

# TURKEY

*By Ata Akcil*

*Suleyman Demirel University, Department of Mining Engineering*

**T**urkey, situated at the crossroads of Asia and Europe, has been called “the cradle of civilization”. One might discover exactly what is meant by this phrase by travelling through this historic land. Besides its cultural and historical attractiveness, it is a founding member of the OECD and the Black Sea Economic Co-operation Organisation and a member of NATO, and recently has been accepted as a candidate to the European Union (EU).

The EU countries have always been crucial trading partners for Turkey. More than half of Turkish export goods are sold in the EU. This, in turn, makes the EU the biggest export market for Turkey. On the European side, Turkey, with its 68 million population, offers an attractive and growing export market to the member states of the EU. Turkey is keen to join the EU and already has a Custom Union which was established in 1996.

## Economic Overview

Given its EU candidature, Turkey intends to meet the economic criteria through modernisation and upgrading of its existing market economy. However, the associated restructuring programme has been affected by a weak world economy and this has had an adverse impact on Turkey's internal and external markets. At the beginning of this year, Kemal Devris, the Minister of State responsible for the economy, secured a new stand-by agreement with the IMF on a wide range of issues, including targets for 2002-2004, finance and monetary policies and structural reforms. IMF officials are now expected to submit reports to the IMF executive and recommend the disbursement of additional financing for the new programme.

Although the World Bank ranks Turkey among the world's top 25 economies, its current crisis has resulted in an 8% decline in GNP during

the first three quarters of 2001. Nevertheless, Mr Ecevit's government has been able to pass a series of laws designed to liberalise the economy, reduce subsidies and encourage foreign investment. As a consequence, by the end of January 2002, inflation was decelerating as was the depreciation of the Turkish Lira, both developments signalling that economic recovery could be on the way.

## Turkish Foreign Market Values (US\$ '000)

Sectors	2000	2001
Exports		
Agriculture/forestry	1,973,256	2,231,100
Fishing	24,506	28,342
Mining/quarrying	400,445	338,041
Manufactures	25,339,608	28,565,090
Others	37,091	23,856
<b>Total</b>	<b>27,774,906</b>	<b>31,186,430</b>
Imports		
Agriculture/forestry	2,127,041	1,411,339
Fishing	1,661	879
Mining/quarrying	7,104,748	6,713,350
Manufactures	45,018,097	32,180,558
Others	251,273	200,472
<b>Total</b>	<b>54,502,821</b>	<b>40,506,599</b>

*Source: SIS, Turkey*

Turkey changed its economic development strategy in the 1980s, from import-substitution towards export-led economic growth. This led to a significant increase in industrial production, which is now mainly directed towards the processing of agricultural goods, metallurgy, textiles, and the manufacture of automobiles and agricultural machinery. In parallel to accelerated industrial growth, energy demand has been increasing rapidly and in order to meet the challenge the liberalisation of the energy market is now high on the agenda for both public and private stakeholders.

Turkey is well-endowed with natural resources such as borax, chromium, copper, zinc, magnesite, feldspar, pumice, kaolin and salt, and also has modest amounts of oil and natural gas. It is estimated to provide 2.5% of the world's current industrial minerals requirements and possesses 62% of the world's known borax resources, 20% of bentonite and more than 50% of perlite resources. Thus, the country's minerals sector is a leading supplier of raw material to basic industries and also helps to provide an impetus for other sectors.

### Iron and Steel

The iron and steel sector has gained in importance, particularly with regard to exports, and production now far exceeds domestic consumption. Iron and steel form the basis for Turkey's industrialisation, supplying raw material for many other industries. The first integrated iron and steel plant, Karabuk (Kardemir) was built in the Zonguldak region in 1937, and Ereğli, the second iron and steel complex, was built in 1961. The capacity of the third biggest integrated plant, Iskenderun (Isdemir) is 1.6 Mt/y. Over the past two decades, many private sector iron and steel plants have been constructed and the product range is now wide. It includes: long products including wire rod, bars, sections, wire and nail, flat products, pipes and pipe fittings, forged steel and cast articles.

### First Gold Mine

The new Ovacik gold mine is the first in Turkey to employ cyanide recovery methods, and eliminating the obstacles to cyanide use is seen as crucial if Turkey is to emerge as a significant gold producer. After long and drawn out environmental procedures, mining and processing finally began at Ovacik last year, with gold and silver recovery commencing in June. Turkey's Ministry of Environment has imposed a limit of less than 1 ppm for cyanide in tailings discharged to the tailings pond.

After some 15 years of exploration, Turkey is deemed to have great gold potential; about

ten projects are still awaiting environmental and bureaucratic procedures, and other potential investors are watching developments at Ovacik closely to see if any further obstacles are encountered.

### Gold Projects (as at December, 2001)

Region	Au (t)	Ag (t)	Production Value* (US\$ mill)
Ovacik, Izmir	24	24	240
Mastra, Gumushane	12	8	120
Cerattepe, Artvin	30.3	1,050	460
Kucukdere, Balikesir	7.5	17	75
Kaymaz, Eskişehir	6.2	3	60
Efeçukuru, Izmir	30	-	290
Kisladag, Usak	150	-	1,500
Total	260	1,106	2,750

\* Based on a gold price of US\$300/oz

### Chemical Products

The Turkish chemicals industry supplies raw materials and semi-finished products to a number of other industries and is seen as a key developing industry in the country. It is already long established and a major contributor to the economy, with annual production worth some US\$7 billion and exports worth US\$1.6 billion, equivalent to some 6% of total export revenues. Production by sector is as follows:

- Petrochemical: 2.7 Mt/y, with 98% capacity utilisation.
- Plastics and articles, mineral fuels, mineral oils and products, organic and inorganic chemicals: 1.2 Mt/y with 90% capacity utilisation.
- Soap and detergents: operating at about 74% of capacity with investment increasing.
- Pharmaceutical products: about 1 billion packages annually.
- Fertilisers: 4 Mt/y with about 65% capacity utilisation.

