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LIGNITE DEPOSITS OF THE WESTERN TURKIYE

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ABSTRACT

Lignite deposits of the Western Türkiye, which are generally Miocene in age, are very widespread in the region. These deposits have very high reserve capacities with limnic characteristics. These lignite bearing formations come unconformably over the basement rocks of the Paleozoic and Mesozoic. Lignite seams are underlain by the arenaceous rocks of conglomerates, sandstones, sands and silts, and are overlain by the cyclic sedimens of marls, limestones, tuffites and also alluvium. Although there is a big variation in the lignitic qualities of the region, the Miocene aged lignites are generally good in quality. Lignite seams are very few, usually one or two and rarely three in number, and their thicknesses vary between 5-10 metres. Tectonism is very effective in some of these deposits from place to place. Although the majority of these deposits are worked as open-pit mines, there are also underground mines in the region.

The lignite potential of Türkiye has not been evaluated fully yet, but the existance of 226 lignite deposits has been known with the total reserve approaching to 8,200 Million tons. However, 84 % of this reserve (6,803 Million tons) is concentrated within 70 important deposits. Lignite deposits are present all over Türkiye. The distribution of lignite deposits in the country is such that the Eocene lignites which are economically not important, are in the north; the Oligocene lignites are in the northwest; the Miocene lignites are in the west and the Pliocene-Pleistocene lignites are in the east. Most of these lignites have high water and ash contents, and low calorific values.

The most important lignite deposits are situated in the regions of Manisa, Mugla, Kütahya, Bursa, Çanakkale, Balikesir and Aydın in the Western Türkiye. The total reserve is around 2,551 Million tons by considering only the deposits having more than 10 Million tons reserves, otherwise the total reserve is 2,673. The lignite reserves of the Western Türkiye, make up 33 % of the total Turkish reserves. While the poor quality lignites are used in the thermic

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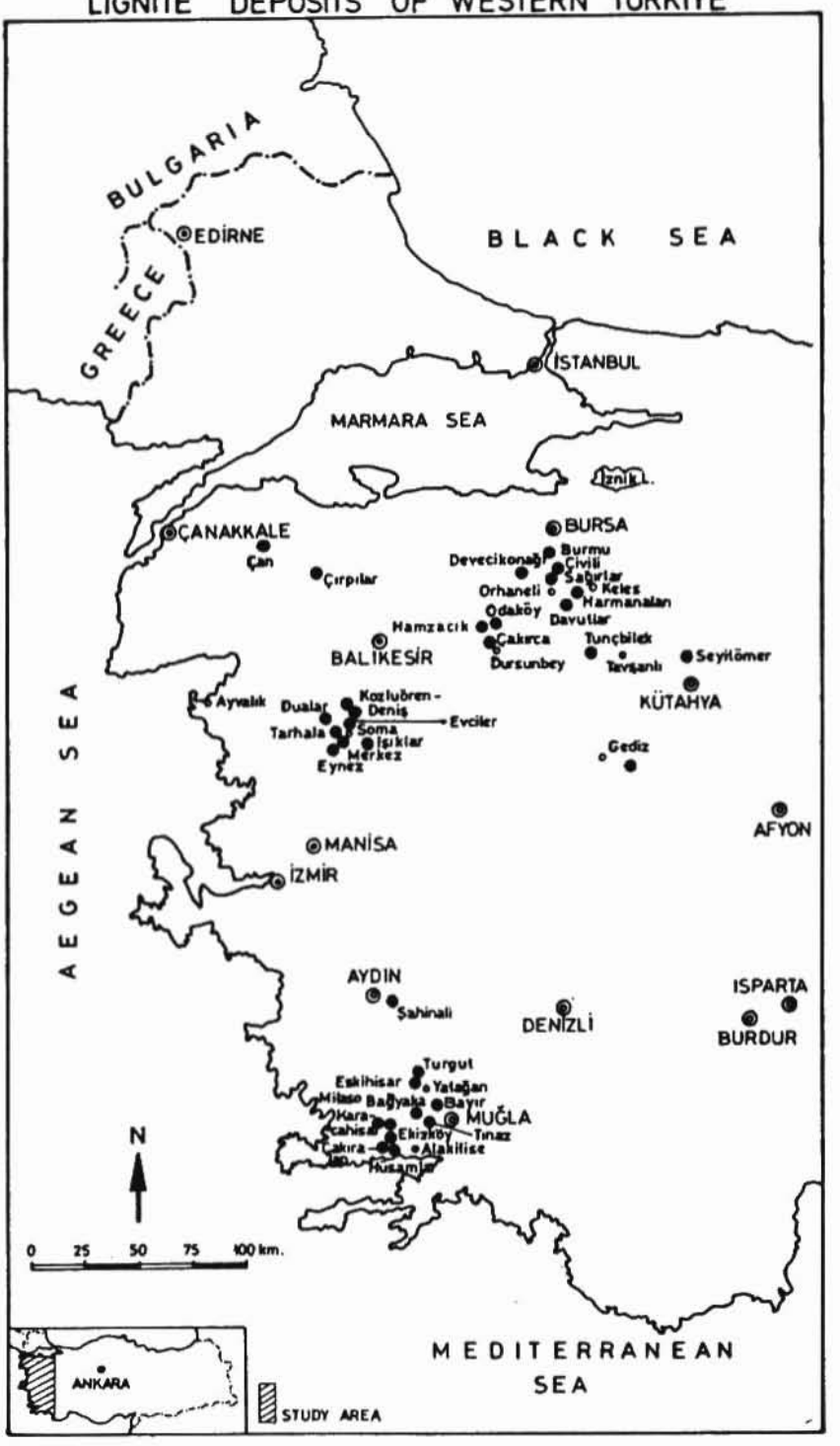

