyaman District Management has made a great deal of contribution to the development of social life in the region by increasing the operational efficiency in its activities and technical capacity to be helpful to the economy of the region and the country.



Mount Nemrut National Park



## subsidiaries and associated company

TPAO with its subsidiaries and associated company is carrying out its activities, both domestically and internationally to meet crude oil, natural gas and oil products demand of Turkiye most economically.

### Subsidiaries

- TPIC, Domestic and International Petroleum Activities
- TPOC, International Petroleum Activities
- TPBTC, Participation in BTC Crude Oil Pipeline Project
- TPSCP, Participation in South Caucasus Pipeline Project

### Associated Company

- KazakhTurkMunai Ltd. Joint Company, Petroleum Activities and Trade in Kazakhstan

### Subsidiaries

#### Turkish Petroleum International Company (TPIC)

TPIC was established in 1988 to operate in all branches of oil industry comprising exploration, drilling, field development, production, transportation, refining, crude oil and oil products trading and marketing.

#### Exploration and Production Activities

Within the exploration, development and production efforts of securing shares in blocks in 2008, TPIC evaluated the investment opportunities in Iraq, Colombia and for new initiatives in Venezuela, Ecuador and Bolivia.

### Colombia

#### Gonzalez Block

In 2007, TPIC entered Colombia's state oil company ECOPEPETROL's bidding round for the Gonzalez Exploration Block and acquired a 50% of stake as the operator. In February 2008, a Participation Agreement was signed with ECOPEPETROL and 50% of the share transfer was approved by Agencia Nacional de Hidrocarburos (ANH) on July 15, 2008.

Meeting with ANH for Gonzalez Block





Colombia Exploration and Production License Map

Gonzalez Block, approximately 22,000 hectares, is located in the north-eastern part of Colombia in the North Santander Region of the Catatumbo Basin, near the Venezuelan border. In the Gonzalez Block, 51 km 2D seismic acquisition was completed on November 15, 2008 and prospect evaluation studies are ongoing. In 2009, one exploration well will be drilled.

#### **Maria Conchita Block**

Within the initiatives made in 2008, on December 26, 2008 ANH approved the signing of an Exploration and Production agreement with the consortium of TPIC (91% of shares) and Multiservicios RJT LTDA (9% of shares) for the Maria Conchita Block and the agreement was signed on January 22, 2009. In 2009, Environmental Impact Assessment will be conducted and meetings will be held with the indigenous communities in order to reach a mutual understanding for the exploration studies to be carried out in the region. In the second half of 2009, seismic data acquisition and process studies will be initiated and by 2010, completion of 120 km<sup>2</sup> of 3D seismic data acquisition, process and interpretation are anticipated.

#### **Iraq**

In accordance with the Memorandum of Understanding (MOU) signed on May 3, 2006 between TPIC and Iraqi Ministry of Oil, a joint feasibility study for the development of Qasab Oil Field had been agreed upon. In this context, geophysical, geological and reservoir modeling studies were completed by TPIC's technical evaluation team with our colleagues from the Iraqi Ministry of Oil. The Feasibility Report on Qasab Oil Field was finalized in February of 2009 and is expected to be delivered to Iraqi Ministry of Oil in April 2009.



#### **Oil Field Services**

In accordance with the strategies of TPIC, our drilling and well completion services were intensified in Kazakhstan, Turkmenistan and Türkiye in 2008. In this broad energy sector ranging from petroleum to geothermal, it was continued to perform services such as drilling, well completion, running casing, fishing, cementing, acidizing, logging and DST through experience gained by working in various weather conditions and challenging work environments like high pressure, high temperature and deep wells. Moreover, the maintenance workshop and crew and the warehouse established in Batman by TPIC, support our services in terms of technical back up and supply assistance.

TPIC aims to perpetuate and enhance its activities in Kazakhstan, Turkmenistan, Iraq and Türkiye and for this reason, TPIC is planning to add a new rig to its rig fleet. By improving its service quality and capacity, TPIC intends to be a petroleum service company that is the preferred choice in its region.

#### **Türkiye Activities**

In the context of the 4+5 well drilling contract signed with Gürış Construction and Engineering Co. Inc., TPIC drilled 9 wells in Aydın-Germencik with F-200/13 rig. Also, 1 well was drilled with F-200/11 rig in Aydın-Söke for BM İnşaat ve Mühendislik A.Ş according to the 1+2 well drilling contract. Therefore, TPIC has taken place in such important projects that will contribute to the renewable energy potential of Türkiye. Moreover, it was continued to provide service to the sector through experiences gained in geothermal drilling with the 3+3 well drilling contract signed with BM İnşaat ve Mühendislik A.Ş on December 5, 2008.

Qasab Field the Iraqi Technical Team



Drilling Activity / Türkiye



Drilling Activity / Turkmenistan

In addition to this, 2+1 well drilling contract was signed with Energy Operations Turkey LLC (EOT) Company on August 07, 2008 and the operations within the 1<sup>st</sup> well have been continuing since November 28, 2008 in Diyarbakır with F-200/11 rig.

As for Turkish Petroleum Corporation (TPAO) projects, 30 wells were drilled in total, where 4 wells were drilled in the Thrace region with MR-7000/1 rig, 20 wells were drilled in Batman region with F-125/1, NAT-750 and NAT- 55 rigs and 6 wells were drilled in Adıyaman region with F-200/7, F-200/11 and F-200/13 rigs. Since TPIC started to provide service to TPAO on May 14, 2006; 53 wells have been drilled and drillings continue with 3 rigs in the 36<sup>th</sup>, 40<sup>th</sup> and 41<sup>st</sup> wells in Batman; 2 rigs in the 7<sup>th</sup> and 8<sup>th</sup> wells in Adıyaman.

