RESTRUCTURING of TURKISH COAL ENTERPRISES

Mücella ERSOY
Chief Engineer
Selahaddin ANAÇ
General Director

UN ECE- COMMITTEE ON SUSTAINABLE ENERGY

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Coal Industry Overview

- Restructuring at TKI
  - Reasons
  - The Mines Which Stopped Activities
  - Inactive Mines
  - Expected Results
Coal Industry Overview

- SHARE of LIGNITE RESERVE, PRODUCTION and CONSUMPTION of TURKEY in the WORLD

- Share of Reserve: 2%
- Share of Production: 7.1%
- Share of Consumption: 7.0%
Coal Industry Overview

- LIGNITE RESERVE in TURKEY

The most widespread energy resource found in almost all regions of the country.

**TOTAL: 8,3 Billion Ton**
About 40% of Turkey’s lignite resources -3.4 billion tons- are situated in the Afsin -Elbistan basin. There are also asphaltite reserves of 80 million tonnes in the Sirnak & Silopi areas.
Coal Industry Overview

SHARE of TURKEY LIGNITE RESERVES and PRODUCTION BASED ON SECTORS

![Graph showing percentage of reserve and production between TKI and EUAS + PRIVATE SECTOR]

- By 2001

Although share of TKI’s reserve in total is 30%, TKI was responsible for about 52% of lignite production.
Coal Industry Overview

- LIGNITE PRODUCTION in TURKEY

![Graph showing lignite production in Turkey from 1980 to 2001]

- **TKI**
- **Private Sector + EUAS**
- **TOTAL (million ton)**

Almost 85% of lignite production is used in power plants.
Coal Industry Overview

QUALITY of TURKISH LIGNITES

- Low quality lignite

- 2001-3000 Kcal/kg: 24.5%
- 3001-4000 Kcal/kg: 5.16%
- >4000 Kcal/kg: 0.84%
- <1000 Kcal/kg: 3.18%
- 1000-2000 Kcal/kg: 66.32%
Coal Industry Overview

- **INSTALLED POWER BASED ON LIGNITE** by 2001

- Installed Power Based on Lignite : 6,400 MW
- Share of Lignite in Total Installed Power : % 23.8

- Total Electricity Generation in Turkey : 34,367 GWh
- Share of Lignite in Total Generated Electricity : % 27.5

- **Installed Power Based on TKI’s Lignite** : 3,953 MW
- Share of TKI’s Lignite in Total Installed Power : % 14.5
Coal Industry Overview
- IMPORTED RESOURCES

### Usage of N.Gas

<table>
<thead>
<tr>
<th>Year</th>
<th>1985</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lignite</td>
<td>42</td>
<td>28</td>
</tr>
<tr>
<td>Hydraulic</td>
<td>35</td>
<td>20</td>
</tr>
<tr>
<td>N.Gas</td>
<td>0.2</td>
<td>40</td>
</tr>
<tr>
<td>TKI</td>
<td>42</td>
<td>17</td>
</tr>
</tbody>
</table>

**Dispersion of Fuels for Electricity Generation**

- Electricity Generation (GWh)
- Lignite (%)
- N.Gas (%)
- Hydraulic (%)
- Oil (%)

![Graph showing dispersion of fuels for electricity generation over the years from 1970 to 2001.](chart.png)
Coal Industry Overview

- DECREASE IN MARKETSHARE of TKI

Up to 1989, TKI was monopoly for meeting the demand of power plants

By Transferring Mining Licences of big mines:

- Sivas Kangal mine (in 1989)
- Afşin-Elbistan mine (in 1995)
- Çayırhan mine (in 2000)

-Share of TKI’s lignite in total electricity generation

<table>
<thead>
<tr>
<th>Turkey</th>
<th>TKI</th>
</tr>
</thead>
<tbody>
<tr>
<td>% 28</td>
<td>% 17</td>
</tr>
</tbody>
</table>
CONTENT

- Coal Industry Overview

Restructuring of TKI

- Reasons
- The Mines Which Stopped Activities
- Inactive Mines
- Expected Results
Restructuring of TKI

- General

- Between 1990 and 2000, the workforce of TKI had been halved, from 32993 to 17408. Overall productivity increased from about 1117 to 2251 tonnes per person-year between 1990 and 2000.

- TKI doesn’t benefit from direct subsides and since 1995, it has been able to cover its costs and make some profit.