FIGURE CAPTIONS

Figure 1. Lignite Deposits of Western Türkiye.

power plants in the Western Türkiye, the higher quality ones are used domestically and by the industry.

INTRODUCTION

Stratigraphies reserves, qualities and mining operations methods are going to mentioned here for the lignite deposits having reserves more than 10 Million tons in the Western Türkiye (Figure 1), and the national economical evaluations of these deposits will be made in general. These coal deposits have been explored and evaluated by the General Directorate of Mineral Research and Exploration, and they are exploited using various mining methods by the Turkish Coal Enterprises. Coal explorations have been continued with geological mapping, reserve and operation drillings in the region for many fields. Low reserve deposits are generally mined by the private enterprise in the region.

MANISA REGION DEPOSITS

Soma Deposit

This deposit is in the district of Soma which is at the north Manisa county in the Western Türkiye. The Sectors of this deposit are; Denis-Kozluören, Akçaavlu-Dualar-Kadınköy, Evciler, Çinge, Ğahin (Karadeniz), Soma (Madencilik), Merkezocak (Kısrakdere, Elmalı, Sarıkaya), Isıklar and Eynez. Stratigraphically these deposits in the Soma Lignite region show similar characterics. The basement is made up of the Paleozoic metamorphic schists and greywackes, and the Mesozoic crystallized limestones. Lignite bearing Miocene sediments which are made up the units of gravelstones-sandstones-clay, marl and limestones, lay unconformably over the basement. There are two coal horizons as the main seam at the base of marl and the middle seam in the middle-top parts of limestone. The Pliocene sediments laying unconformably over the Miocene, are made up of coloured clay-sandstone, tuff-marl-agglomerate, gravelstone varved clay and silicified limestone-tuffite. The upper coal seam horizon is present at the various levels of the coloured clay-sandstone units. The Pliostocene units in the region come unconformably over the older units. These are divided into two units as the clay-sand-gravel-tuff-tuffite-limestone and the volcanics at the top. Unconformably placed the Holocene units are made up of terrace, alluvium and slump mollasse. The andesites and basalts cover very large areas in the south and north of the Soma Region.

