

Soma Coal Mine Disaster Information Report

This report is an examination and assessment on the possible reasons of the Soma coal mine disaster on 13 May, 2014 as well as Turkey's policies on both coal and mining, respectively.

Main topics in the analysis:

- Turkey's Coal Policy
- Privatization Through Royalty
- Mining Area Operations and Work Conditions
- Mining Accidents in Turkey
- Recent Legal Developments regarding the Government's Coal Subsidies and Mining Activities
- Lack of Inspections at Mines
- Who operates the Coal Mine at Soma?
- How did the Prices Drop at Soma?
- Coal Mining Activities in Turkey and Around the World
- Solution
- Greenpeace's Demands

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Turkey's Coal Policy

At the end of 2013, coal accounted for 19.4% of total power generation and 25.4% of electric power production in Turkey (1). In 2012, 60 TWH of electricity produced was based on coal power. By 2030, this amount is planned to rise to 197 TWH accounting for 32% of total electricity production. Currently, there are 22 active coal thermal power plants with more than 80 coal power plant awaiting authorization or still in planning. The Minister of Energy's 2023 the highest priority in electricity production goals are to use the entire lignite and hard coal reserves for energy production and import coal with high heating value.

While all world states are adopting a transition from coal to renewables within the framework of climate protection, Turkey's Ministry of Energy and Natural Resources is instead promoting policies to extend coal. By this conjecture, 2012 was declared the year of coal by the Ministry of Energy and Natural Resources. Between local coal mining, royalty tenders to produce electricity, and by many similar promotions, the coal industry became very profitable and was supported for unregulated growth.

Many of the government-owned coal plants were hazardous to people and the environment due to operating without proper filter systems; even after privatization in 2013 coal companies were held exempted from environmental responsibilities¹.

What does Royalty (Rödovans) mean?

The transfer of the management of the coal mines for a certain period of time in which the property owner is paid an amount based on the tonnage of coal produced or the KW/hour of electricity produced through the production of coal.

This method:

- Is used by Turkish Coal Enterprise (TKİ) and Electricity Generation Company (EÜAŞ) to privatize coal fields under the condition of constructing a coal power plant and using the mined coal in electricity production.

¹ With the 8th temporary article of the No.6446 Electricity Market Law that went into effect in 2013, privatized power plants are exempted from environmental responsibilities until 2018. This date can be extended to 2021 by the authority of the Council of Ministries. Greenpeace Mediterranean took this regulation to Constitutional Court with the Republican People's Party (CHP) acting on their behalf on 2013 July.

- The company, which offers the highest royalty price per Kw/Hour at the tender, will win the right to rent the coal field.
- Payments start at the 7th year of the royalty agreement, meaning there will be a 6-year investment period.
- If electricity production begins before 6 years, only %50 of the royalty is paid.
- The agreement with the company that wins the TKİ tender is for 30 years.

Some of lignite/hardcoal fields owned by TKİ–EÜAŞ–TTK (Turkish Hard-coal Authority) that are already privatized or are awaiting privatization through by the royalty method

- 1- Silopi / Harbul Field (Asphaltite Field)
- 2- Silopi / Üçkardeşler Field
- 3- Şırnak Asphaltite Field – Silopi Thermal Plant (Silopi Electric- Ciner Holding)
- 4- Bolu / Göynük Field - Bolu Göynük Thermal Plant (Aksa Göynük Energy- Aksa Holding)
- 5- Eskişehir Mihaliçcik Field - Yunus Emre Thermal Plant (Adalurya Energy - Naksan Holding)
- 6- Tekirdağ / Saray Field
- 7- Sivas / Kangal – Kangal Thermal Plant (Konya Şeker) Adana
- 8- Tufanbeyli Field
- 9- Bursa, Keleş Field – Çelikler Yatırım Holding
- 10-Kütahya / Domaniç Field – Çelikler Yatırım Holding
- 11-Kütahya / Seyitömer – Seyitömer Thermal Plant
- 12-Amasra B Hard Coal Plant – (Hema A.Ş. - Hattat Holding)
- 13-Muğla / Yeniköy Field
- 14-Bingöl / Karlıova – Karlıova Thermal Plant (Aksa Energy – Aksa Grup)
- 15-Manisa/ Soma – Soma Kolin Thermal Power Plant (Hidro-gen – Kolin Construction)