Besides our drilling services TPIC provides well completion services to TPAO in Adıyaman and Batman regions with 2 rigs. Well completion services were performed in 169 wells in total where 136 of them were conducted in Batman region with IDECO-3 rig as of June 3, 2008 and 33 of them were conducted in Adıyaman region with IDECO-6 rig as of October 25, 2008. Our well completion operations for TPAO are continuing in the 137<sup>th</sup> well in Batman and in 34<sup>th</sup> well in Adıyaman with two rigs. In addition to this, according to the well completion contract of 5+1 wells signed with Gürış Construction and Engineering Co. Inc., TPIC conducted well completion operations in 6 wells in Aydın-Germencik with IDECO-5 rig from March 11-May 6, 2008.

#### **Iraq Activities**

From 2001-2002, TPIC drilled 20 wells using three rigs in Khurmala field for North Oil Company (NOC) in Iraq that possesses a great potential regarding the petroleum sector. Moreover on April 14, 2005, TPIC signed a service contract with NOC covering drilling, logging and cementing services for 10 wells in the same field. In order to commence our activities, establishments of secure conditions are the only setback. TPIC holds the advantage of providing services to Iraq with two large logistic and maintenance units, owned

by itself and TPAO, located close to the Iraqi border. TPIC will benefit from this advantage beginning in 2009 with the finalization of work orders.

#### **Kazakhstan Activities**

TPIC Aktobe Branch Office founded in 1999, is successfully conducting at 3 projects in Kazakhstan with 2 drilling rigs and 2 workover rigs. Within these projects, the drilling and well completion services that were performed for Zhaik Munay Company with IRI-100/2 and MR-7000/2 rigs, started on July 20, 2007, continue at the 15<sup>th</sup> and 17<sup>th</sup> wells. Well completion services continue with IDECO-11 rig at the 132<sup>nd</sup> well for Kazakh Oil Aktobe (KOA) Company where in 2008 operations were conducted in 14 wells and in total 131 wells since June 11, 2003.

TPIC has signed a 5 well drilling contract with Kazak Turk Munay (KTM) Company on April 22, 2008 with the aim of increasing drilling activities abroad and not confining itself only to well completion projects in Kazakhstan. The depth of one of the wells is 4.800 m and the others are 3.000 m. The drilling activities started on October 20, 2008 have continued on the first well with F-320/2 rig.

#### **Syria Activities**

The Damascus branch office opened in 2006 in order to direct TPIC's operations and follow up on new drilling and well completion projects in Syria. New projects and ventures are still being evaluated.

#### **Turkmenistan Activities**

TPIC has signed a 2+1 year drilling contract in Turkmenistan on March 23, 2007 and entered into a new market. The operations in wells with high pressure and 3.500 m depth started on September 14, 2007 with F-320/5 rig and drilling of 2 wells were completed. The drilling operations at the third well are continuing.



TPPD Fuel Station

### Oil Products Trade

TPIC has extensive experience in oil trading, crude oil products and transportation to Mediterranean whether by pipeline, rail, road tankers and vessels particularly in Iraq. Trade relations with Iraq State Oil Marketing Company (SOMO) started in 1999 and continued with fuel oil trading in 2008. Despite all challenges and difficulties in Iraq, we transferred and traded 220.000 tons of fuel oil by roadway from May to December, 2008. TPIC provided a significant contribution to both countries socio-economic policies. This project alone improved the employment of the local people in both Iraq and Türkiye. In addition to the Turkish route for fuel oil trading, were continued the studies on Syria, Jordan and Iranian routes.

In order to strengthen the relations between Türkiye and Syria, a cooperation protocol was signed by both countries' Ministries of Energy. According to this protocol; the demand of oil products in Syria would be met mostly by Türkiye. Within this frame; between TPIC and SYTROL for Gas Distribution signed on LPG purchase contract in the beginning of 2008. Totally 50.000 tons of LPG have been delivered to Halab region of Syria. Additionally, mutual efforts to cooperate upon crude oil trading, bunkering activities and other oil and oil products trading.

Another region that TPIC developed and achieved success in a short time as a result of the market studies is Caspian Region. The oil supplied from Turkmenistan refineries is marketed to other countries of region. In this context, 155.000 tons of oil products was traded via the Caspian Sea from midyear to the end of 2008. Together with the current trade, works of sale of the crude oil and fuel oil supplied from Kazakhstan and Turkmenistan to the international market from Persian Gulf in the south of Iran with swap agreement are being carried out. As for the domestic market, another project in 2008 is importing oil products to the local market in Türkiye.

TPIC has procured products from the international market to contribute its subsidiary TPPD to acquire competition opportunity in domestic fuel market.

### TP Petroleum Distribution Limited Company

TP Petroleum Distribution Limited Company which was established on February 16, 2006 as a subsidiary of TPIC, has taken its place in domestic petroleum distribution market in order to make TPAO a fully integrated company. TP has acquired its distribution license on October 19, 2006 for a fifteen year period; it established 100 retail (station) points in 2008 and has started sales in the domestic market.

