



USAID
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LABOR TRANSITION IN THE COAL SECTOR

SOUTHEAST EUROPE

APPENDIX D: ROMANIA

DRAFT

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ABBREVIATIONS

ANOFE	National Agency of Employment
ANRE	National Electric and Heat Regulators
AZM	Agentia Zonelor Miniere – National Agency for Programs Development and Implementation for the Reconstruction of the Mining Regions (formerly NAD)
CARDS	Community Assistance for Reconstruction Development and Stability
CFPP	Coal-Fired Power Plant
CA	Collective Agreement
CLNO	National Lignite Company – Oltenia (now the SNLO)
CNH	National Hard Coal Company – Petrosani
CONEL	National Electric Company (formerly RENEL)
DFID	Department for International Development
EM	Mining Enterprise
EMG	Emerging Markets Group
ESPP	Employment and Social Protection Project
ETIS	Employment and Training Incentive Scheme
EU	European Union
EURACOAL	European Association for Coal and Lignite
GEO	Government Emergency Ordinance
GD	Government Decision
GOR	Government of Romania
IBRD	International Bank for Reconstruction and Development
IMF	International Monetary Fund
INSSE	National Statistical Institute of Romania
ISO	Independent System Operator
LRP	Labor Redeployment Program
MCESERP	Mine Closure and Environmental and Social Economic Regeneration Project
MCSMP	Mine Closure and Social Mitigation Project
MEC	Ministry of Economy and Commerce
MMSSF	Ministry of Labor, Social Solidarity and Family
MO	Ministry Order
MOLSP	Ministry of Labor and Social Protection
NAD	National Agency for Programs Development and Implementation for the Reconstruction of the Mining Regions (now AZM)
NAE	National Agency for Employment
NAMR	National Agency for Mineral Resources
NGO	Non Government Organization
OPCOM	Operating Company
PAD	Project Appraisal Document
PAEM	Program on Active Employment Measures
PHARE	Poland and Hungary Assistance for Reconstruction of their Economies
PID	Project Information Document
PRIDE	Privatization Investment and Development of Energy Program
PSRM	Power Sector Rehabilitation and Modernization

RENEL	Romania Electricity Authority
SC	Commercial Society
SCIM	Company for Closure and the Preservation of Mines
SEE	Southeast Europe
SME	Small and Medium-sized Enterprises
SNLO	National Lignite Society - Oltenia
SNCP	National Coal Society – Ploiesti
TPP	Thermal Power Plant
UCTE	Union for Cooperation and Transmission of Electricity
USAID	United States Agency for International Development

Technical Terms:

GJ	Giga Joules
GWh	Giga Watt Hour
MMST	Million Short Ton
MW	Mega Watts
Mt	Million tons

EQUIVALENCY RATES

(Exchange Rate Effective October 2006)

Current Unit = Euro

Euro € 1 = USD \$1.26

USD \$1 = Euro €793

Romanian Lei (RON)

1 RON = US \$.360

US\$ 1 = 2.77 RON

Appendix D

ROMANIA

This report presents country-specific information on coal sector labor in Romania. It is part of a regional assessment of the labor force associated with coal mines and coal-fired power plants in Southeast Europe.¹

Labor Opportunities	Labor Challenges
<ul style="list-style-type: none">• More than nine years of experience have helped to refine and improve sector restructuring programs.• Romania's "Strategy for Mining and Industry for 2004-2010" draws on its restructuring experience and builds in measures for community participation in planning.• European Union accession drove government commitment to continue difficult mass layoffs and mine closures.• European Union accession was successfully achieved on January 1, 2007.• Comprehensive active labor market policies positively affect the coal and power sectors.• The donor community, notably the World Bank and EU took strong interest in the coal sector.	<ul style="list-style-type: none">• Romania's development faced some of the worst starting conditions among transition economies due to political, economic, and social legacy as market reform commenced.• 28,000 coal mining jobs remain to be eliminated.• Overall poverty remains high; the rural sector lags behind rest of the economy.• Out of 27 nationally designated Disadvantaged Regions, 23 are mining regions.• 155 mine localities depend on the mining sector for 50% of income.• Residents remaining in isolated coal regions are not inclined to relocate.

I. OVERVIEW AND BACKGROUND

With the fall of communist government in the late 1980s, Romania's new course for development posited market and political reforms that were akin to those soon to be underway in the former Soviet Union and already beginning to take hold in other parts of Southeast Europe (SEE). As the severely closed political regime of Romania was toppled, strong drives toward political and economic liberalization were initiated. From 1989 to 1995, the orientation of Romania's government changed several times, and each new administration supported a new set of economic development strategies. Romania's emerging private sector development was hampered by the slow pace of privatization, the noted changes in political and economic growth strategies, and the continued state support for state-owned enterprises. In 1996, a reform-minded government, dedicated to economic reforms through restructuring and privatization, was elected.

In view of its starting conditions, Romania's progress towards creating a market-friendly private sector-oriented economy is impressive. Privatization of state assets has progressed over the last decade, having crossed a critical threshold of no attempt to renationalize assets, instead, moving at a more rapid and

¹ The *Labor Transition in the Coal Sector: Southeast Europe* report in its entirety, including all appendices, will be available online through the USAID Development Experience Clearinghouse at <http://dec.usaid.gov> (PN-ADI-883).

predictable pace. Today, Romania supports an upper middle income economy with a population of 22 million people, the second largest population among Central Eastern European countries.² Romania's landscape is very rural, comprising 45% of the population³ and two-thirds of Romania's poor.⁴

Coal and Energy Sector Reform.

It is important to note that during the course of coal sector restructuring, simultaneous restructuring of Romania's oil, gas, hydro and electricity sector was underway. The restructuring of the electricity sector had particular importance for coal, as the sector began to consider alternative fuel sources (including import fuel and import power) based on cost, reliable and sustainable supply, and growing environmental considerations.

Coal sector restructuring began with legal framework development and reorganization of the national mining companies in 1991. However, Romania's mine sector labor restructuring began in earnest in 1997. The process was unpredictably swift and massive and ultimately contributed to deepening the nation's emerging economic recession. Most of the affected mines were coal, but non-ferrous metal and mineral mines also underwent dramatic economic and structural reform. Considerable emphasis was and has been placed on closure of non-viable mines (including coal processing/washing and transport facilities); these actions have had dramatic labor impacts throughout the country. Mine restructuring was intended to be part of the overall economic restructuring initiatives that began to take hold in Romania in the early to mid-1990s. However, a combination of strong union participation and the economic pains that resulted from mine downsizing ultimately led to delaying sector reforms until late 1998. By July 2004, nearly 83.5% of Romania's electricity market was opened for privatization.⁵ Still, considerable reform is required, and ongoing privatization of sector assets is being supported.

Labor restructuring has been a major focus of the Romanian government's mine sector program during the last decade. Nevertheless, poverty in Romania remains high at 15%, and rural coal areas lag far behind the rest of the economy.⁶ Alternative employment opportunities need to be created to absorb the labor surplus from further restructuring. This report assesses current labor trends in the sector, as well as the implementation practices and lessons learned of employment programs and assistance services designed to mitigate restructuring's effects on labor.

II. COAL MINING – BACKGROUND INFORMATION

This section presents information on Romania's coal production and coal mine employment, followed by additional data for selected mines.

Romania's hard coal reserves are primarily located in the mining basin of Jiu Valley in southwestern Romania. This coal has been and is used for power and industrial purposes. The following map below shows the location of Romania's coal mining operations and coal-fired power plants.