There are three coal seams where their stratigraphic positions are given above, in the Soma region. Coal thicknesses vary from deposit to deposit. The bottom main seam, the Miocene in age, makes up the major part of mineable deposits in the region, and except the Denis sector, it is the only seam for the mined coal deposits. The coal geology properties are given below for the Soma coal region.

Denis-Kozluören Sector

It is situated 20 km northeast of Soma. Three coal seams are present in this sector.The average thickness of bottom, middle and top seams are 14, 6 and 22 m respectively. The chemical properties in the original coal are given below for the three seams;

		Bottom Seam	Middle Seam	Top Seam
Water	(%)	17	20	25
Ash	(%)	34	30	44
Total Sulphur	(%)	2	3	3
Calorific Value	(KCal/Kg)	2600	2200	1500

The total proved reserves of these three seams is 182,192,000 tons and they are worked with open-pit mining.

Akçaavlu-Dualar-Kadınköy Sector

It is situated 15 km northwest of Soma. Only the top seam has been observed in this sector. The thickness of this seam is 3.50 m. The percentages of water, ash, total sulphur and Calorific value in the original coal, are 27 %, 41 %, 3 % and 1800 KCal/Kg respectively. Here the probable coal reserve is 9,345,577 tons. The coal can be worked with the method of underground mining.

Evciler Sector

It is in the northeast of Soma. There are three coal seams. The average thickness of bottom, middle and top seams are 4.50, 5.50 and 2.15 m respectively.The chemical properties in the original coal are given below:

		Bottom Seam	Middle Seam	Top Seam
Water	(%)	24	23	29
Ash	(%)	35	41	43
Total Sulphur	(%)	4	1	2
Calorific Value	(KCal/Kg)	2500	1800	2000

The proven and mineble reserves in the sector have been determined as 46,461,100 tons and 34,846,000 tons respectively. It is not mined presently, but it can be worked with the underground mining.

Çinge Sector

It is in the southwest of Soma. Only the top seam is present. Its thickness is 3.5 m. The percentages of water, ash, total sulphur and Calorific value in the original coal, are 29 %, 39 %, 2 % and 1350 KCal/Kg respectively Proven+probable lignite reserve is 33,000,000 tons. It is not mined presently, but it can be worked with the underground mining.

Sahin (Karadeniz) Sector

It is in the south of Soma where the part of the reserve is under the city. There is only the bottom seam of having the average thickness of 11.50 m. The percentages of water, ash and total sulphur in the original coal, are 19 %, 20 %, 1 % and respectively with the Calorific value varying in between 3200 to 5050 KCal/Kg. The proven reserve has been determined as 24,000,000 tons, but only 10,000,000 tons of this reserve can be worked outside with the city limits. Coal can be worked with the underground mining.

Soma (Madencilik) Sector

It is in the southwest of Soma and only the bottom seam worked. The average thickness of coal is 10 m. The percentages of water, ash and total sulphur in the original coal, are 19 %, 25 % and 1 % respectively with the Calorific value varying in between 3200 to 4800 KCal/Kg. The total proven reserve has been determined to be 10,000,000 tons. It is worked with the underground mining.

Tarhala (Darkale) Sector

It is in the south of Soma and worked for only the bottom seam which varies in between 13 to 16 m. The percentages of water, ash and total sulphur in the original coal, are 19 %, 28 % and 1 % respectively with the Calorific value varying in between 3200 to 5050 KCal/Kg. There are 38,342,000 tons and 21,257,000 tons of proved and possible reserves respectively. The underground mining is present.

Merkez Ocak Sector

It is in the south of Soma .Although there are three seams in the deposit but only the bottom and middle seams are worked. The thickness of bottom and middle seams are 17 m and 3 m respectively. The percentages of water, ash and total sulphur in the original coal of bottom seam, are 10 %, 14 % and 1 % respectively with the Calorific value varying in between 3500 to 5000 KCal/Kg. The percentages of water, ash and total sulphur in the original coal of the middle seam, are 18 %, 21 % and 1 % respectively with the Calorific value varying in between 3000 to 3500 KCal/Kg. The proven reserves of open-pit and underground mining are 2,484,000 tons respectively.