The main target of TPPD is to become a leading organization in the sector, by having 650 dealers and reaching %10 market share by 2015. Main Growth Strategy of the company is to maintain its good work without making concessions on quality within the rules of a free market economy, by having retail sales in major population centers especially metropolises, and storage facilities in strategic points.

In order to increase its capability and competitiveness especially in Mediterranean Region, TPPD has acquired two storage facilities in Dörtöyl (94.000 m<sup>3</sup>) and Kırıkkale (20.000 m<sup>3</sup>) and has started use of them. (So far, 12.000 m<sup>3</sup> in Dörtöyl and 15.000 m<sup>3</sup> in Kırıkkale has been processed).

The process to get the licenses for the plant that will be built on land 30.000 m<sup>2</sup> in İzmir Aliağa that was purchased in 2007 for expanding logistic network. In addition to this, the efforts to acquire storage facilities in the Black Sea, and both sides of Marmara region continue. In order to establish a well connected network liaison offices have been opened in; Aliağa, TPAO Batman and Batman Tüpraş, Marmara Ereğli, the İzmit-Körfez, Kırıkkale Depot, Kırıkkale Tüpraş, Mersin, Hatay Dörtöyl and Giresun. In addition, a tanker fleet has been established to European Union norms in order to supply fuel in desired quality, prevent the transportation problems and keep distribution of fuel in our control.

In 2008, with the new investments and transfers, 68 new dealers have joined and our dealer network has increased to 99. The number of dealers, who have attained license and started activity, has reached 65. At the end of 2008, 87 retail points under our corporate identity have been



Shah Deniz TPG-500 Platform / Caspian Sea

finalized. Distribution of our dealers in terms of regions are; 34 % Central Anatolia, 20 %, Marmara, 17 % Eastern and Southeastern Anatolia, 11 %, Aegean, 9 % Black Sea and 9 % Mediterranean Region. Our dealer network is represented in 85 % of our country.

In the year of 2008, 61.800 tons white products (diesel, gasoline) 10.000 tons black oil (fuel oil) and 1.800 tons of LPG sold to the dealers, public institutions and free users who make bulk purchases. Total revenue from the sales amounted to 148.087.830 TL.

#### **Turkish Petroleum Overseas Company Ltd. (TPOC)**

TPOC Ltd. was established in Jersey, Channel Islands in 1996 as an affiliate of TPAO to carry out all activities related with technical and commercial oil and gas trade.

TPOC Ltd. currently participates in Shah Deniz, 9% and Alov 10% Projects in Azerbaijan sector of the Caspian Sea.

TPOC is working as an operator of exploration projects in Libya, with 51% share in NC-Block-188 (Ghademes Basin) and NC-Block-189 (Sirte Basin) and with 100% share in NC-Block-147/3-4 (Murzuq Basin). In addition, TPOC Ltd. holds 13,5% share in IIA, IIB and III Blocks in Georgian region of Black Sea.

#### **Turkish Petroleum BTC Ltd. (TPBTC Ltd.)**

TPBTC Ltd. was established in Cayman Islands on February 20, 2002 in order to participate in Baku–Tbilisi–Ceyhan Main Export Crude Oil Pipeline (BTC) Project, which has a primary objective of carrying the ACG oil to international markets and the Project Companies (BTC Co., BTC Int. Investment Co. and BTC Finance B.V.) on behalf of TPAO.

TPBTC Ltd. currently has a 6,53 % share in the BTC Project.

#### **Turkish Petroleum SCP Ltd. (TPSCLD Ltd.)**

TPSCLD Ltd. was established in Cayman Islands on May 24, 2002 in order to participate in South Caucasus Pipeline (SCP) Project, in accordance with the related project agreements on behalf of TPAO.

TPSCLD Ltd. is a party to SCP Project agreements which have been signed on February 27, 2003 under the guarantee of TPAO. TPSCLD Ltd. currently has a 9% share in the SCP Project.





Laktibay Storage Tanks / Kazakhstan



West Yelemez Field

## Associated Company

### Kazakturkmunai (KTM) Ltd. Joint Company

KazakhTurkMunai (KTM) Ltd. Joint Company was established by the Foundation Agreement signed between TPAO and the Kazzarubejgeologia State Enterprise (KZBG) of the Kazakhstan's Ministry of Geology and Preservation of Underground Resources on January 9, 1993. By this agreement, setting the shares as KZBG 51 % and TPAO 49 %, KTM Ltd. has acquired hydrocarbon exploration and exploitation rights in 7 blocks in 4 different regions of Western Kazakhstan.

KTM Ltd. signed with Kazakhstan Government, the "Petroleum Exploration, Development, Production and Marketing Contract" which governs the activities within these blocks, on May 31, 1994. The contract, has set out the participation interests as 49 % TPAO, 26 % KZBG and 25 % Munaigaz, and established an 11 (4+4+3) years of exploration period starting from February 4, 1993 and a 25 years of production period for each field starting from the date of economic discovery.

The South Karatobe Field in Aktobe Region was also added to the assets of KTM Ltd. by the "Contract on the Completion of Exploration and Production of Hydrocarbons for the South Karatobe Oil Field" signed, on May 18, 1999, between KTM Ltd. and the Agency of the Republic of Kazakhstan on Investments.

According to the results of intensive exploration operations, KTM Ltd. has relinquished 5 blocks completely and 2 blocks partially which were granted by the Contract dated May 31, 1994. KTM Ltd. still owns Block IV in Aktau Region and Block Ila in Aktobe Region under this Contract and South Karatobe license under the Contract dated May 18, 1999.