- 16- Muğla / Karacahisar Field
- 17- Muğla / Kemerköy Field
- 18- Muğla / Yatağan-Turgut, Milas-Ören Fields
- 19-Çanakkale / Çan Field
- 20-Afşin / Elbistan C-D-E-G Fields
- 21-Konya / Karapınar Fields
- 22-Eskişehir / Alpu Field
- 23-Afyon / Dinar Field

Bingöl, Tufanbeyli, Bursa, Tunçbilek were tendered by royalty for a total of 1320 MW worth of power plants. The plants that amount to a total of 1370 MW are under construction or being operated in Bolu, Eskişehir and Şırnak. Furthermore, it was announced that the fields in Afşin, Elbistan, Konya - Karapınar, Eskişehir – Alpu, Adana – Tufanbeyli and Afyon – Dinar possess a total of 11.5 billion tons of coal and have the potential to construct plants that amount to 17,000 – 18,000 MW.

The Mining Site Operations and Work Conditions

The Operator prepares the “Executive Project” and the “Energy Coal Generating Program” within a period of 6 months and submits them for TKI’s approval. The electrical energy to be used for the mining site is provided by the operator. At the end of every year, TKI monitors the operator by acceptance and evaluation inspections.

Mining Accidents in Turkey

- **1308** - Number of accidents resulting in death since the year 2000
- **263** - Number of miners that died in the 1992 Zonguldak mine gas explosion.
- **13,000** - Number of mining accidents in 2013
- **10.4%** - Mining’s percentage in 2013’s workplace accident total (2)

Turkey takes first place in mining accidents

The numbers released by International Labour Organization (ILO) shows that Turkey ranking 3rd in the mining accidents until 2008 has surpassed China in the last 3 years and become the country with the highest rank of mining accidents. The results of the Research on Accidents at Work conducted by the Turkish Statistical Institute in

2013 indicates that mining is the sector with the highest rates of work-related accidents. A total of 14 severe mining accidents have occurred in the last 31 years in Turkey. The accident with the highest death rate occurred in Kozlu, Zonguldak in 1992 and was caused by a mine gas explosion (coal gas entrapment) and resulted in death of 263 labourers. A total of 597 labourers deceased during the last 14 mining accidents, except for the recent mining disaster in Soma, which resulted in the deaths of 282 people so far. The disaster has become the most severe accident involving death in Turkey.

Recent Legal Developments regarding the Government's Coal Subsidies and Mining Activities

In accordance with the amendments in mining regulations and the Council of Ministries' decisions to extend coal operations, mining activities were accelerated to promote coal in power generation plants, and royalty contracts have been prioritized.

The Decision of The Council of Ministries on the State's Subsidies for Investments Dated 15 February 2013 commands³;

“In accordance with a valid licence and permit for mining, as No. 3213 The Mining Law specified by Ministry of Energy and Natural Resources commands that the power generation investments for which 4-b² mines are used as input are included into the scope of subsidy.”

In accordance with the Regulation for Amendments in the Regulation for Mining Activities published in Official Gazette under date of January 7th 2014, mining activities including agricultural lands have been accelerated in pursuance of the decision in public interest. (4) It can be said that legal regulations for mining activities are parallel to government promotions enlarged for royalty contracts.

As the regulation aforementioned commands;

“Under the 13th article of The Law No. 5403 The Protection of Soil and The Use of Land, It is required that the decision of public interest be taken by Ministry of Energy and Natural Resources in order to carry out mining activities in agricultural lands. According to the law, the owner of the license should make necessary applications so that a public interest decision is taken.”

² The mines are specified to be included into 4-b groups by Mining Law: Peat, Leopardite, Brown Coal, Hard coal, Coal-based coal gas in the licensed areas which have the permit for mining operation. Stone coal, Asphaltite, Oil shale, Bituminous shale, Coccoolith-Sapropel.

Mine and oil prospecting activities in national parks have also been authorized with legal amendments and regulations concerning mining activities.

According to the data provided by the General Directorate of Forestry, during a span of four years between 2003-2006 the number of mining licenses issued for forest lands increased from a yearly average number of 1218 to 2089 in 2007 and the number of mining licenses issued increased from 576 to 2211. In the same period of time, authorized mining operation areas increased from 3637 hectares to 11168 hectares and mining facility areas increased from 434 hectares to 2146 hectares.

Authorizing mining activities in natural parks, forest lands and agricultural lands with the legislative amendments and financial and legal promotions for coal investments cause us to face irredeemable environmental damage as well as increasing negligence in ensuring mandatory safety measures.