- Marketshare of TKI in total power plants demand decreased in 2002 and is expected to go down further as a result of rising usage of natural gas. Therefore loss of capacity is anticipated in 2002 and following years.
Restructuring of TKI

- REASONS

Small coal mines operated by TKI suffered serious losses which were compensated by profitable mines causing overstaffing, difficult working conditions and security problems.

- (1) Aiming at adding value to country’s economy and to create new job opportunities and to re-utilise the reserves of these inactive mines by leasing i.e. transferring mining licences to private sector or transferring these licences back to the government office if not successfully tendered.

- (2) creating new job opportunities by leasing to private enterprise two deep u/g mines which were not planned to be developed by TKI in the near future.
Restructuring of TKI

-KKI by the BEGINNING of 2002

-128 mines (15 establishments)
-2.55 billion tonnes reserve
-16362 employee
-40 million ton/year prod.cap

TKI

Active Mines (30)

Operated by TKI (24)

Operated by leasing (6)

Inactive Mines (98)
Restructuring of TKI
-TKI by the END of OCTOBER 2002

- 60 mines (9 establishments)
- 2.537 billion tonnes reserve
- 14695 workforce
- 39.5 million ton/year prod.cap
- 6 small & 2 deep u/g mines

TKI

Active Mines (22+6)
- Operated by TKI (13)
- Operated by leasing (9)

Inactive Mines (32)

6 small & 2 deep u/g mines
Restructuring of TKI
-TKI by the END of OCTOBER 2002

- # of Mines Stopped Activities (by July): 6 Establishments
- # of Mines Operated by TKI: 24 13
- # of Mines Operated by Leasing: 6 9
- # of Small Mines at Bidding Phase (leasing): 6
- Leasing Deep u/g Mines at Bidding: 2
- # of Mines Given Mining Licences Back to related body of government: 68 1
- Number of mines sold:
Restructuring of TKI
-TKI by the END of OCTOBER 2002

- # of Retired Employees (Jan.to Oct.).. : 1667
- # of Re-employed workforce from the mines which stopped activities ....... : 1098
- # of remaining temporary workforce for security reasons during bidding stage : 571
- Total # of employees in TKI ................. : 14695
- # of workers ........................................ : 11987
- # of officers ........................................... : 2708
Restructuring of TKI
-MINES WHICH STOPPED ACTIVITIES by July 2002

Activities at 6 mines were stopped:

- In line with Government Policies, and
- recommendations of High Auditing Council of the Priministry, and
- the Undersecretary of Treasury, and
- Decision of Board of Directors of TKI.
Restructuring of TKI - MINES WHICH STOPPED ACTIVITIES by July 2002

- **ADL** - Corum Mine
- **DLI** - Askale Mine
- **OLI** - Oltu Mine
- **GAL** - Silopi Mine
- **GOLI** - Goynuk Mine
- **TLI** - Saray Mine
Restructuring of TKI
-MINES WHICH STOPPED ACTIVITIES by July 2002

- Remaining Reserve: 235 million ton
  SHARE IN TOTAL TKI RESERVE: 9.2%

- Production by 2001: 383,503 ton
  SHARE IN TOTAL PRODUCTION: 1.79%

- Sales by 2001: 318,750 ton
- Market: Household + Industry
- 17% OF COALPRODUCED NOT SOLD

- # of workforce by May 02: 1669
  SHARE IN TOTAL WORKFORCE: 11.06%
Restructuring of TKI
-MINES WHICH STOPPED ACTIVITIES by July 2002

- **TOTAL LOSSES BY 1988**: 445.7 million $
- **AVER.OPERATING COST**: 46-242 $/ton
## Restructuring of TKI
- **LEASSING** of MINES WHICH STOPPED ACTIVITIES

<table>
<thead>
<tr>
<th>Mine</th>
<th>Reserve (1000 ton)</th>
<th>Duration (year)</th>
<th>Prod. (t/y)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpagut-Dodurga</td>
<td>16.797</td>
<td>10</td>
<td>300.000</td>
<td>awarded</td>
</tr>
<tr>
<td>Askale</td>
<td>162</td>
<td>2</td>
<td>20.000</td>
<td>awarded</td>
</tr>
<tr>
<td>Oltu</td>
<td>693</td>
<td>10</td>
<td>50.000</td>
<td>awarded</td>
</tr>
<tr>
<td>Silopi*</td>
<td>49.313</td>
<td>10</td>
<td>700.000</td>
<td>at bidding phase</td>
</tr>
<tr>
<td>Saray*</td>
<td>129.123</td>
<td>10</td>
<td>700.000</td>
<td>at bidding phase</td>
</tr>
<tr>
<td>Goynuk*</td>
<td>39.000</td>
<td>10</td>
<td>700.000</td>
<td>at bidding phase</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>235.088</strong></td>
<td></td>
<td><strong>2.470.000</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Characteristics of reserve suitable for power plants construction.
- ELECTRICITY MARKET LAW in TURKEY