In Block IV at Aktau Region; the West Yelemes oil field was declared as commercial discovery on March 20, 1996 and the Northeast Saztobe and the Southeast Saztobe oil fields on May 13, 1999. These fields have been on stream since May 1999. The East Saztobe and Tasım-Bekbolat oil fields within the same Block, are subjected to test production. The total average daily oil production of the fields within this block is 1.700 barrels.

The Laktibay oil field within the Block Ila at Aktobe Region, was declared as commercial discovery on April 24, 2003. The field has been on stream since November 1999 and its average daily production is 1.200 barrels. The other oil field at Aktobe Region, the South Karatobe, was declared as commercial discovery on February 23, 2003. It has been on stream since May 2003 and its average daily production is 1.500 barrels. KTM Ltd. produced a total of 1,6 million barrels of oil in the year 2008. As of December 31, 2008, its cumulative production is 21,7 million barrels of oil.

finance

### Investments

In 2008, TPAO's domestic investment expenditures were 318 million USD, while it was projected 461 million USD in 2009.

In 2008, 15 % of the total domestic investment expenditures was for production, 10 % for exploration and 75 % for both drilling and the others.

Domestic Oil and Natural Gas Exploration and Development Investment Expenditures (Thousand YTL)

	2006	2007	2008
Exploration	112.128	135.437	42.823
Production	110.407	39.925	61.428
Drilling	151.260	220.702	166.992
Others	39.696	56.390	141.306
<b>TOTAL</b>	<b>413.491</b>	<b>452.454</b>	<b>412.549</b>

Domestic Oil and Natural Gas Exploration and Development Investment Expenditures (Thousand USD)

	2006	2007	2008
Exploration	78.067	103.577	33.001
Production	76.869	30.533	47.340
Drilling	105.312	168.784	128.693
Others	27.638	43.125	108.898
<b>TOTAL</b>	<b>287.886</b>	<b>346.019</b>	<b>317.932</b>

1\$ = 1,4363 YTL 1\$ = 1,3076 YTL 1\$ = 1,2976 YTL

## Exploration and Development Investments Abroad (USD)

Countries	Investments in 2008	Cumulative Investments
Azerbaijan	309.190.609	3.191.094.538
ACG Project (TPAO)	235.978.029	2.224.714.508
Shah Deniz Project	72.233.179	482.978.611
SCP Project	-	108.979.872
BTC Project	115.338	324.328.038
Kurdashi Project	-	17.302.390
Alov Project	3.063	26.158.270
TPAO Baku Office	431.000	4.104.023
TPBTC Baku Office	376.000	632.074
TPOC Baku Office	54.000	1.896.752
Kazakhstan	96.835	287.786.079
Turkmenistan	80.100	4.727.642
Libya	13.421.987	54.609.006
Algeria	-	25.548.592
Georgia	26.621	628.750
New Ventures	2.500.000	2.605.450
Other	180.295	336.266
<b>TOTAL</b>	<b>325.496.447</b>	<b>3.567.336.323</b>

Besides, its domestic oil and gas exploration and production, TPAO started its international activities in 1993, which grew continuously over the years.

By the end of 2008, approximately 95 % of the total investments are realized in Azerbaijan projects. The projects in Azerbaijan constitute great importance for both TPAO and the country.

**TURKISH PETROLEUM CORPORATION  
AUDITOR'S REPORT  
AS OF 1 JANUARY – 31 DECEMBER 2008**

To the Board of Directors and Shareholders of  
TURKISH PETROLEUM CORPORATION AND SUBSIDIARIES

We have audited the accompanying consolidated financial statements of Turkish Petroleum Corporation (“TPAO” or “The Company”) and affiliated companies and its subsidiaries (related parties) (“The Group”) as of December 31, 2008 for the year then ended comprising the consolidated balance sheet, income statement, statement of cash flow and statement in change in shareholders equity.

The Management of the Company is responsible for the preparation and fairly presentation of the financial statements in accordance with the International Financial Reporting Standards. This responsibility includes; planning, applying and maintaining the required internal control system, making an accounting estimates and selecting the fair accounting principles for the purpose of providing the financial statements with the fair presentation by preparing the related financial statements in the manner that they do not involve any material misstatement arising from significant mistakes and / or fraud.

Our responsibility is to express an opinion on these financial statements based on our audit. Our audit was conducted in accordance with Auditing Standards published by Capital Markets Board. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

Our audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. The selection of the Auditing techniques were performed according to our professional opinion including whether the financial statements are free of material misstatement by executing risk assessment and whether the financial statements are arising from any mistake and / or fraud and irregularity. During the risk assessment, the internal control of the company was considered over the financial reporting as a basis for designing audit procedures that are appropriate in the circumstances. However, our purpose is not to express an opinion about the effectiveness of the internal control but to expose the interaction between the internal control system and the financial statements prepared by company management so as to make the auditing techniques suitable to the conditions. Our auditing also includes the evaluation of the conformity of the presentation of the financial statements as a whole and the accounting estimates made through accounting policies adopted by the company management.

We believe that the auditing evidences we obtain provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Turkish Petroleum Corporation (TPAO) and its subsidiaries, as of December 31,2008 and the result of their operations and cash flows for the years ended in accordance with International Financial Reporting Standards (IFRS).