Lack of Inspections at Mines

There is a vast number of reasons for Turkey's ranking 1st in mining accidents, ranging from excessive ambition for growth to subcontracting. Nevertheless, the main reason is lack of inspection. Calorific value of coal in Turkey is low, resulting in poor quality and high costs. Because of the policy to utilize all coal-based resources, cost cutting brought by private companies is unfortunately tolerated. This negligence results in laxity of inspections and endangerment to human safety. **For the last 19 years, Turkey hasn't signed the International Labour Organization's Convention No. 176 on "Security and Health in Mines"**. Even though the Ministry of Labour claims to have similar regulations, whether or not the mines operate in accordance with these regulations is uncertain. The Inspection Committee, subordinate to the same Ministry, indicates in its Occupational Health and Safety in Mines Report that two inspections have been made in the Manisa province (Akhisar-Gördes-Soma) and although 84 violations of regulation were detected in 7 out of 8 operations during the first inspection, these operations were sentenced to pay an administrative fine instead of shutting down. During the second inspection, 34 violations were detected and once again shutting down these operations was not considered necessary (5).

Who Operates the Coal Mine in Soma?

The owner of Soma Holding, which used to operate a lead-zinc mine in İzmir Bayındır during the 1970s, geology engineer Alp Gürkan shut down his own company at the end of the 1970s to work in Koç Group owned Tirebolu mine as

a subcontractor for 2.5 years. After Koç Group's decision to go its own way, Gürkan initiated the operation of a coal mine in Soma. Soma Holding was founded under the title "Soma Coal Inc." in 1984. In 2005, he won the royalty contract to take over TKİ's mining operation of 18 million tonnes of coal reserves. The company annually produces an estimated amount of 6 million tons of coal. TKİ buys the total amount of the coal produced and introduces it to the market under industrial and heating purposes. In 2009, the company also took over 15 million tons worth of Soma's coal reserves from Ciner Group. This mine has an annual capacity of 2 million 500 thousand tonnes with 5 thousand 550 working personnel, 5 thousand of whom work underground. A technical team of 130 people is responsible for occupational safety.

How Did the Coal Prices Drop at Soma?

After the disaster that occurred on the 13th May, Alp Gürkan's speech concerning the costs reduced from 136\$ to 28.6\$ received widespread media attention. Costs of coal mining are determined by a wide range of elements depending on physical costs and commodity prices. The factors that affect the costs are stated below:

1. Physical Parameters

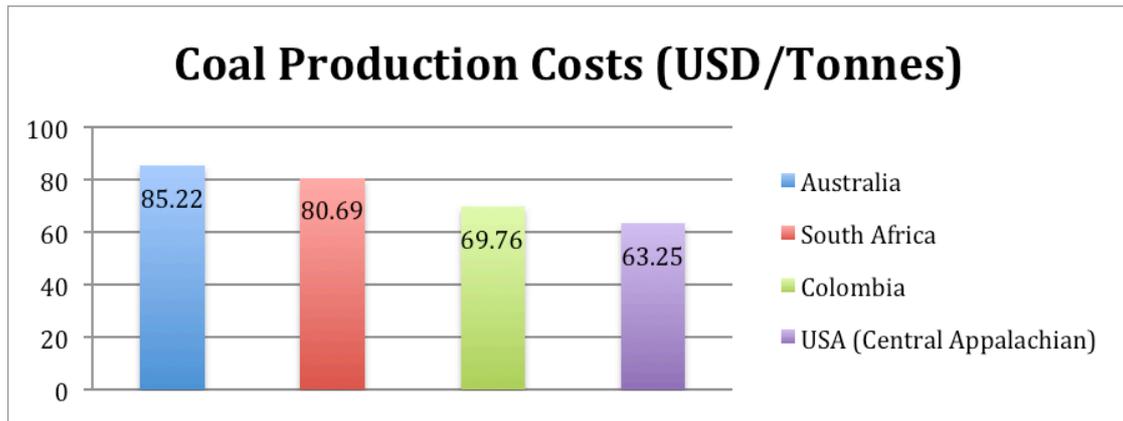
- Seam Geography
- Coal Quality
- Deposit Size
- Stripping Ratio
- Production Tax & Royalty Levies
- Distance to Export Ports & Mode of Transport