² World Bank, *World Development Indicators 2007* (Washington: World Bank April 2007).

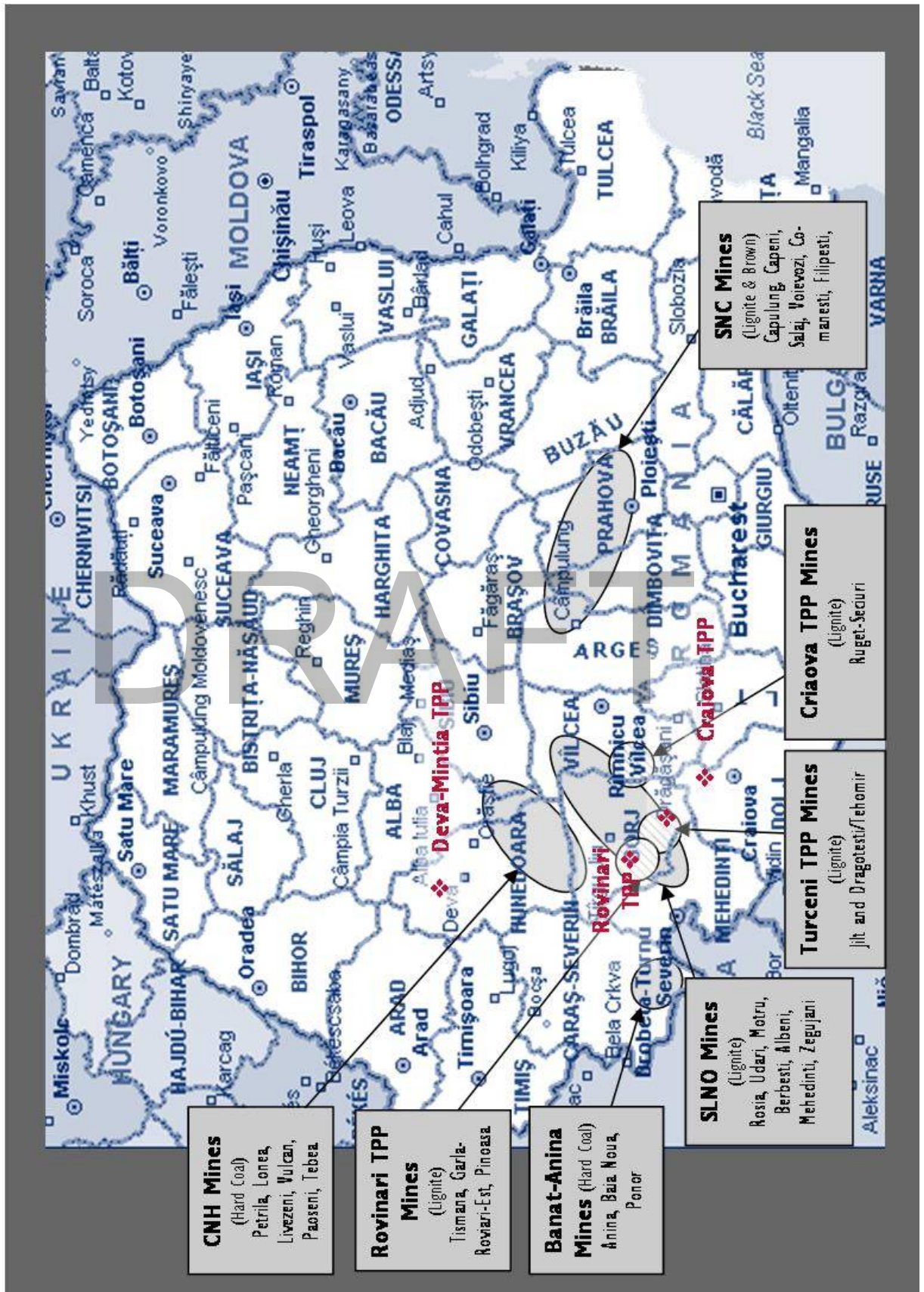
³ National Statistical Institute of Romania (INSSE), *Romanian Statistical Yearbook 2005* (Bucharest: INSSE, 2005): 2.G3, <http://www.insse.ro/cms/files/pdf/ro/cap2.pdf>.

⁴ World Bank, *Country Brief* (Washington: World Bank, 2006), <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/ECAEXT/ROMANIAEXTN/0,,pagePK:141132~piPK:141107~theSitePK:275154,00.html>.

⁵ European Commission, *Romania: 2005 Comprehensive Monitoring Report.*, 1354 SEC, (25 October 2005): 27.

⁶ World Bank, *Country Brief*, (Washington: World Bank, 2006).

Coal Mines and Coal-Fired Power Plants in Romania



Prior to 1989, the mine industry development strategy required that coal be entirely supplied from indigenous national resources in order to reduce imports and respond to miner unrest, particularly in the Jiu Valley. The result was an overstaffed mining sector, absorbing over 350,000 people as direct labor and another 700,000 as indirect labor.⁷ In September 1997, the Government decided to stop all mining activities in mines that were unsafe or nearing depletion.

Today, 80% of lignite reserves can be mined profitably in open pit mines; the remaining 20% requires underground development.⁸ Between 1997 and 2002, coal production became increasingly non-viable due to decreasing state subsidy (a result of macro economic reforms), as well as a general decline in demand for Romanian coal. Production fluctuated from 29.3 Mt in 2000 to 33.0 Mt in 2003 to 31.0 Mt in 2005.

In 2004, as part of the power complex restructuring process initiated by Government,⁹ the country's primary coal company, the National Lignite Company (CLNO) was reorganized into two entities:

1. The Company for Closure and the Preservation of Mines (SCIM), which is responsible for collecting claims and paying debts incurred by the merger with the Thermo-Electric Power Plants.¹⁰
2. The National Lignite Society–Oltenia SA (SNLO), which oversees active coal mines and is one of four companies operating the coal sector.

As a result of this further restructuring, in 2006, there were four companies operating 73 mines and 2 processing plants:

1. **The National Lignite Society – Oltenia (SNLO, former CLNO)**
2. **The National Hard Coal Company – Petrosani (CNH)**
3. **The National Coal Society – Ploiesti (SNCP)**
4. **The Commercial Society (SC) of Banat – Anina.**

Number of Mines and Processing Plants¹¹

	Hard coal	Lignite & Brown
Mines	12	23
Open pits	-	38
Processing plants	2	-

The following chart summarizes available data regarding the 2006 organization of coal mines that supply coal-fired power plants in Romania. Several coal mines are associated or bundled with coal-fired power plants operations (Turceni, Rovinari, and Craiova) or coal companies to ensure viability.

⁷ Ministry of Economy and Commerce, *The Strategy of the Mining Industry 2004-2010*, H615/21.04.2004 (Government of Romania April 2004), http://www.minind.ro/domenii_sectoare/theStrategy.htm, (accessed 13 March 2006).

⁸ World Energy Council. *Restructuring the Coal Industries in Central and Eastern Europe and the CIS* (London: World Energy Council, August 2000): 133.

⁹ Government of Romania, Government Decision No. 103/2004 (2004).

¹⁰ Emerging Markets Group (EMG), Information Memorandum for the Turceni Energy Complex, USAID Privatization, Investment and Development of Energy (PRIDE) project, (Washington: USAID, 2005).

¹¹ Maria Nitou, "Mining Industry Equipment in Romania." (Washington: US Commercial Service, December 2005).