Ankara, 11.06.2009

SER & BERKER Auditing and Certified Public Accountancy Inc.  
Member Firm of DFK International



M.Ertuğrul Akkoyunlu  
Chief Auditor Partner

## Basis Of Presentation for the Financial Statements

### 1. Basis of Presentation of the Financial Statements Statutory Books and Financial Statements;

The consolidated financial statements of TPAO and the Group have been prepared in accordance with International Financial Reporting Standards (IFRS). The company, which is incorporated in Turkey, maintains its books of accounts and prepares its statutory financial statements in accordance with the Turkish Commercial Code and Tax Legislation and the Uniform Chart of Accounts issued by the Ministry of Finance. The foreign subsidiaries and associates maintain their books of accounts in their local currency according to current commercial / fiscal legislation, project agreements, attachments and in compliance with the standards taken up as references. The financial statements have been prepared from statutory financial statements of the Company and its subsidiaries and associat

The functual currency that has been used in the reporting is as New Turkish Liras (NTL), the financial statements and the notes have been performed as New Turkish Liras (NTL).

### Comparison of the previous period financial statements;

Comparison information was classified for the purposes of conformation with the presentation of the current period financial statements if necessary.

### Basis of Consolidation;

Consolidated financial statements comprising TPAO ("Company", "Parent Company") and the partnership controlled by TPAO, has been prepared by considering the financial statements belonging to the year ending on 31, December 2007. The subsidiaries are defined as the companies controlled by the Parent Company holding more than 50% of the shares and voting rights directly or indirectly within the scope of capital and managerial relations or having the right of electing the majority of the management or having the majority of the management over the subsidiaries. The power of control implies that Parent Company plays the efficient role over the decisions of the company (Subsidiary) regarding the financial and operational politics and the power of managing aforementioned politics for the purpose of benefiting from the operations of the pre-mentioned company.

The companies those do not have supervision capability but whose 20%-50% of the shares controlled by the parent company are defined as Partnership.

The subsidiaries and affiliated companies and their shareholding percentages at 31 December 2008 are as follows:

Affiliates and Subsidiaries	Effective Rate of Ownership (%)	Method
KTM	49	Equity Method
TPIC	100	Full Consolidation
TPBTC	100	Full Consolidation
TPSCP	100	Full Consolidation
TPOC	100	Full Consolidation

The company's shareholding percentage in KTM is shown in the financial statements by using **equity method**. The equity and net income attributable to minority shareholders' interests are shown separately in the balance sheet and income statement, respectively. The losses applicable to the minority are charged against the minority interest, so as not to exceed the minority interest in the equity of subsidiary. As the investment in KTM is classified as an associated company it is accounted for on equity basis. Participating interest acquired in KTM is accounted for by the equity method. The equity method is a method of accounting whereby an equity investment is initially recorded at cost and subsequently adjusted to reflect the investor's share of the net profit or loss of the associate (investee). Distributions received from the investee reduce the carrying amount of the investment. The recoverable amount of an investment in an associate is assessed and if there is an indication that the carrying amount of the associate may be impaired permanently adjustment is made to state it at its recoverable amount. The book value of the investment in the capital of subsidiaries held by the parent company has been off-set against the equity of the invested companies and all inter-company purchase and sales and all accounts receivable and payable balances have been eliminated.

## 2. Summary of Significant Accounting Policies

### 2.1 Revenue

Income of the Company includes the total invoiced amounts of revenues from sales and services rendered. Income from sales is recorded in the financial statements when significant risks and utilities emanating from ownership are transferred to the buyer. These risks and utilities pass on to the buyer when goods and services are delivered to the buyer. Net sales are calculated by deducting sale returns and discounts from the invoiced sale amounts of goods and services delivered to the buyer. In case there is a significant financing expense in sales, the fair value is determined by discounting the future cash receipts by the implicit interest rate in the said financing expense.

**According to accrual principle, differences between fair values and the nominal values of the sales are recognized as interest income.**

### 2.2 Inventories

**Inventories are valued at the lower of cost and net realizable value.** Cost of inventories includes the raw materials, work-in progress, finished goods, other inventories is assigned by using weighted average cost formula.

### 2.3 Financial Instruments

Financial instruments consist of following financial assets and liabilities;

#### Cash and Cash Equivalents

Cash and cash equivalents comprise cash on hand, cash in banks and cash in transit.

Cash on hand comprise New Turkish Liras and foreign currency balances New Turkish Liras balances are carried at cost, foreign currency balances are carried at their YTL equivalent values calculated using the buying exchange rates announced by Central Bank of the Republic of Turkey at the balance sheet date. Buying rates are used for evaluating foreign currencies in assets and Selling rates are used for evaluating foreign currencies in liabilities.

Bank deposits comprise time and demand deposits and interests of these deposits. New Turkish Liras balances

are carried at cost, foreign currency balances are carried at their YTL equivalent values calculated using the buying exchange rates announced by Central Bank of the Republic of Turkey at the balance sheet date.

Due to the fact that the liquid assets in foreign currency are exchanged to the New Turkish Lira in effective rate in balance sheet date, the fair value of these assets are accepted to be equivalent to their registered value. Cash and cash equivalents in foreign currencies are translated to New Turkish Liras using the exchange rates at the balance sheet date. Thus, fair values of these assets are accepted to be equal to their book values.

Bank Deposits ,checks received and registered value of cash are assumed to be equal with their fair values as they are disposed of in short terms and free of the risk of impairment.