Isıklar Sector

It is the south of Soma. Altough there are three seams in the deposit, only the bottom seam is worked. The average thickness of this seam is 15 m. The percentages of water, ash and sulphur in the original coal, are 13 %, 29 % and 1 % respectively with the Calorific value varying in between 3200 to 4400 KCal/Kg. Workable proved reserves for underground and open-pit minings have been determined to be 31,200,000 tons and 40,470,000 tons respectively. It has already been operated as the open-pit and underground working is under progress.

Eynez Sector

It is in the southwest of Soma. Here all three seams are workable. The thicknesses of the bottom, middle and top seams are 18, 4 and 4 m respectively. The chemical properties in the orginal coal are given below for the three seams:

		Bottom Seam	Middle Seam	Top Seam
Water	(%)	10	14	19
Ash	(%)	15	19	23
Total sulphur	(%)	1	1	1
Calorific value	(KCal/Kg)	4000-5500	3200-4000	2500-3500

There are proven, probable and possible reserves of 396,511,890 tons in this deposit of which can be worked as the underground and open-pit minings of 387,263,890 tons and 9,248,000 tons respectively. This reserve has already been worked by both methods.

MUGLA REGION DEPOSITS

The lignitic Neogene sediments cover large areas in around the districts of Yatagan and Milas situated in the county of Mugla at the southwestern Türkiye. These deposits are Turgut, Eskihisar, Bayir, Bagyaka, Tinaz, Karacahisar, Sekköy, Ekizköy, Çakıralan, Hüsamlar and Alakilise. Stratigraphically these 11 deposits are very similar and can be summarized as below:

The Alakilise formation lies unconformably on the substrata of the Paleozoic gneisses and schists with the Mesozoic marbles. This formation which contains occasionally 1.50-2.00 m thick lignite seams, where the highest percentage of them are not economically viable, are not observed in all of the regions.

The Turgut formation, which is made up of conglomerates, clays, silts, sands and gravels, succeeds the Alakilise formation. A lignite seam of 20 m in thickness is placed in between the Turgut formation at the bottom and the Sekköy formation is succeeded by the Yatagan formation consisting of gravels, clays, sands, tuffs, marls and limestones, and by the Millet limestones which are not observed in all of regions, and alluvions.

Turgut Sector

It is in the northwest of Yatagan. There is only one seam of 6 m thick. The percentages of water, ash and total sulphur in the original coal are 36 %, 32 % and 2 % respectively having the Calorific value of 2600 KCal/Kg. There is a total reserves of 130,000,000 tons of as the proven and probable reserves of 70,000,000 tons and 60,000,000 tons respectively. It could be worked only with underground mining and not yet operational.

Eskihisar Sector

It is in the northwest of Yatagan. There is only one seam of 10 m thick in this deposit. The percentages of water, ash and total sulphur in the original coal are 36 %, 32 % and 2 % respectively having the Calorific value of 2100 KCal/Kg. There are the proven reserves of 109,000,000 tons and 10,616,000 tons suitable for open-pit and underground mining purposes respectively. There is open-pit mining operation in the area.

Bayır Sector

It is in the south of Yatagan having a single seam of 7 m thick. The percentages of water, ash and total sulphur in the original coal are 26 %, 24 % and 3 % respectively having the Calorific value of 2700 KCal/Kg. The proven reserve of the Bayır sector is 109,063,000 tons coal can be worked with underground mining. There is no production at the moment.

Bagyaka Sector

It is in the northwest of Yatagan.There is only one seam having the average thickness of 14 m The percentages of water, ash and total sulphur in the original coal are 38 %, 26 % and 1 % having the Calorific value of 1800 KCal/Kg. The proven and workable reserves are 15,221,000 tons and 13,064,000 tons respectively in the Bagkaya Sector.