Coal Mine and Labor Force Summary: Romania

	Production Capacity (tons/year)	Type of Coal	Exploitable Coal Reserves (million tons)	Number of Employees - 2004	Change
Lignite Total (2004)	19.9 million		2800	13,400	-10,600 (from 2002)
Hard Coal Total (2004)	3.4 million		900	15,480	-2,925 (from 2002)
Power Complex Turceni					
EM Jilt (includes open pits: Jilt Nord and Jilt Sud)	4.8 million ¹²	Lignite	100	2524 (906 Nord, 1,266 Sud, 352 Headquarters)	-3027 (from 1991 peak of 5551 with rail workers)
Dragotesti/Tehomir Mine (underground)	400,000 ¹³	Lignite	1.520	351 ¹⁴	-24 (from 2003)
Power Complex Rovinari					
EM Rovinari (includes open pits Tismana I & II; Garla-Rovinari Est; and Pinoasa)	8 million	Lignite	180	3030	
Power Complex Craiova					
Ruget-Seciuri (separated from Berbesti in 2004)	650,000				
National Lignite Society - Oltenia ¹⁵ (SNLO, former CNLO)	14 million (2004) ¹⁶	Lignite		17,791 (13,395 open pit, 4,396 underground ¹⁷)	-5,333 (from 1998 ¹⁸)
EM Rosia (includes open pits Rosia & Pesteana Nord [supply Rovinari CFPP] and Pesteana Sud-Urdari and Farcasesti Mine [supply Turceni and Oradea I CFPPs])	6.9 million	Lignite	110	2951	
Underground Urdari (supplies Turceni and Oradea I CFPPs)	300,000	Lignite	1.637 (data for Urdari)		
EM Motru (open pits include Lupoaia and Rosiuta, which supply Isalnita, Craiova II, Romag Turnu-Severin CFPPs)	5 million	Lignite	100	2301	

¹² Gorj Dominio, *Complexul Energetic Turceni*, Pregatit Pentru Vanzare (July 26, 2006), <http://www.gorj-dominio.ro/arhiva/2006.07.26/subiectulzilei.html>

¹³ Ibid.

¹⁴ EMG, Information Memorandum – Turceni, 2005: 215.

¹⁵ Reflects National Lignite Company – Oltenia data before restructuring to SNLO in 2004.

¹⁶ National Society of Lignite – Oltenia SA (CNLO), Official Website, (Targu-Jui: CNLO, 23 May 2003), <http://www.cnlo.ro/>, (accessed September 15, 2006).

¹⁷ Ibid.

¹⁸ World Bank, *Project Appraisal Document (PAD) Mine Closure and Social Mitigation Project*, Report No: 19347-RO (Washington: World Bank, 6 August 1999): 17.

Coal Mine and Labor Force Summary: Romania

	Production Capacity (tons/year)	Type of Coal	Exploitable Coal Reserves (million tons)	Number of Employees - 2004	Change
EM Motru Underground (includes Plostina, Horasti, and Lupoia, which supply Isalnita, Craiova II, Romag Turnu-Severin CFPPs)	1.6 million	Lignite	7.5		
EM Berbesti (open pits include Oltet, Berbesti-Vest and Panga, which supply Craiova II and SC Govora CFPPs)	2 million	Lignite	60	1793	
Albeni Mine (supply Craiova II and SC Govora CFPPs)	555,000	Lignite	6.12		
EM Mehedinti (includes Husnicioara-Vest open pit, which supplies Romag Turnu-Severin CFPP)	2.5 million	Lignite	26	669	
Zegujani Underground (supplies Romag Turnu-Severin CFPP)	600,000	Lignite	1.5		
National Hard Coal Company – Petrosani (CNH) ¹⁹	3.5 million (2005)	Hard coal	648	15,950 (11,963 underground; 3,987 surface)	-21,858 (from 1997 ²⁰)
1. EM Petrila				2,202	
2. EM Lonea				1,927	
3. EM Livezeni				1,800	
4. EM Vulcan				8,600	
5. EM Paroseni				4,200	
6. Tebea	Unavailable	Brown			
National Coal Company – Ploiesti (SNCP) Includes mines Campulung, Capeni, Salaj, Voievozi, Comanesti, Filipesti, Sotanga, Borsec (supply Brasov, Oradea, Zalau, Doicesti CFPPs)	1.58 million ²¹ (2004) Capacity 2.26 million	Lignite and Brown Coal		5998 (2003)	-4147 (from 1998 ²²)
Banat Commercial Mining Company - Anina Includes mines Anina, Baia Noua, Ponor (supply Parseni and Mintia CFPPs)	.2 million ²³	Hard Coal		944	

¹⁹ Jiu Valley Portal, Community Estimates, nd., <http://www.avj.ro>, (accessed 28 September 2006).

²⁰ Analytical Advisory Assistance, *Jiu Valley Region Development Romania, Annex B: Hard Coal Industry*, (March 2004): 5.

²¹ Ministry of Economy and Commerce, *Romanian Industry: Present and Perspectives* (Bucharest: Ministry of Economy and Commerce, 2005).

²² World Bank 1999:17.

The next section provides additional information on coal operations, including labor data and planned employee reductions, and restructuring or rehabilitation in selected mines.



Power Complex Turceni

Jilt mine is located in Gorj County and employs 115 people in the associated railway. Since 2002, an employee reduction program has been under way.²⁴

- Workforce decreased 54% from 1997 to 2004.
- In 2002, 112 employees received compensatory payments totaling 20,170 million ROL (\$720,000/\$6,429 each).
- In 2003, 127 employees were subject to early retirement with associated costs amounting to 19,285 million ROL (\$688,430/\$5,420 each).
- In 2004, 49 employees left the company with associated costs totaling 7,530 million ROL (\$268,631/\$5,482).
- In 2003, 84% of total employees were categorized as coal workers and 10% as technical and administrative personnel.
- 88% of the workforce attended secondary school, 10% have university degrees, and 2% are low-skilled laborers.²⁵

Dragotesti Mine is expected to be closed prior to privatization, and the 351 employees will be relocated or retired.²⁶

National Lignite Society – Oltenia (SNLO, Societatea Nationala a Lignitului Oltenia, formerly CNLO) Headquartered in Jiu Valley north of Craiova, SNLO's lignite has been sold without state subsidy since 1997 at world market prices. The enterprise has open pit and underground mines. Open pit units produce 87% of the total lignite production and underground units produce the remaining 13%.²⁷ The SNLO coal fields span three counties (Gorj, Valcea, Mehedinti) and include the mines of **Rosia, Motru, Berbesti, and Husnicioara**. In 2004, annual production reached 18.2 million tons. Of the 18,551 employees, 58% have basic schooling and 10% are university graduates.²⁸

National Hard Coal Company – Petrosani (CNH, Compania Nationala a Huilei - Petrosani) CNH is headquartered in Jiu Valley near Hunedoara. In 1990, 15 mines produced hard coal under CNH. As part of the 2004 – 2010 national plan for restructuring, the Ministry of Economy and Commerce will gradually phase out operating losses and subsidies by rehabilitating and upgrading the CNH coal mines.²⁹ The current status:

²³ European Association for Coal and Lignite (EURACOAL), Romania, (2004), <http://EURACOAL.be/newsite/Romania.php>, (accessed 26 October 2006).

²⁴ EMG, Information Memorandum – Turceni, 2005: 214.

²⁵ Ibid.: 214.

²⁶ Ibid.: 215.