Fair value is the amount at any financial instruments, between two purchased and saled parts , that has been changed of hands as cleaned from collusion, primarily, stock market value of relevant asset, in case the lack of stock market value the purchase and sale value which is suitable for the definition is being accepted as fair value.

#### Trade Receivables

Trade receivables are financial assets recognized by direct sale of goods and services to buyers.

Discounted and doubtful receivable provision deducted values of trade receivables are assumed to be equivalent to their fair values.

#### Related Parties

At attached financial statements, scope of consolidated companies (directly) and the companies which have been controlled by these consolidated companies (indirectly), affiliates and project partners have been accepted as related parties.

#### Short and Long Term Bank Borrowings and Trade Payables

Short and long term bank borrowings are represented with values of principal and the accrued interest expenses as

at balance sheet date, discounted by the effective interest rate.

Trade payables are financial liabilities recognized by direct purchase of goods and services from suppliers.

#### Financial Investments

Financial Instruments driven to equity which do not have any registered value in active market and its fair value cannot be measured certainly are reported as their cost of value.

#### 2.4 Tangible Fixed Assets

The fixed assets that have been expected to be used more than one year, reported in first at cost of value. At the following periods, they are appreciated with cost of value. On the other hand, the fixed assets that has been bought before the fiscal period has been undergone to inflation accounting and consequently has been moved with its improved historical cost. Also has been liabled to depreciation with its improved value. Consequently the fixed assets reflect net values at the financial statements that has been reported after the accumulated depreciation has been deducted. The company has been calculated the depreciation by considering the useful life that has been denoted at the Law of Tax Procedures. The normal depreciation has been accepted as depreciation method and the depreciation expense has been calculated as prorata depreciation.

The depreciation methods and rates that have been used are as follows:

	Depreciation Rate
Land Improvements	5 % - 15 %
Buildings	2 %
Machinery and Equipments (*)	10 % - 20 %
Motor Vehicles	20 %
Furniture, Fixtures and Office Equipment	5 % - 16 %

(\*) Includes machinery and equipment used for production oil or natural gas.

At least in every end of the fiscal period the depreciation rates have to be controlled. On the other hand it has to be tested in case there is any impairment at the fixed assets. However, there has not been happened any operation and there has not been any group of assets.

#### 2.5 Foreign Currency Assets and Liabilities

The assets and liabilities related to foreign currencies have been translated to New Turkish Liras by the usage of the Central Bank exchange buying rate of Turkey as of the balance sheet date. The transactions related to foreign currencies have been happened in the period, are being translated to New Turkish Liras by the usage of de facto exchange rate. The foreign currency gains and losses from these transactions have been reported at the Income Statements.

#### 2.6 Impairment of Assets

In case the carrying values of assets exceed the estimated recoverable amount, the assets or cash-generating units are written down to their recoverable amount and the provision is reflected to the income statement as an expense.

On the other hand; the recoverable amount of assets is the greater of net selling price and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset.

No such case is detected at the balance sheet period.



## 2.7 Borrowing Costs

Borrowing costs have been registered as expense. The borrowing costs related to qualified assets have been included to the cost of the qualified asset. In order to put into the qualified assets ready for use and sell, when the necessary operations completely finished the capitalization of borrowing costs have been ended.

## 2.8 Deffered Tax

Deferred tax is accounted for using the liability method in respect of temporary differences arising from differences between the carrying amounts of assets and liabilities in the financial statements and the corresponding tax basis used in the computation of taxable (statutory) profit. Mainly, the temporary differences, the gains and losses in accordance with the declaration of Tax Laws have been taken root from the accounting of the different financial statement periods. Deferred tax liabilities are generally recognized for all taxable temporary differences and deferred tax assets are recognized to the extent that it is probable that taxable profits will be available against which deductible temporary differences can be utilized.

Because the company operates in different countries, consequently faces with different tax enterprises, both tax assets and liabilities are against to the different tax authority, do not offsetting each other. The tax assets and the liabilities relating to consolidated companies have been reported like during the consolidation.

## 2.9 Expenditure for Exploration and Development

Exploration and development costs incurred in Turkey are charged to income statement as required by the Turkish Petroleum Law, while exploration and development expenses can be recognized in Income statement, since the company has been reporting in accordance with IFRS , related expenses are accounted according to successful effort method explained below. Drilling costs incurred on both ground and underground improvements (platforms, pipelines and similar items) as well as expenditure on machinery, equipment and other fixed assets related to the oil and gas production activities are capitalized and depreciated as required by the circumstances.

The amounts paid for the investments and interest in joint operation agreements are capitalized and are amortized on basis of the income following the discovery of petroleum,

in the case where no petroleum is available the remaining balance of the investment and/or the interest in joint operation agreements are written off to expenses.

Drilling materials such as “casing” is put into accounts due to consequences of research activities. If proved reserves are found at the well, casing cost is capitalized and amortized but if the well is dry it is written off as expense.

## 2.10 Asset Retirement Obligations

The fair value of asset retirement obligations is recorded as a liability when incurred, typically at the time the assets are installed or placed in service. Amounts recorded for the related assets are increased by the amounts of these obligations. Over time the liabilities will be increased for the change in their present value and the initial capitalized costs will be depreciated over the useful lives of the related assets.