Tınaz Sector

It is in the southwest of Yatagan. There is only one seam having the average thickness of 9 m. The percentages of water, ash and total sulphur in the original coal are 33 %, 27 % and 2 % respectively having the Calorific value of 2100 KCal/Kg. Proven and workable reserves are 48,998,000 tons and 35,994,000 tons respectively. Presently it is being worked with open-pit mining.

Karacahisar Sektör

It is in the southwest of Milas. There is only one seam having the average thickness of 8 m. The percentages of water, ash and total sulphur in the original coal are 28 %, 28 % and 4 % having the Calorific value of 2200 KCal/Kg. The proven and workable reserves are 85,770,000 tons and 49,176,000 tons respectively in the Karacahisar Sector. There is no production at the moment.

Ekizköy Sector

It is in the souhtwest of Milas having only seam with the average thickness of 7 m. The percentages of water, ash and total sulphur in the orginal coal are 31 %, 25 % and 3 % respectively for the open-pit working area having the Calorific value of 2208 KCal/Kg, whereas these values are 27 %, 29 % and 2200 KCal/Kg respectively without the total sulphur value for the proposed underground mining area. Total proven reserve is 105,030,400 tons which could be worked with open-pit and underground mining. .

Sekköy Sector

It is in the southeast of Milas. There is only one seam with the average thickness of 17 m. The percentages of water,ash and total sulphur in the original coal are 34 %, 26 % and 3 % respectively for the open-pit working area having the Calorific value of 1800 KCal/Kg, whereas these values are 26 %, 31 %, 4 % and 1850 KCal/Kg for the underground mining area. The proven reserves are 89,467,000 tons and 1,103,000 tons suitable for the open-pit and underground mining purposes respectively in the Sekköy sector. Presently it is worked with open-pit mining.

Çakıralan Sector

It is the southeast of Milas. There is only one coal seam having the average thickness of 13 m. The percentages of water and ash in the original coal are 30 % and 32 % respectively having the Calorific value of 1870 KCal/Kg. The proven+probable reserve is 17,913,694 tons for the open-pit mining in the Çakıralan sector.

Hüsamlar Sector

It is the southeast of Milas having only one coal seam with the average thikcness of 17 m. The percantages of water, ash and total sulphur in the original coal are 32 %, 28 % and 3 % respectively having the Calorific value of 1980 KCal/Kg. The proven reserve is 104,376,000 tons in this sector which is totally suitable for open-pit mining.

Alakilise Sector

It is in the southeast of Milas having two seams with the average thickness of 2 m and 1.10 m respectively. The percentages of average water, ash and total sulphur in the original coal are 33 %, 15 % and 4 % respectively having the Calorific value of 3000 KCal/Kg. The proven reserves are 11,090,120 tons and 1,699,875 tons suitable for the underground and open-pit mining purpose making the total of 12,789,995 tons.

KÜTAHYA REGION DEPOSITS

Tunçbilek Deposit

The Tunçbilek coal region covers large areas in the west and north of Tavsanlı district belonging to the Kütahya county. The Domaniç region which has coal too, is placed north of this region. The oldest formations in the Tunçbilek coal region are the Paleozoic metamorphic schists and crystallized limestones with disconcordantly underlaying the Cretaceous ultrabasic rocks. All these make the basement for the Neogene units overlaying unconformably which are represented by the Miocene (Tunçbilek series) and the Pliocene (Domaniç series). The Tunçbilek series starts with the compact clastic formations and continues with the clay-marl sequence. The Tunçbilek coal seam is placed in the lower parts of clay-marl sequence. Fresh water limestone terrace and silicic limestone layers are present at the higher levels.
The Domaniç series starts with clastic basement formations andgradually passes over to agglomerates and tuffites. The fresh water limestones divide this series which is 300 m thick, into two parts. Volcanic rocks are only of andesites. Tuffs, tuffites and agglomerates proceed and it ends with the basaltic lavas. The Quaternary is made up of mollasses. The Miocene coal is only one seam. The seam thickness varies in between 4 to 6 m and it is interupted by the variable thick layers and lenses. The percentages of water, ash and total sulphur in the original coal are 15 %, 10 % and 1.5 % respectively having the Calorific value of 4000 KCal/Kg. The proved and probable reserves are 280,669,000 tons and 46,882,000 tons respectively making the total of 327,551,000 tons in the region. It is worked both by open-pit and underground mining operations.