²⁷ CNLO 2003.

²⁸ Ministry of Economy and Commerce 2004.

²⁹ Ibid.

- Three coal mining operations (**Aninoasa, Lupeni and Uricani**) are undergoing closure procedures.
- Five coal mines remain active.
- Annual coal production capacity decreased from 10.4 Mt in 2003 to 3.5 in 2005.³⁰
- The coal workforce was reduced 46% from 1997 to 2002.
- 60% of CNH workers attended secondary school, 9% have university degrees, and 31% have basic schooling.³¹

The coal mines that comprise the CNH enterprise are:

EM Petrila Nord Mine – located in Petrila, population 33,000. The Petrila Coal Washing Plant was closed in 2003.

EM Livezeni Mine – located near Petrosani, population 50,000. In 1990, the Livezeni Coal Washing Plant ceased operations and Livezeni Sud mine closed.

EM Tebea Mine – The National Agency for Mineral Resources reported in August 2006 that the CNH holds licenses for brown coal exploration in the Tebea Basin, including the perimeters of Tebea-Dambut, Tebea-Mesteacan, Tebea-Mara, Tebea-Dambu Mare, Tebea-Mestecanul Mare, and Tebea Vest. Production and employment data were not available.

National Coal Society – Ploiesti (SNC, Societatea Nationala a Carbunelui- Ploiesti). Lignite and brown coal mines include **Campulung, Capeni, Salaj, Voievozi, Comanesti, Filipesti, Sotanga, and Borsec**.³² 25% of the workers attended secondary school, 7% have university degrees, and 41% have basic schooling.³³

Banat Commercial Mining Company is located in the Anina coal basin. Hard coal is mined in **EM Anina, EM Baia Noua (Baia Noua and Cozla pits), and EM Ponor (Doman Pit)**. 25% of the workers attended secondary school, 5% have university degrees, and 70% have basic schooling.³⁴ Workers with basic education levels indicate a specialized skill set that may not be easily transferable.

³⁰Walter G. Steblez, “The Mineral Industries of the Southern Balkans: Albania, Bosnia and Herzegovina, Croatia, Macedonia, Serbia and Montenegro, and Slovenia.” (2003)

³¹ Ministry of Economy and Commerce 2004.

³² EURACOAL 2004.

³³ Ministry of Economy and Commerce 2004.

³⁴ Ibid.

III. COAL-FIRED POWER PLANTS

The following chart summarizes data regarding the coal-fired power plants and available labor force data. It attempts to track the complex reorganizations from bundling and unbundling activities. For comparison and clarification purposes, Annex A provides a list of coal-fired power plants (CFPPs) that existed in 1996.

Romanian Coal-Fired Power Plants					
	Production (GWh/year)	Year Opened	Number of Units Installed capacity (2003)	Coal Use	Number of Employees in 2004
TOTAL	18,004				5086
Deva-Mintia (Electrocentrale Deva SA)	5,320 ³⁵	1975	6 units/1260 MW (210 MW each)	Hard Coal	1036
SC CE, Turceni SA	5,665 (2004) ³⁶	1978	7 units/2310 MW (5 operational) (330 MW each)	Lignite	1313 (2003 data)
SC CE, Rovinari SA	4,614 (2001) ³⁷	1976	6 units/ 1320 MW (4 operating) (220 MW each)	Lignite	4035 (includes 1059 generation employees)
SC CE Craiova SA (includes Isalnita and Craiova II)	2,405 (2001) ³⁸ (Isalnita 1,377 Craiova II 1,028)	1975 Isalnita 1987 Craiova II	4 units/930 MW 2 x 315 - Isalnita 2x150 Craiova II	Lignite	1678 ³⁹

Coal-fired Power Plants Under Termoelectrica

I. Deva-Mintia

The Deva-Mintia power plant uses hard coal and natural gas as primary fuel sources. In 2003, Deva-Mintia TPP used 90% of the hard coal mined in the Valea Jui Basin.⁴⁰ The plant has been in the process of being rehabilitated to improve efficiency and comply environmental regulations.

³⁵ Victor Vaida, *Technical Means of Improving Operation Reliability and Efficiency and of Achieving Compliance with the UCTE Criteria at Deva-Mintia Power Plants, Perspective of the European Energy Market*. World Energy Council Regional Energy Conference Forum, FOREN 2004. (June 13-17, 2004). Reference no: S2-21.

³⁶ EMG, Information Memorandum – Turceni, 2005: 13.

³⁷ Hunton & Williams, *Proposed Privatization Strategy Policy Framework for the Romanian Power Generation Sector: Appendices*, (Washington: USAID 2003).

³⁸ Ibid.

³⁹ Major Companies in Romania (MCIR), Official Website, (2005) <http://mcir.doingbusiness.ro/c02/s02/c1993/financial.html>, (accessed September 28, 2006).

⁴⁰ Victor Vaida, *The Modernization of Power Generation Units as a Means of Improving Operation Efficiency and Reliability*, presented at the 5th International Power Systems Conference, Timisora, Romania, (6-7 November 2004): 515, <http://et.upt.ro/cee/ro/psc/works03/PSC81.PDF>.

Coal-fired Power Plants Linked to Mines – Scheduled for Privatization

1. Turceni

Located between the cities of Craiova and Targu Jiu, Turceni is Romania's largest coal-fired thermal power plant with seven units (five operational). In 2003, there were 2,420 employees. By the end of the year, 1,107 were laid off, 911 by outsourcing maintenance.⁴¹

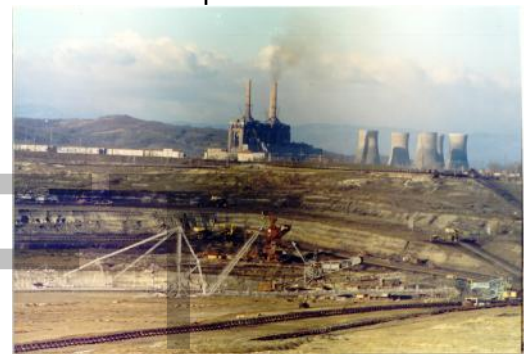
- The USAID's Privatization, Investment and Development of Energy (PRIDE) Program provided technical assistance to prepare the complex for privatization.
- In 2003, the plant received ISO 90001 certification.
- Workers comprised 76% of the workforce of 1,313 in 2003, at an average gross monthly salary of \$524.
- In March 2005, the Romanian Government signed a loan agreement with the Japan Bank for International Cooperation to improve environmental standards at the plant.⁴²
- In July 2006, the Ministry of Economy and Trade announced its intention to sell 51% of the shares to a private investor. This will be the first complex of its type to be put up for sale.



Turceni Power Plant

2. Rovinari

Located near the coal pits of Rovinari, Tismana, and Pinoasa, the plant is one of the few fed directly from coal mines via conveyor belt. Plans are to commission a new unit with 400 to 500 MW, while Units 1 (4 x 330 MW) and 2 (2 x 200 MW) will be decommissioned.⁴³



Rovinari Power Complex

3. Craiova

In 1896, Craiova became the first Romanian city supplied with electric power. Located in southwest Romania, the power complex was created by bundling the existing Isalnita and Craiova II power plants. Planned renovations of the Isalnita thermal power plant (TPP) under the Power Sector Rehabilitation and Modernization Project (PSRMP) were delayed in favor of the Deva TPP because of decreased demand for electricity. The Craiova complex employs 1,678.



Craiova Power Plant

⁴¹ EMG, Information Memorandum – Turceni, 2005: 214.