## 2.11 Petroleum Accounting Successful Effort Method

The Company recognizes the petroleum research and development costs in accordance with successful effort method. This method proposes the capitalization of the acquisition cost the other costs incurred regarding the activities of petroleum exploration in case of finding proved reserve. In case of not finding, the above mentioned method proposes to perform the accounting transactions and the financial reporting within the scope of recording to expense accounts. The exploration expenses before drilling are recognized in Income Statement whether the well is successful or not. Development expenses are the expenses incurred in order to accelerate the production of petroleum or natural gas. In case these operations do not achieve the objective, the amounts should be capitalized.

The petroleum exploration and development expenses capitalized in case of finding reserves is subject to depletion by redemption rate found by dividing the actual production to beginning period total estimated reserve amount. discounted by the effective interest rate.

Trade payables are financial liabilities recognized by direct purchase of goods and services from suppliers.

Turkish Petroleum Corporation and Its Subsidiaries  
 Consolidated Balance Sheets as of December 31, 2008  
 and December 31, 2007 (Thousand YTL)

	2008	2007
<b>CURRENT ASSETS</b>	<b>2.499.068</b>	<b>1.512.168</b>
Cash and Cash Equivalents	1.832.653	818.354
Financial Investments	103	52.411
Trade Receivables	233.275	201.445
Other Receivables	21.762	57.223
Inventories	253.184	284.268
Due From Related Parties	641	101
Other Current Assets	157.450	98.366
<b>NON-CURRENT ASSETS</b>	<b>5.879.506</b>	<b>4.311.611</b>
Other Receivables	481	4.137
Due From Related Parties	152.154	138.027
Financial Investments	26	19
Investments Evaluated with Equity Method	37.966	22.116
Wells	1.464.609	1.820.900
Tangible Assets	3.868.323	2.170.034
Intangible Assets	255.866	120.158
Deferred Tax Assets	7.596	-
Other Non-Current Assets	92.485	36.270
<b>TOTAL ASSETS</b>	<b>8.378.574</b>	<b>5.823.829</b>

Turkish Petroleum Corporation and Its Subsidiaries  
Consolidated Balance Sheets as of December 31, 2008  
and December 31, 2007 (Thousand USD)

	2008	2007
<b>CURRENT ASSETS</b>	<b>1.652.496</b>	<b>1.298.333</b>
Cash and Cash Equivalents	1.211.832	702.630
Financial Investments	69	45.000
Trade Receivables	154.252	172.959
Other Receivables	14.390	49.131
Inventories	167.417	244.070
Due From Related Parties	423	87
Other Current Assets	104.113	84.456
<b>NON-CURRENT ASSETS</b>	<b>3.887.791</b>	<b>3.701.950</b>
Other Receivables	318	3.552
Due From Related Parties	100.611	118.508
Financial Investments	17	16
Investments Evaluated with Equity Method	25.105	18.989
Wells	968.465	1.563.407
Tangible Assets	2.557.907	1.863.170
Intangible Assets	169.190	103.166
Deferred Tax Assets	5.023	-
Other Non-Current Assets	61.155	31.141
<b>TOTAL ASSETS</b>	<b>5.540.286</b>	<b>5.000.283</b>

\* The financial statements have been audited and prepared in the currency of new Turkish Lira. The financial statements have been translated from YTL to USD with The Central Bank Buying Exchange Rate at period-end. The Central Bank Buying Exchange Rates for the end of 2007 and 2008 are 1,1647 YTL., and 1,5123 YTL.

Turkish Petroleum Corporation and Its Subsidiaries  
 Consolidated Balance Sheets as of December 31, 2008  
 and December 31, 2007 (Thousand YTL)

	2008	2007
<b>LIABILITIES</b>		
<b>SHORT - TERM LIABILITIES</b>	<b>998.336</b>	<b>716.291</b>
Financial Liabilities	158.523	10.397
Trade Payables	92.489	44.580
Other Liabilities	44.638	56.156
Due to Related Parties	-	1.529
Corporation Tax Liability	67	1.137
Debt Provisions	403.220	281.337
Other Short - term Liabilities	299.399	321.155
<b>LONG - TERM LIABILITIES</b>	<b>505.709</b>	<b>333.163</b>
Financial Liabilities	169.627	79.974
Other Liabilities	197.922	2.395
Due to Related Parties	-	49.791
Provisions for Employee Termination Benefits	130.618	130.572
Deferred Tax Liabilities	2.242	12.259
Other Long - Term Liabilities	5.300	58.172
<b>SHAREHOLDER'S EQUITY</b>	<b>6.874.529</b>	<b>4.774.375</b>
Paid-in Capital	1.411.171	950.000
Foreign Exchange Differences	691.273	-28.867
Profit Reserves	946.334	798.029
Retained Earnings / Loss	1.549.063	1.130.363
Net Income / Loss for the Period	2.276.688	1.924.850
<b>TOTAL LIABILITIES</b>	<b>8.378.574</b>	<b>5.823.829</b>

Turkish Petroleum Corporation and Its Subsidiaries  
Consolidated Balance Sheets as of December 31, 2008  
and December 31, 2007 (Thousand USD)