## Energy

Turkey's energy resources are quite diversified; hard coal, lignite, asphaltite, oil, natural gas, hydroelectric, geothermal, wood, animal and plant wastes, solar and secondary energy resources such as coke and briquettes, are all produced and consumed.

Primary energy demand, estimated at 90 Mt of oil equivalent in 2000, is forecast to reach 117 Mtoe in 2005 and 156 Mtoe in 2010. However, the share of domestic production to meet the demand is forecast to reduce from about 45% in 2001, to 42% in 2005 and 38% in 2010.

A law enacted in February 2001 provides for a restructuring of the electricity sector and for free market rules to apply. Decision-making is being transferred from the public to the private sector; competition is being increased in electricity generation and distribution; and there is to be greater transparency regarding rules and pricing, access to the transmission of new generating capacity and the role of the regulatory authority. The purpose of the law is to establish an electricity market which is financially strong, stable and transparent. The law provides an independent supervisory and regulatory board for the market and aims to ensure the adequate supply of electricity to consumers at a reasonable price and in a reliable and environmentally friendly manner. As a first step towards the new market model, the Turkish Electricity Corp. (TEAS) was separated into three distinct companies: generation, transmission and electricity trading.

## Coal

According to 2001 data, Turkey contributes 1.2-1.5% of world coal production. Lignite has the biggest share in total primary energy production, with 43%. Oil has a 13% share and natural gas has a share of 1%. In terms of primary energy consumption, oil has the biggest

### 2001 Metal/Mineral production ('000t) and reserves (Mt)

Metal/Mineral		Known Reserves	Potential Reserves	Production
Energy	Coal	1,120	2,000	3,100
	Lignite	4,600	25,000	49,560
Iron-Steel	Iron	85	916	5,500
	Manganese	5.5	22	30
Fertiliser	Phosphate	500	800	120
	Pyrite+S			1,000
Boron	Boron	730	1000	475
Chromite	Chromite	308	1,500	1,500
Magnesite	Magnesite	160	173	1,200
Non-ferrous Metals	Copper	6.8	15.8	30
	Lead	3.25	4.5	22
	Bauxite	4.5	5.5	450
	Others	62.7	371	
Precious metals and rare earths	Gold (t)	300	1,500	2.1
	Silver (t)	4,400	3,500	25.5
	Rare metals	4	8,800	
Industrial minerals	Others		4	
	Kaolin	100	120	700
	Clay	585	1,640	1,500
	Bentonite	350	248	100
	Feldspar	410	410	2,000
	Talc/pyrophyllite	20	20	
	Quartz, quartzite	5,150	5,150	100
	Pumice	1,750	1,750	2,000
	Perlite	5,800	5,800	150
	Barite	20	59	400
	Zeolite	26,000	26,000	
	Trona	235	235	
	Salt	400	800	
	Sodium sulphate	194	194	150
	Limestone	unlimited	unlimited	35,000
Marble	Dolomite	35,000	35,000	510
	Gypsum	1,000	1,000	250
	Marble (m <sup>3</sup> )	5,000	5,000	5,00

Source: MENR, Turkey. Modified by last data as at December, 2001.

share (44%) while natural gas has a share of 12%. Because of efforts to diversify, the use of natural gas has been growing rapidly.

### **Oil**

In 2001, TPAO, the state oil company, produced about 2 Mt of crude oil, which constituted 72% of Turkey's total crude production. Annual oil consumption is around 28.3 Mt and there is a heavy reliance on imports. By the year 2010, it is forecast that oil consumption will have increased to 41.8 Mtoe and that only 1% will be met from indigenous supplies.

### **Natural Gas**

In the natural gas sector, a law was enacted in May 2001 that aims to liberalise the sector in

line with EU standards, with the privatisation of state-owned natural gas distribution companies. Natural gas consumption (currently 6.8 billion m<sup>3</sup>/y) is assumed to increase by 11% to reach 31 billion m<sup>3</sup> by 2010, equivalent to an 18% share of total primary energy consumption. In 2001, TPAO's cumulative natural gas production was about 620 million m<sup>3</sup>, and is expected to remain at about the same level in future years, implying a large increase in imports. The Turkey-Iran natural gas pipeline was opened in January 2002 and will provide Turkey with about 10 billion m<sup>3</sup>/y.

### **Acknowledgements**

The author would like to thank the General Secretariat of the Istanbul Mineral and Metals Exporters' Association (IMMIB), and State Planning Organisation for statistical data (2000-2001). Thanks also to Dr. M. Dulupcu for his kind contributions. In the article, some data are taken from the 8th Five-Year Development Plan for 2001-2005 (June, 2000), Pre-Accession Economic Programme, State Planning Organisation (October, 2001), State Institute of Statistics (SIS) (March, 2002) and Ministry of Energy and Natural Resources (MENR) (March, 2002).