⁴² Japan Bank for International Cooperation (JBIC), "JBIC Signs ODA Loan Agreement with Romania – In support of Environmental Improvement at the Country's Largest Thermal Power Plant," (Tokyo: JBIC, 4 April 2005), <http://www.jbic.go.jp>.

⁴³ National Association of Romanian Exporters and Importers (ANEIR), <http://www.aneir-cpce.ro/sponsors/rovinari/Publication>, (accessed 3 March, 2006).

IV. KEY STAKEHOLDERS IN COAL SECTOR RESTRUCTURING

An array of institutions has played an important role in how Romania's coal sector has evolved. These range from Government ministries and regional governments and agencies to coal-specific entities and unions to various international donors, as well as the European Union accession institutions. (See Annex D for Donor programs.) There are important links between Romanian power and coal institutions as key stakeholders in the restructuring process.

Coal Entities

Coal Companies

- The National Lignite Society–Oltenia (SNLO, former CLNO) oversees active coal mines
- The National Hard Coal Company–Petrosani (CNH)
- The National Coal Society–Ploiesti (SNCP)
- The Commercial Society (SC) of Banat–Anina

The Company for Closure and the Preservation of Mines (SCIM), which was created through the reorganization of the National Lignite Company, is responsible for collecting claims and paying debts incurred by the merger with the Thermo-Electric Power Plants.⁴⁴

Coal Trade Unions

- **Federation of Mining Unions of Valea Jiului** (Federația Sindicatelor Miniere din Valea Jiului) represents the miners in the Jiu Valley.
- **Mining Union of Oltenia** (Uniunea Sindicatelor Minerilor Oltenia) acts as an umbrella organization for coal miners in the region and is part of the Confederation of Romanian Mining Unions.
- **Sindicatul Energia Turceni** is an independent union for the Turceni TPP.

Government

Ministry of Economy and Commerce (MEC) – In accordance with the 2003 Law on Mining, the MEC develops government strategy and finances state mineral resources operations. The MEC leads the implementation of the Strategy for Mining and Industry 2004-2010. Before 2003, the Ministry of Industries and Resources handled all aspects of coal restructuring.

- **Office of State Ownership and Privatization in Industry** is responsible for privatizing mines.
- **National Agency for Mineral Resources (NAMR)** is the Competent Authority for licensing, managing mineral resources, and enforcing legal provisions pertaining to exploration and utilization of Ministry resources.
- **Directorate for Mining Closure**, (formerly the Central Group for Mine Closure) was created through Order No. 1670/25 September 1999. It leads closures, manages funds, and hires a public or private contractor to be responsible for physical mine closure and environmental rehabilitation. The contractors employ specialized workers: laid-off miners, electricians, mechanics, foremen and engineers.⁴⁵ The Directorate also determines how assets (buildings or other utilities) are used by new businesses to create jobs for laid-off miners.

⁴⁴ EMG, Information Memorandum – Turceni, 2005.

⁴⁵ World Energy Council 2000: 139.

Ministry of Industries and Resources became the lead government body responsible for the reform of Romania's energy sector (including coal and power) starting in the late 1990s.

National Agency for Programs Development and Implementation for the Reconstruction of the Mining Regions (Agentia Zonelor Miniere) NAD/AZM was established in February 1998 and continues to operate under the auspices of the Prime Minister's office. NAD provided Romania's coal sector managers, workers, and government their first starting point from which sector reform was discussed, policy developed, and assistance actions designed and implemented. Over the years, NAD offered a network of regional offices to specifically service coal workers and communities impacted by coal reform. Today, NAD coordinates Government and donor support and facilitates social mitigation and development programs in mining areas based on terms of agreement between government and labor unions when voluntary redundancy is negotiated. NAD's role has expanded over the years through collaboration with the Ministry of Labor to organize Local Consultative Committees to systematize social dialogue and social impact monitoring in mining regions, enabling the Ministry to disburse labor redeployment funds through NAD's 14 regional offices.

Ministry of Administration and Internal Affairs is responsible for ensuring coordination with local authorities.

Ministry of Labor, Social Solidarity and Family (MMSSF) (formerly the Ministry of Labor and Social Programs [MOLSP]) and the **National Agency for Employment** are responsible for implementing social measures.

- **The National Authority for Youth** is responsible for implementing youth education and training programs.

Power Entities

Power companies

Termoelectrica. As of October 2006, Termoelectrica includes three power complexes (Craova, Turceni and Rovinari) that are scheduled to be privatized beginning in late 2006. Termoelectrica also oversees thermal power generation at the Deva-Mintia and Bucharesti power plants, which use mixed fuel sources (oil, natural gas, and coal).

S.C. Electrica S.A. The company develops activities for energy distribution and supply. In 2002, the distribution and supply activity was reorganized into eight subsidiaries, which own separate licenses for distribution and supply and keep independent accounting records. In 2005, the company reported 22,300 employees.⁴⁶

Energy Maintenance and Services Branch. Through Governmental Decision No. 74/2005, the Energy Maintenance and Services Branch was established to provide support, maintenance, repair, transport, consulting, and engineering and design services.

Transelectrica. As the Transmission System Operator, Transelectrica ensures the safe, secure and efficient operation of the national energy system at a reasonable cost and in accordance with EU environmental standards. It coordinates auxiliary services contracts and is responsible for balancing

⁴⁶ MCIR 2005.

supply and demand. In October 2003, it became a full rights member of UCTE. The company employs 2,105.

- **OPCOM**, a subsidiary of Transelectrica, is the Independent Market Operator. The company ensures 3rd party access to the transmission power network in a regulated and non-discriminatory manner.

Power Sector Regulatory Body. National Electric and Heat Regulator (ANRE). ANRE functions as an independent regulator, funded by fees for licenses and regulatory activities.

V. EMPLOYMENT RESTRUCURING

Voluntary Downsizing

Romania's experience in coal mine restructuring has proven to be unusual in that it started with a voluntary worker downsizing program. When the Government of Romania decided to stop funding certain mining activities in September 1997, it offered mine workers severance packages that were nearly twice as large as that of other sectors. The packages included:

- 12 to 20 months of pay (compared to the standard 6-month period)
- A base pay rate (derived from the average mining wage) that was twice the average national wage
- Ppayment in a lump sum amount, in exchange for a written commitment by sector workers not to seek work in the mining sector for the following twelve months

The Government also signed a protocol with the national labor unions to:

- Create a specialized agency for social mitigation and job creation in the mining regions
- Enact a special law declaring the mining regions as Disadvantaged Regions to provide a tax incentive to future investors
- Initiate active measures to create jobs for mine workers

40% of workers nationwide accepted severance packages within four months of government offering. The Government's expectation was that no more than 15% of the coal workers would voluntarily accept the package. The extremely large number of voluntary layoffs in such a short period of time caught the Government unprepared and financially unable to provide the support promised in the protocol.

In Jiu Valley, Gorj county, and Deva (Hunedoara county), a total of 45,530 workers (38% of 119,385 employed in those regions in August 1997) were laid off in the last four months of 1997. A 1998 Social Assessment of Mining Sector Restructuring⁴⁷ report found that in the six months following lump sum severance payments:

- 70% had consumed the severance payment unproductively.
- 5% had attempted to start their own business.
- 64% had been seeking jobs, but only 5% found work.
- Most workers were under the illusion that they would be re-employed in a restructured mining sector because they were prohibited from seeking mining jobs for only one year.