Operating licence (TKI) → Leased Operating licence by TKI to 3rd Party → licence for electricity (Energy Market Regulatory Authority)

(1) Generation Licence or (2) Autoproducer Licence

Bilateral Contracts between market participants → Free Consumers limit: 9 million KWh consumption
Restructuring of TKI
-MINES WHICH STOPPED ACTIVITIES by July 2002

- 90% of mining equipment (heavy trucks) and 27% of associated mining equipment have reached the end of their service life.
- Required Renewal Investment: 212 million $
- Production Capacity (full): 40 million ton/year
- Overburden Removal: 270 million m³/year
  - By TKI: 140 million m³/year (In case renewal investment carried out & 3 shifts/day)
  - By Contractor: 130 million m³/year
- Total Required investment: 430 million ABD$
Restructuring of TKI - MINES WHICH STOPPED ACTIVITIES by July 2002

- Total required investment : 430 million $ (new and renewal)
- Total losses of the mines by 1988 : 445.7 million $

IT WOULD BE POSSIBLE TO MAKE THESE REQUIRED INVESTMENTS WITH THE REALIZED LOSS.
### Restructuring of TKI

**- LEASING OF TWO DEEP U/G MINES**

<table>
<thead>
<tr>
<th>Name of Mine (u/g)</th>
<th>Reserve (1000 ton)</th>
<th>Calorific Value Kcal/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tunçbilek Deep Mines</td>
<td>30.000</td>
<td>2.750</td>
</tr>
<tr>
<td>Soma-Eynez</td>
<td>32.000</td>
<td>3.150</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>62.000</strong></td>
<td></td>
</tr>
</tbody>
</table>

62 million tons of reserve of two deep u/g mines not planned to be developed by TKI were put to tender for leasing to private sector to meet preferably the increasing household & industry demand of Turkey

- at BIDDING PHASE -
## Restructuring of TKI
### INACTIVE MINES

<table>
<thead>
<tr>
<th>Name of Mine</th>
<th>Reserve (1000 ton)</th>
<th>Net cal. (Kcal/kg)</th>
<th>Power Ins.(MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adana-Tufanbeyli</td>
<td>214.000</td>
<td>1350</td>
<td>600</td>
</tr>
<tr>
<td>Bingöl-Karlıova</td>
<td>88.600</td>
<td>1460</td>
<td>100</td>
</tr>
<tr>
<td>Çankırı-Orta</td>
<td>50.700</td>
<td>1090</td>
<td>100</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>353.300</strong></td>
<td></td>
<td><strong>800</strong></td>
</tr>
</tbody>
</table>

Leasing or transferring mine licences of these explored & projected mines to private sector for the purpose of electricity generation are considered. Studies on remaining inactive mines are being continued.
The restructuring of TKI is expected to provide following results:

- The reduction of coal output due to stopping mine activities will have no significant effect on the security of supply or on meeting the market demand since coal output of these mines is almost negligible.

- Resettlement and re-employment of inactive personnel in other establishments of TKI are expected to provide improvement in the productivity and therefore reduction in operating cost.

Restructuring of TKI
- EXPECTED RESULTS
- Economic, Social, Environmental
Restructuring of TKI

- EXPECTED RESULTS
- Economic, Social, Environmental

- Transferring the materials, machinery and equipment available in the stocks to the other establishments of TKI are expected to provide savings in the investments.

- Selling and/or leasing the social and industrial plants, houses, lands are expected to provide additional income.

- It will be possible to make required new and renewal investment by eliminating losses. Hence productivity will increase and operating cost will decrease.

- In case decreased operation cost, it is possible to sell the product to customers cheaper than before.
Restructuring of TKI

- EXPECTED RESULTS

- Economic, Social, Environmental

- Leasing of the mines to private sector will add value to country’s economy and opportunities for new jobs and will decrease regional unemployment rate.

- Usage of domestic lignite or asphaltite reserves will be continued for the purposes of household, industrial consumption; and even for electricity generation.

- If reserves of three mines-Goynuk, Saray, Silopi- are utilised for electricity generation, then environmental problems will be minimised by installing clean coal technologies.