Seyitömer Deposit

It is around Seyitömer city which is west of Kütahya county. The basement of the Seyitömer region is generally made up of serpantinized ultrabasic rocks (gabbro, amphibolite, diorite, etc.), radiolarites and crystallized limestones. The Neogene which comes disconformably over the basement, starts with the basal conglomerates made up of big gravelly conglomerates and sandstones

and the main seam (bottom seam) comes after the blue green coloured basal clays. The main seam is covered by the diatomic clays and marls with bitumonous marls. The top seam layers come over them. This series starts with marls generally containing clays and sands and continues with diatomic clays, marls and blue coloured fine sands. The top seam is within this series. The youngest units are alluviums in the region. The average thickness of the top seam is 10 m. The bottom seam is 25 m below the top seam, and has the thickness of 16 m. There are dark coloured bituminous schists within cover layers of the bottom seam. The percantages of water, ash and total sulphur in the original coal are 34 %, 19 % and 1 % respectively having the Calorific value of 2750 KCal/Kg. The proved reserved has been obtained to be 205,128,000 tons in the Seyitömer region. It has been worked with open-pit mining.

Gediz Deposit

There is a Miocene coal deposit in between the villages of Sazköy and Gökler near Gediz city at the southwest of Kütahya county. Here the basement is made up of the Palezoic gneisses and schists with the Mesozoic serpantinized radiolarites and limestones. Conglomerates, sands and clays are present at the base of the coal whereas the marls make the cover layers over which comes the horizons of the middle conglomeratic sandstone, the middle marls-tuffs, the mollases, the upper gravels and the upper tuffs. There are two seams of the top and the bottom having the thicknesses of 1.50 m and 1.00 m respectively. The percentages of water, ash total sulphur in the original coal are 4 %, 26 % and 7 % respectively having the Calorific value of 5200 KCal/Kg. The proven, probable and possible reserves are 145,000,000 tons, 12,300,000 tons and 11,500,000 tons respectively making the total of 23,945,000 tons in the region. It has been worked with the underground mining.

ÇANAKKALE REGION DEPOSISTS

Çan Deposit

It is in around Çan within the county of Çanakkale. The basement is made up of the Paleozoic phyllites, the Mesozoic arkoses, limestones, spilite and diapsidic diabases. The Miocene is represented by the lignitic clays and tuffite layers reaching up to 400 m thickness over the basement made up of the andesitic tuffs and agglomerates. The Pliocene is made up of only the agglomerates having about 300 m thickness. The Plio-Pleiostecene is made up of young andesite filons. The Quaternary is in the form of terrace mollasses and alluvium. The coal is only one seam having the average thickness of 16 m. The percentages of water, ash and total sulphur in the original coal are 18 %, 28 % and 4 % having the Calorific value of 2900 KCal/Kg. The proven reserves which can be exploited with the open-pit and the underground minings, are 88,878,000 tons and 3,875,000 tons making the total of 92,753,000 tons, whereas the workable reserve is 82,345,000 tons. The deposit has been work with both the open-pit and underground mining methods.

Çırpılar Deposit

It is in the east of Çanakkale. The basement is made of the Cretaceous phyllites and granodiorites and the andesites form the

base for the lignitic series. The basal conglomerates, lignitic series and layered fine grained tuffites come over the above mentioned sequences. Gravels, andesites and limestones are the youngests units. The coal thickness varies in between 3 to 19 m. It is as only one seam. The percentages of water, ash and total sulphur in the original coal are 24 %, 52 % and 2 % having the Calorific value of 1330 KCal/Kg. The proven reserve is 39,200,000 tons. It could be worked with the underground mining method.