The highest rates of despondency were in the Jiu Valley, to which 95% of the workers had migrated to work in mining operations and where few jobs exist outside the mining sector. 5% tried to relocate to

⁴⁷ World Bank 1999: 57.

their original homes but were unable to find housing or employment. Most were compelled to return to apartments that they owned in Jui Valley.

In Gorj county, 60% of the population was from surrounding villages where they had owned or shared small plots of agricultural land. As a result of having this land, only 3% migrated out of the county. In Deva, other industries provided alternative opportunities to laid-off coal sector workers. Women, who proved to be less mobile, expressed a higher preference for agricultural work and for micro-enterprises than relocation or large factory work. However, the absence of credit to implement these employment opportunities was a major constraint.⁴⁸

There was considerable discontent about the Government's ability to respond to the needs of the mining regions throughout Romania and the slow pace of Government's delivery on commitments made in the protocol. In early 1998, Government worked in partnership with the World Bank to establish the National Agency for Program Development and Implementation for the Reconstruction of the Mining Regions (NAD), which initially lacked program funds. The Disadvantaged Regions ordinance was not issued until September 1998. Initial severance packages were extended for 6 to 8 months as the process continued, and these extensions continued for up to another two years. The uptake of separation packages declined as mining unions went on strike against high unemployment and there was poor job creation. The political nexus to the coal sector restructuring was strong: the primary labor union leader was jailed for more than one year based on strike-related actions; other union members were also incarcerated, generating additional ill will between Government and sector workers and their communities.

By December 1998, about **83,000 miners (out of 173,000) had left the industry**. Of those leaving, about 13,000 retired or transferred to service enterprises that were spun off from the mining companies and **approximately 70,000 accepted severance packages**.⁴⁹ By 2004, additional lay-offs and some retirements reduced the workforce to 57,738, nearly a 67% reduction since 1997.⁵⁰

Of the mine workers laid off by 2001, nearly 67,000 were coal extraction workers or coal miners.⁵¹ By the end of 2002, the coal mining workforce was comprised of:

- 14.5% over 45 years of age
- 14% females (13% in the lignite sector and 16% in hard coal)
- 33% categorized as miners

VI. RESTRUCTURING ASSISTANCE PROGRAMS

Active Labor Market Measures

Building on preparation for coal sector restructuring, which began in the early 1990s, the legal framework needed for regulating collective dismissals, redeployment services, and severance payments was approved in 1997. Government, working in partnership with the World Bank and the European Union, developed a set of priority actions to support a mine closure program. Since 1993, the EU-PHARE Program had implemented a number of programs to support active labor market measures,

⁴⁸ Ibid.: 57.

⁴⁹ Ibid.: 4.

⁵⁰ World Bank, *PAD Mine Closure, Environmental and Socio-Economic Regeneration Project*, Report No. 30517-RO, (Washington: World Bank, 18 November 2004): 50.

⁵¹ Michael Haney and Maria Shkaratan, *Mine Closure and its Impact on the Community: Five Years After Mine Closure in Romania, Russia and Ukraine*, Policy Research Working Paper 3038, (Washington: World Bank, June 2003): 4.

community development, and SME assistance. In particular, EU-PHARE's Programme on Active Employment Measures (PAEM RO 9209.01) supported the Government in developing and implementing labor market policy and reform through by implementing 66 local projects on active employment measures in 57 Romanian localities.

PAEMs successful experience shaped the design of the 1997 – 2002 Labor Redeployment Program (LRP), funded by the World Bank, which was specifically targeted to regions where massive redundancies took place. As part of the Bank's Employment and Social Protection Project (ESPP), the LRP was launched in cooperation with the U.S. Agency for International Development (USAID) and the U.S. Department of Labor to help the Ministry of Labor and Social Protection reduce the impact of restructuring through:

- Active Labor Measures
 - pre-layoff services
 - social and career counseling
 - labor market information
 - job search assistance
 - placement and relocation assistance
 - training and retraining services
 - small business development assistance
 - business incubators development
 - temporary employment (local community public works)
- Media and Public Information
- Local Economic Development Planning

Public Work programs are typically low wage and temporary, but can be an important part of initial policy response to mine closure to relieve social tension, and provide some income. Programs can target specific disadvantaged groups such as older workers or women. The priority should be to establish programs early before initiating downsizing. Temporary work programs funded through the World Bank Employment and Social Protection Project provided employment up to 6 months. These programs are well known and sometimes the only known employment program.⁵³

As active labor market measures became available, notably in the late 1990s and early 2000s, job re-training was not very popular as it did not relate to job availability. In addition, it was common for redundant miners to reject available jobs because of a loss of status or pay scale and a continued expectation of a return to former pay levels. Potential employers and job placement specialists reported that many former coal workers (particularly those above the age of 40) are not inclined to pursue active job-search strategies, such as retraining or labor migration.⁵²

The Ministry of Labor and Social Policy (MOLSP) directed a majority (53%) of its LRP funds to mining regions for public works projects. The results of the LRP program were evaluated through a 2002 net impact study.⁵⁴ The overall conclusion was that the LRP had a positive impact on employment and incomes. Employment-related services proved to be the most efficient, with the fastest results for participants. Training and retraining activities increased the probability of long-term employment by 12%. While public works employment temporarily lessened local discontent (with the obvious benefits of improving local roads, infrastructure and environmental clean-up), the net impact study found that public works were the least efficient active labor market measure in terms of high unit cost and low rate of long-term employment probability. LRP participation, unit cost, and placement rate data are provided in Annex C.

⁵² Ibid.: 32.

⁵³ Ibid.: 33.

⁵⁴ World Bank, *Implementation Completion Report (CPL-38490) on a Loan in the amount of US\$55 Million to Romania for an Employment & Social Protection Project (ESPP)*, Report No. 28935-RO, (Washington: World Bank, 4 June 2004): 9.

The Government incorporated into unemployment legislation all LRPs active measures programs, financing these as regular activities from the National Agency for Employment's (NAE) budget.

Under the Mine Closure and Social Mitigation Project (MCSMP) during 1996 – 2004, the World Bank and United Kingdom Department for International Development (DFID) helped the Government fund a long-term social mitigation strategy that consisted of:

- Micro credit schemes
- Worker centers using facilities at closed mines
- Enterprise support program
- Employment and Training Incentive Scheme (ETIS)
- Public information centers and social dialogue activities, including the establishment of community boards

Job creation activities were expected to create 25,000 jobs,⁵⁵ and the ETIS 10,000. Because demand for professional retraining was limited, financial incentives were provided to potential employers to hire and retrain unskilled workers.⁵⁶ The ETIS also broadened its scope of eligibility from redundant miners to all unemployed job seekers from mining communities.

In June 2002, Decision 646 approved the Socio-Economic Development Strategy for the Jiu Valley Coal Mining Area to:

- Improve private sector development
- Improve living conditions
- Improve the environment and infrastructure
- Develop a tourism sector
- Create workforce training
- Tap local agricultural, forestry and fish resources
- Provide young people with viable alternative livelihoods
- Attract private sector investment
- Restore the National Hard Coal Company to operating condition⁵⁷

A list of selected donor activities related to coal sector restructuring is included as Annex D.