	2008	2007
<b>LIABILITIES</b>		
<b>SHORT - TERM LIABILITIES</b>	<b>660.144</b>	<b>615.000</b>
Financial Liabilities	104.822	8.927
Trade Payables	61.158	38.276
Other Liabilities	29.517	48.215
Due to Related Parties	-	1.312
Corporation Tax Liability	44	976
Debt Provision	266.627	241.553
Other Short - term Liabilities	197.976	275.741
<b>LONG - TERM LIABILITIES</b>	<b>334.397</b>	<b>286.051</b>
Financial Liabilities	112.165	68.665
Other Liabilities	130.875	2.056
Due to Related Parties	-	42.751
Provisions for Employee Termination Benefits	86.370	112.108
Deferred Tax Liabilities	1.482	10.525
Other Long - Term Liabilities	3.505	49.946
<b>SHAREHOLDER'S EQUITY</b>	<b>4.545.745</b>	<b>4.099.232</b>
Paid-in Capital	933.129	815.661
Foreign Exchange Differences	457.100	-24.785
Profit Reserves	625.759	685.180
Retained Earnings / Loss	1.024.309	970.519
Net Income / Loss for the Period	1.505.448	1.652.657
<b>TOTAL LIABILITIES</b>	<b>5.540.286</b>	<b>5.000.283</b>

\* The financial statements have been audited and prepared in the currency of new Turkish Lira. The financial statements have been translated from YTL to USD with The Central Bank Buying Exchange Rate at period-end. The Central Bank Buying Exchange Rates for the end of 2007 and 2008 are 1,1647 YTL., and 1,5123 YTL.

Turkish Petroleum Corporation and Its Subsidiaries  
 Consolidated Income Statement for the Year Ended  
 December 31, 2008 and December 31, 2007  
 (Thousand YTL)

	2008	2007
<b>SUSTAINABLE OPERATION</b>		
Sales Income	3.290.034	2.589.272
Cost of Sales (-)	-1.249.256	-651.279
<b>GROSS PROFIT (LOSS)</b>	<b>2.040.778</b>	<b>1.937.993</b>
Marketing and Sales Expenses (-)	-141.270	-21.494
General administrative expenses (-)	-332.491	-238.814
Research and Development Expenses(-)	-524.415	-400.697
Other Operating Revenues	781.904	872.174
Other Operating Expenses	-24.536	-4.025
<b>OPERATING PROFIT (LOSS)</b>	<b>1.799.970</b>	<b>2.145.136</b>
The Investment's Rates In Gains/Losses Appreciated with Equity Method	15.850	19.485
Financial Revenues	978.196	802.264
Financial Expenses (-)	-43.118	-1.024.103
<b>CONTINUED OPERATIONS BEFORE TAX PROFIT (LOSS)</b>	<b>2.750.898</b>	<b>1.942.783</b>
Continued Operations of Tax (Loss)	-474.210	-17.933
Tax Losses for the Period	-494.065	-5.674
Deferred Tax Gains	19.855	-12.259
<b>CONTINUED OPERATIONS PROFIT (LOSS)</b>	<b>2.276.688</b>	<b>1.924.850</b>
<b>NET INCOME (LOSS)</b>	<b>2.276.688</b>	<b>1.924.850</b>

Turkish Petroleum Corporation and Its Subsidiaries  
Consolidated Income Statement for the Year Ended  
December 31, 2008 and December 31, 2007  
(Thousand USD)

	2008	2007
<b>SUSTAINABLE OPERATION</b>		
Sales Income	2.175.517	2.223.124
Cost of Sales (-)	-826.064	-559.182
<b>GROSS PROFIT (LOSS)</b>	<b>1.349.453</b>	<b>1.663.941</b>
Marketing and Sales Expenses (-)	-93.414	-18.455
General Administrative Expenses (-)	-219.858	-205.043
Research and Development Expenses (-)	-346.766	-344.035
Other Operating Revenues	517.030	748.840
Other Operating Expenses	-16.224	-3.456
<b>OPERATING PROFIT (LOSS)</b>	<b>1.190.220</b>	<b>1.841.793</b>
The Investment's Rates in Gain/Losses Appreciated with Equity Method	10.481	16.730
Financial Revenues	646.827	688.816
Financial Expenses (-)	-28.512	-879.284
<b>CONTINUED OPERATIONS BEFORE TAX PROFIT (LOSS)</b>	<b>1.819.016</b>	<b>1.668.054</b>
Continued Operation of Tax (Loss)	-313.569	-15.397
Tax Losses for the Period	-326.698	-4.872
Deferred Tax Gains	13.129	-10.525
<b>CONTINUED OPERATIONS PROFIT (LOSS)</b>	<b>1.505.447</b>	<b>1.652.657</b>
<b>NET INCOME (LOSS)</b>	<b>1.505.447</b>	<b>1.652.657</b>

\* The financial statements have been audited and prepared in the currency of new Turkish Lira. The financial statements have been translated from YTL to USD with The Central Bank Buying Exchange Rate at period-end. The Central Bank Buying Exchange Rates for the end of 2007 and 2008 are 1,1647 YTL., and 1,5123 YTL.

Financial Ratios Derived from Consolidated Financial Statements  
of Turkish Petroleum Corporation for 2008

CURRENT RATIO (Working Capital Ratio) = 2,5

ACID - TEST RATIO = 2,25

LIQUIDITY RATIO (Liquid Assets Ratio) = 1,84

FINANCIAL LEVERAGE = 0,18

THE RATIO OF EQUITY TO TOTAL ASSETS = 0,82

THE RATIO OF EQUITY CAPITAL TO LIABILITIES = 4,57

GROSS SALES REVENUE / NET SALES REVENUE = 0,62

NET PROFIT / TOTAL ASSETS RATIO = 0,24



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