BURSA REGION DEPOSITS

Orhaneli Deposit

The sectors of Burmu, Çivili and Sagırlar show similar stratigraphic sequences at the northwest of Orhaneli in the county of Bursa. The pre-Neogene rocks are made up of schist, marbles and ophiolites. The Neogene formations are the detritic rocks of basal conglomerates, coally marl and tuffites at the bottom, and the volcanic rocks of tuffs and lava flows at the top. The post-Neogene sediments are the Pliostecene gravels and the alluviums of valley fillings. The coal is hard and different in quality and it is Miocene in age. It is also as one seam.

Burmu Sector

The coal that could be worked as the open-pit mining method, has the thickness of 7.45 m. The percentages of water and ash in the original coal are 27 % and 29 % having the Calorific value of 2450 KCal/Kg. The proved reserve is 30,776,000 tons. The part that could be worked as the underground mining method, has the thickness of 5 m. The percentages of water and ash in the original coal are 29 % and 22 % having the Calorific value of 2710 KCal/Kg. The proven and workable reserves are 5,025,000 tons and 3,770,000 tons respectively.

Çivili Sector

The coal that could be worked as the underground mining method, has the thickness of 3 m. The percentages of water and ash in the original coal are 21 % and 41 % respectively having the Calorific value of 2200 KCal/Kg. The proven reserve is 8,622,000 tons. The coal that could be worked as the open-pit mining method, has the percentages of water, ash and total sulphur as 24 %, 42 % and 2 % respectively with the Calorific value of 2170 KCal/Kg. The proved and workable reserves are 2,184,000 tons and 950,000 tons recpectively.

Sagırlar Sector

The average coal thickness is 3 m in this sector. The percentages of water, ash and total sulphur in the original coal are 27 %, 18 % and 2 % respectively having the Calorific value of 3300 KCal/Kg. The proven and workable reserves are 7,234,000 tons and 5,400,000 tons respectively. The coal will be worked with the underground mining method.

Mustafa Kemal Pasa Devecikonagı Deposit

The geological sequence in the Devecikonagı coal deposit at the

southeast of Bursa, starts with the Neogene conglomerate series overlaying the basement of the Paleozoic basement of greywackes and schists. It continues with the series comprised of marls, clays, and calcareous marls. There is a conglomeratic sequence with limestone and marble gravels. The Neogene sequence is terminated by the sediments of lavas, aglomerates and tuffs. There are two seams in the region. The top seam is not economical. The bottom seam has the thickness of 4.50 m. The percentages of water, ash and total sulphur in the original coal are 14 %, 27 % and 4 % respectively having the Calorific value of 3800 KCal/Kg. The probable and possible reserves are 7,609,000 tons and 7,806,000 tons respectively making the total of 15,415,000 tons. The coal has been worked with the underground mining method.

Keles Deposit

The Keles coal formation can be considered in two sectors as Harmanalan and Davutlar.

Harmanalan Sector

This sector which is situated south of the county of Bursa, shows great similarities with the Tunçbilek region stratigraphically. The coal is Pliocene in age as a single seam which has the thickness of 20 m. The percentages of water, ash and total sulphur in the original coal are 36 %, 30 % and 1.5 % respectively having the Calorific value of 1900 KCal/Kg. The proved and workable reserves are 42,870,000 tons and 34,226,000 tons respectively. The coal can be worked both by the methods of open-pit and underground mining.