Key Labor Provisions: Romania

Collective Agreements	●
Union Representation	●
Early Warning of Lay-off	●
Planning Committees (company)	●
Community Planning	●
Migration Program	●
Social Insurance	●
Pensions	●
Health Insurance	●
Severances	●
Wait-Listing	●
Early Retirement	●
Forced Retirement	
Voluntary Retirement	●
Hiring Freeze	
One-Time Financial Compensation	●
Retraining	●
Alternative Employment	●
Vocational Training	●
Social Programs	●
Health and Safety	●
Medical Care	●
Inspections	●
Safety Gear	●
Hazardous Work Compensation	●
Meals	●
Environmental Protection	●

⁵⁵ World Bank, *PAD Mine Closure, Environmental and Socio-Economic Regeneration Project*, 2004: 6.

⁵⁶ *Ibid.*: 6.

⁵⁷ Dan Chiaburu and Victor Chiaburu, "Regional Development in a Romania Mono-industrial Area: Strategy Implementation and Stakeholder Analysis." *South-East Europe Review* (2/2003), 101-124: 111.

VII. LABOR LAWS AND REGULATIONS

Collective Agreements (CA)

For the Romania coal sector, employment policies and terms (such as base salaries and additional remuneration) are governed by CAs. Specific provisions are negotiated separately for the mine and energy sector. The mining and geology sector's CA establishes the base salary at 1.5 times the country-level minimum salary. Open pit miner base pay is increased for length of service, dangerous working conditions, and shift work. Underground workers receive an additional 5%. Miners also receive free transportation, meals, and eight tons of coal per year. According to AZM statistics, the average wage in the mining industry is about \$3,000 a year. (Annex F summarizes the benefits and payments negotiated for 2004 – 2007 for the mining and geology sector.)

Stand-By Pay

Employees receive 50-70% of base pay plus length of service increases for up to two years while waiting to receive a job within the company, be transferred to another company, or retire. During this period, employees are required to participate in employer-sponsored training programs to preserve stand-by pay.

Labor Unions

A combination of coal-specific mining and national union structures have been, and continue to be, in place in Romania. Today, union membership is voluntary, but most coal miners are members. In Romania, there are more than 20 unions. Each mine has its own union organization, divided by functional sectors:

- **Federation of Mining Unions of Valea Jiului** (Federația Sindicatelor Miniere din Valea Jiului) represents the miners in the Jiu Valley.
- **Mining Union of Oltenia** (Uniunea Sindicatelor Minerii Oltenia) acts as an umbrella organization for coal miners in the region and is part of the Confederation of Romanian Mining Unions. Represents 2,427 members from EMC Jilt.
- **Sindicatul Energia Turceni** is an independent union for the Turceni power plant. Represents 2,211 members (1,307 from Electrocentrale Turceni; 904 from Termoserve Turceni SA).⁵⁸

Pensions

Pension Law 19/2000 sets the standard retirement age at 60 years for women and 65 for men after a minimum fifteen-year contribution period. The full contribution period for women is 30 years and 35 for men. Under the CLBA for the mining sector, employees may retire at 45 years of age with 20 years cumulative service. Employees who retire early receive an indemnification equal to six month's base pay and the cash equivalent of two tons of coal.

Severance Payments

Under the current Mine Closure, Environmental and Socio-Economic Regeneration Project funded by the World Bank, the Ministry of Economy will provide redundant workers with severances equal to the 22- to 24-month payments provided for all downsizing sectors. In addition, mine workers will receive a one-time payment equivalent to \$4,545 per worker.⁵⁹ Based on the average mining wage of about \$3,000 a year, the overall expense for severance is about \$10,545.

Migration

⁵⁸ EMG, Information Memorandum – Turceni, 2005: 221.

⁵⁹ World Bank, *PAD Mine Closure, Environmental and Socio-Economic Regeneration Project*, 2004: 20.

While Romania coal restructuring provided no dedicated entitlement for migration, the high payment and wages available to coal workers resulted in a greater financial ability to migrate at a time when other economic sector workers could not afford to relocate. Most of Romania's mining locations are isolated and offer few alternative prospects for employment to mining. To address this reality, a 2003 law offered grants equivalent to twice the minimum wage to workers commuting more than 50km from home. If the unemployed worker moved more than 50km to live closer to a job, the grant is worth seven times the minimum wage.⁶⁰ By 2004, approximately 16% of the workforce from mining regions emigrated to other regions due to mine sector restructuring.⁶¹

SME Development Programs

Romania's business support mechanisms include:⁶²

- micro credits to individual entrepreneurs
- subsidized credits to SMEs
- technical assistance and support for business development through incubators and workspace centers
- job matching
- on-the-job subsidized job training or retraining

The law on SMEs duplicates some of the Disadvantaged Region status provisions.⁶³

Disadvantaged Region Status

With a strong and constant push from the coal workers' labor union membership, 23 of the 27 mining regions in Romania were designated as "disadvantaged" in 1998 –1999; this designation is good for 10 years. The original criteria for a region to receive this designation included:

- a registered unemployment rate greater than 25% of the national rate, or a workforce in which more than 25% had been declared redundant, or
- mining regions where mass layoffs had already occurred

The criteria have become more stringent, requiring that registered unemployment in a region be at least three times the national average. Romania's national unemployment rate during the first quarter of 2005 was 8.5%, compared to 7.1% in 2003.⁶⁴ Although unemployment in some coal-mining towns is well over the required percentage, positive regional employment trends may lessen the weight of any given community's unemployment problem and make the region ineligible for additional interventions.

⁶⁰ Haney and Shkaratan 2003: 25.

⁶¹ World Bank, *PAD Mine Closure, Environmental and Socio-Economic Regeneration Project*, 2004: 50.

⁶² Ibid.

⁶³ Ibid.

⁶⁴ European Commission 2005: 22.

VIII. SOCIAL PROGRAMS

Social Measures

Today, the Ministry of Labor, Social Solidarity and Family, the National Agency for Employment, and the mining companies are responsible for implementing social measures. This has not always been the case. Since 1998, a series of implementing agencies and approaches was used to support active and passive social measures throughout Romania's coal regions. Today, these measures include:⁶⁵

- Informing employees about current and future company plans
- Professional training to increase employment prospects
- Social protection
- Temporary works program for redundant workers
- Employer incentives to hire laid-off coal workers through retraining
- Social protection for laid-off workers who have minimal prospects for re-employment
- Social protection for families to prevent social exclusion, specifically of children from education
- Viable alternatives for youth employment

The National Authority for Youth is responsible for implementing youth education and training programs.

Community Involvement

The Ministry of Administration and Internal Affairs is responsible for ensuring connection with local authorities. Economic reconstruction measures include:⁶⁷

- Ensuring community involvement by approaching mine closure and environmental rehabilitation as a recovery of assets and lands to attract investments through community consensus
- Reusing sites, assets and lands after mine closure for alternative economic activities
- Improving living conditions, solving housing problems and rehabilitating utilities
- Improving environment and infrastructure through public works programs
- Capitalizing on local resources in agriculture, forestry, tourism and fishing
- Developing the economic environment and infrastructure to facilitate financing for new businesses and reconstruction of infrastructure
- Promoting positive images of the region to attract investments and investors
- Re-launching viable mining activities and opening economic activities in mining regions

“The ability of municipalities in mining localities to service their constituency has been exacerbated by the accumulation of tax arrears by mining companies, which has squeezed municipal budgets even further.”⁶⁶

Education Impacts

Under the World Bank and EU assistance programs, a variety of the Government of Romania's job centers and re-training initiatives were supported in the primary coal regions. Some had success, while others were more public information tools that gently indicated to coal workers that it was time to find new employment.

⁶⁵ National Agency for Development of Mining Zones (ANDZM), Official Website, <http://nad.minind.ro/>, (accessed 16 September 2006).