2. Commodity Prices

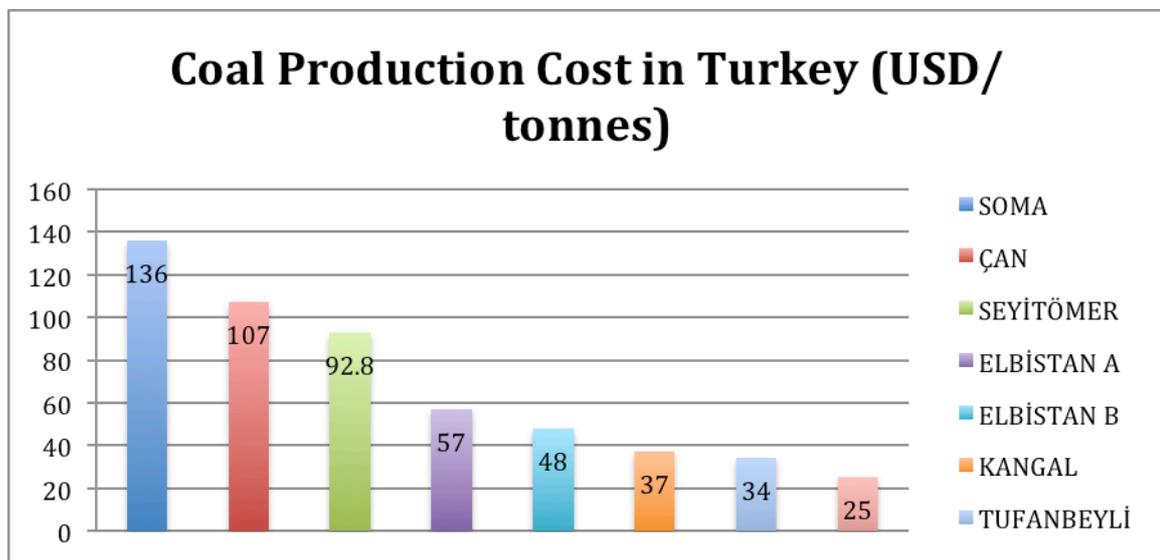
- Labor
- Diesel Oil
- Electricity
- Transport
- Explosives
- Replacement Parts
- Steel Products (6)

Costs of Coal Mining Globally

Global production costs alternate depending on the country. Prices for the last 6 months in top producer countries are stated below:



Costs of Coal Mining in Turkey



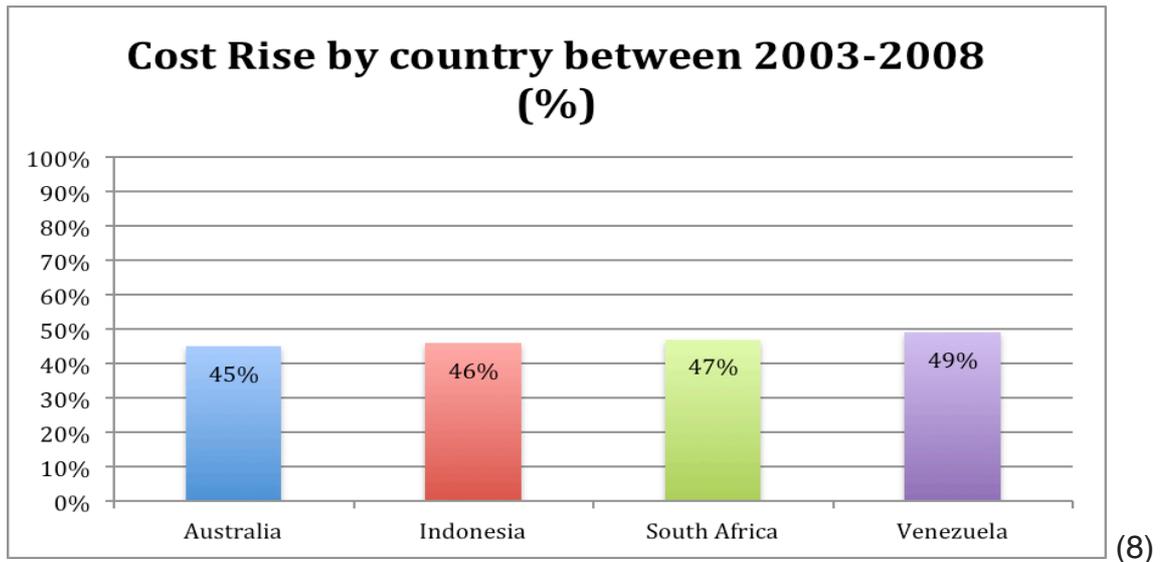
(7)

Decrease/Increase in Coal Extraction Costs

Costs of coal mining has been substantially increasing throughout the world. Causes of this result can be listed as below:

- Increasing commodity prices
- Increasing labour costs (high rates of coal sorting, prolonged transportation network etc.)
- Stricter environmental and legal regulations

Cost increase between 2003-2008 for coal production in top exporting countries occurred as stated below:



The fact that the company decreased its production costs from \$136 to \$23.8 per tonne in Soma is a cause for alarm when we consider that the same cost showed an increase of 50% in top coal generator countries in the last 5 years. During the period from when TKI was operating the mine to the present, there has been no change in factors that might cause the decrease in costs and the increased commodity prices (such as steel and gasoline prices) suggest decreases in security investments and employee costs.