Davudlar Sector

There are three coal seams in this sector showing the similar stratigraphy as the Harmanalan sector. The thicknesses of bottom, middle and top seams are 2 m, 5 m and 6 m respectively. The percentages of water ash and total sulphur in the original coal of the underground mining area, are 24 %, 37 % and 4 % respectively having the Calorific value of 2130 KCal/Kg. The probable and workable reserves of the underground mining operation are 2,485,399 tons and 1,485,820 tons respectively. The percentages of water, ash and total sulphur in the original coal of the open-pit mining area, are 30 %, 34 % and 4 % respectively having the Calorific value of 2420 KCal/Kg. The proven and workable reserves of the open-pit mining operation are 26,254,215 tons and 18,251,154 tons respectively. The total proven and workable reserves are 26,254,215 tons and 18,251,154 tons respectively. The coal can be worked both by open-pit and underground mining methods.

BALIKESIR REGION DEPOSITS

Dursunbey Deposit

This coal deposit is at the southeast of Balikesir. Stratigraphically, the basement is made up of basalts, gabbros and crystallized limestones. The Neogene is represented by the horizons of marls and tuffs containing coal layers after the basal horizon made up of conglomerates, sands, sandstones and clays. There are three sectors of Odaköy, Hamzacık and Çakırca here.

Odaköy Sector

The average thickness of the seam is 6 m in this sector. The percentages of water, ash and total sulphur in the original coal of the open-pit mining area having the proven reserve of 3,594,000 tons, are 21 %, 28 % and 0.50 % respectively having the Calorific value of 3325 KCal/Kg. The percentages of water, ash and total sulphur in the original coal of the underground mining area having the proven reserve of 10,501,000 tons, are 20 %, 36 % and 0.50 % respectively having the Calorific value of 2724 KCal/Kg.

Hamzacık Sector

The coal seam thickness is 6 m in this sector. The percentages of water, ash and total sulphur in the originals coal are 12 %, 45 % and 3 % respectively having the Calorific value of 2630 KCal/Kg. The proven reserve can be worked 5,255,000 tons with the underground mining method.

Çakırca Sector

The coal seam thickness is 3 m in this sector. The percentages of water ash and sulphur in the original coal are 20 %, 39 % and 1 % respectively having the calorific value of 2400 KCal/Kg. The proven reserve which can be worked with the underground mining method is 5,255,000 tons.

AYDIN REGION DEPOSITS

Sahinali Deposit

This coal area is situated at the southeast of the county of Aydın. The basement is made up of the gneisses and schists of the Menderes masif. The basal conglomerates which are overlain by the lignitic clay-marl units, come over the basement unconformably. The Pliocene gravel and sands are placed uncomformably over the lignite bearing Miocene units. The lignite seam thickness is 10 m. The percentages of water, ash and total sulphur in the original coal are 20 %, 27 % and 1 % respectively having the Calorific value of 3120 KCal/Kg. The total proven and workable total reserves are 14,192,000 tons and 8,510,000 tons respectively in the area. The production has been made with the open-pit and underground mining methods.

RESULT

The present proven total reserve of the various lignite deposits are 2,672,799,482 tons in the counties of Manisa, Mugla, Kütahya, Bursa, Çanakkale, Balıkesir, Aydın, Denizli, Burdur, Isparta, Afyon and Izmir, in western Türkiye. The total potential reaches up to 2,551,051,482 tons from the deposits having the reserves greater than or equal to 10,000,000 tons. The distribution of this reserve is given below according to the districts:

Soma	862,724,467 tons
Mugla	812,529,800 tons
Kütahya	556,624,000 tons
Bursa	138,380,215 tons
Çanakkale	131,953,000 tons
Balıkesir	34,648,000 tons

Aydın 14,192,000 tons

TOTAL 2,551,051,482 tons

These generally Miocene lignite deposits have a great potential making up to 33 % of the total Turkish lignite reserves of exceeding 8,200 million tons. The other important thing is that the most of these reserves can be worked with open-pit mining.
Presently exploited lignites are being used in the industry, domestic heating and in the thermic power plants as fuel. The fuel needs of the thermic power plants of Tunçbilek and Seyitömer (Kütahya), Yatagan and Yeniköy (Mugla) are supplied from local lignite deposits. Also the fuel needs of the thermic power plants of Orhaneli (Bursa) and Kemerköy (Mugla) will also be from the local lignite deposits.

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