The statement concerning the effective use of idle capacity, which was frequently used during the privatizing process, does not make sense when we consider reduction of costs by a quarter in Soma while all other cost items increased.

The Committee of Inspection's Occupational Health and Security report shows that a major part of violations that occurred in Manisa province (Akhisar-Gördeş-Soma) is related to mechanical-electrical equipment and facilities. As a matter of fact, the disaster in Soma was caused by equipment failure. Since the mining disaster in Soma was caused by a power distribution unit that caught fire, it is safe to say that the power distribution units used underground and in crowded places such as hospitals and schools should be dry type cast resin transformers instead of oil-filled transformers.

Solution

As stated above, the main cause behind the problem is the government's erroneous energy policies. Instead of increasing coal promotion and utilizing all coal resources, a series of concrete policies on using cleaner and safer renewable resources that will also provide more employment opportunities should be adapted. In each step of its lifespan, coal harms human health and environment.

While generating energy from coal is dangerous, dirty, and expensive, we have a feasible alternative: Renewable Energy. Greenpeace's Energy [R]evolution report shows that renewables can meet 38% of the global energy demand by 2020 and 95 % by 2050. Renewables has shown a strong increase in the last 25 years.

Germany's Energy Transition policy is a prime example to study how renewables can be rapidly adapted. Since Germany increased its energy production from renewable sources such as wind, solar, geothermal and biomass energy from 8% to 22% in the last 10 years, there has been a fivefold increase in production of renewable energy plants. Renewable energy sector currently employs 380 thousand people in Germany, doubling 2004's figures.

Despite the fact that Turkey holds the biggest potential in Europe for wind, solar and geothermal power, wind power accounts for 4% of the country's total installed capacity. The share of solar and geothermal power is 0%. The energy model described in the Energy [R]evolution report proposes installing grids generating 100% renewable energy, maintaining the growth rate of renewable sources and investing in a smarter way of energy consumption in buildings, transportation and industry. The Turkish Republic should encourage the positive effect on health, economy and environment that would come about by implementing this energy plan.

According to Greenpeace's Energy [R]evolution road map, Turkey could meet 85% of its electricity needs by renewable energy by 2040. However, if existing policies remain unchanged this number would be limited to a 47% maximum with majority of electricity continued to be produced by energy sources that pose risks to human health and the opportunity to create thousands of new jobs through the introduction of the renewable energy R&D sector would be lost.

It is about time that decision makers gave up on coal and took the lead to a cleaner energy future. Now is the right time to heal the entire planet and enhance the quality of life for everyone.

As Greenpeace, Our Demands are:

- Ministry of Energy must immediately cancel investments in new coal projects
- Coal must be removed entirely from energy production until the year 2040
- A national plan must be prepared for the transition of employees from coal industry to different sectors such as renewables and energy efficiency

- Restrictions on the renewable energy industry must be lifted, Subsidies to the coal industry must immediately be ended, and these subsidies must instead be issued to the renewable energy industry.
- In prioritizing who gets energy licenses, renewable energies must come before local or exported coal.

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http://www.emo.org.tr/genel/bizden_detay.php?kod=88369#.U3Yayy_vOCQ (accessed: 16.05.2014)

(2) TÜİK.

(3) Link to gazette on which the related decision of the council of ministers is published:
<http://www.resmigazete.gov.tr/default.aspx#>

(4) Link to gazette on which the regulation mentioned is published:
<http://www.resmigazete.gov.tr/default.aspx#>

(5) *Ministry of Labour and Social Security, Directorate of Committee of Inspection. Report on Results of Occupational Health and Safety Inspections in Mining, 2012*
http://www.csgb.gov.tr/csgbPortal/ShowProperty/WLP%20Repository/itkb/dosyalar/yayinlar/yayinlar2013/20132_60

(6) World Bank, New York Mercantile Exchange (NYMEX)

(7) *William G. Meister, Marston*

(8) Ibid.