⁶⁶ World Bank, *PAD Mine Closure, Environmental and Socio-Economic Regeneration Project*, 2004: 30.

⁶⁷ ANDZM 2006.

As a result of diminished income and employment in mining regions, some parents are struggling to pay for school tuition, leaving their children unable to attend school on a regular basis and resulting in lower school attendance rates.⁶⁸ In addition, the secondary vocational system has not adapted to current workforce conditions, and some schools still train students for careers in mining.⁶⁹

Gender Impacts of Mine Sector Restructuring

By the end of 2002, the coal mining workforce was comprised of 14% females (13% in the lignite sector and 16% in hard coal).

One of the subcomponents of the MCESERP is a small grants scheme specifically focused on women and youth. General impacts of mine sector restructuring include the following key findings:⁷¹

- Women are significantly disadvantaged by mining sector restructuring which causes great instability and uncertainty for them, their families, and their communities.
- When men lose jobs, women are strongly affected by the changes to family income and morale.
- Homemakers often seek employment for the first time to provide a family income, resulting in dual roles for women.
- Greater emphasis must be placed on capacity-building of local communities, municipalities, and other stakeholders to engender local-level planning and priority setting.
- Seed money should be provided for human skills development and training to encourage women and youth to become involved in development activities.

The first round of layoffs was not gender neutral. In the Jiu Valley, laid off male and female workers were roughly proportional to their size in the mining labor force (17.3% females laid off out of 18% female work force). However, in Gorj County, 53% of female employees were laid off compared to 33% of the men. Overall, one-third of the women reported management pressure to accept severance.⁷⁰

A gender study found that young women show as much inclination to emigrate as men (around 70%) and are more willing than men to accept alternate employment in the private sector (34% compared to 19%). Men tend to accept alternative jobs in the mining sector or in the informal sector.⁷²

IX. COMMUNITY PROFILES – DEVA AND ROVINARI

This section provides a summary of the current economic and social conditions of the Deva and Rovinari municipalities. Experience has shown that consulting with local communities and adapting planning to local conditions strongly influences the impact of restructuring.

⁶⁸ Haney and Shkaratan 2003: 28.

⁶⁹ Ibid.

⁷⁰ World Bank 1999: 57.

⁷¹ World Bank, *PAD Mine Closure, Environmental and Socio-Economic Regeneration Project*, 2004: 31.

⁷² World Bank 1999: 57.

COMMUNITY PROFILE

Deva

COMMUNITY CHARACTERISTICS

Deva municipality, capital of Hunedoara County, is home to 69,257 people (2002 census), of whom 52% are female. Romania's world-renowned gymnastics' training center, Cetate Deva, is located here. Deva is also dominated by Citadel Hill, a nature preserve and the ruins of a medieval fortress. Deva is attempting to further diversify its economy by capitalizing on its rich history. A large-scale renovation project is under way to develop the area surrounding the citadel. Tourism, hospitality, and food services have been steadily growing in recent years, and are expected to receive a further boost from the fortress renovation. A private university of ecology and tourism was established in 1990.

BUSINESS ENVIRONMENT

The cornerstone of Deva's economy is its industrial sector, with two main areas: mining and metals. Metals and minerals include copper, gold, iron ore, lead, silver, zinc, limestone, and sand from 31 underground mines, 8 open pits, and 26 treatment facilities. Other important industries include electric power, a cement factory, a construction materials supplier, a car parts manufacturer, wood processing, construction, raw materials, light industry, and food processing. The fields around Deva grow a variety of fruits and vegetables, providing a marginal but steady contribution to the city's economy.

Structure of Deva's Local Economy	
Food	18%
Mining	21%
Construction Materials	25%
Other	9%
Textile	13%
Machinery	14%

Number of Registered Companies: 2,338	
Trade	1,331
Services	551
Manufacturing	356

Deva-Mintia Power Plant is situated southwest of Transylvania, 9 km from Deva town on the Mures River bank. During 34 years of operation, the power plant has produced 8 to 10% of the total power consumed in Romania. The main fuel is hard coal, extracted from Jiu Valley basins. The national power strategy includes the Deva facility as one for long-term operation. As such, the plant has and will continue to benefit from comprehensive rehabilitation and modernization efforts to improve operational safety and mitigate environmental damage. Deva has survived coal restructuring better than other mining towns.

COMMUNITY PROFILE: Deva, continued

EMPLOYMENT DATA

Most of the labor force is skilled in obsolete mining technology. There is a very low match between the current job skills of the labor force and the demand in the community. The hardest-to-fill jobs are low-skilled workers. School graduates do not match local employer demand.

Small and Medium Enterprises (SMEs), family businesses, and the self-employed are mainly involved in food processing, textile, furniture and transport. More than half the labor force works in trade, including supermarkets and small shops.

EMPLOYMENT BY SECTOR	
Services	24%
Construction	4%
Manufacturing	15%
Trade	54%
Agriculture	3%

UNEMPLOYMENT DATA

Unemployment statistics are available only at the Hunedoara county level. After a high in 2001 of 16.4%, the unemployment rate has declined to 7.9% as of July 2006. Youth and former miners make up the majority of the unemployed.

UNEMPLOYMENT BY AGE	
≤ 25	23%
25 - 29	23%
30 - 39	17%
40 - 49	31%
50 - 55	5%
≥ 55	1%

UNEMPLOYMENT BY EDUCATION LEVEL	
Primary	8%
Secondary	41%
Tertiary	52%

UNEMPLOYMENT SUPPORT SERVICES

A wide range of services for the unemployed are provided by the public employment service and accredited service providers, many via donor-initiated programs. These include training, retraining, job brokerage, job clubs, job fairs, and SME development support. Worker transition centers are organized and operate during mass-layoffs for a short period of time.

SME DEVELOPMENT

A number of programs are supported by the public employment service, mostly as subsidies to incentivize hiring the hard-to-place unemployed. There are also a variety of consulting services, training, and funding programs provided by various organizations funded by EU/PHARE, the County Chamber of Commerce and Cooperative Housing Foundation. According to a 2004 Human Resources Audit of Deva municipality, 46% of the surveyed companies expressed a willingness to expand current business, and 13% a willingness to develop new businesses.

COMMUNITY PROFILE: Deva, continued

Opportunities	Challenges
<ul style="list-style-type: none">• Tourism, hospitality, and food services expanding; training available in tourism.• Broad economic base; more than half of labor force works in trade• Declining unemployment• Wide range of unemployment support services available, including worker transition centers• Positive business environment supports SME growth and development; surveys indicate desire to expand existing businesses• National power strategy includes the Deva facility as one for long-term operation; extensive rehabilitation has occurred	<ul style="list-style-type: none">• Labor force is skilled in obsolete mining technology• Low match between current skills and job market demands• Attracting sustainable investment at a time when other emerging markets are presenting attractive investment opportunities

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COMMUNITY PROFILE

Rovinari

COMMUNITY CHARACTERISTICS

The town of Rovinari is 25 km southwest of the capital of Gorj County, Targu Jiu city. Rovinari was developed to host the region's mining labor force. It has no tourist attractions or recreational facilities. It is a mono-industrial community whose main activity is mining, followed by electricity production and tertiary services. Of the 13,167 inhabitants, 49.5% are female. The air, water, and soil surrounding the power plant and mines are polluted by outdated production equipment and methods and waste management practices. The municipality is experiencing harsh labor impacts while restructuring its industrial sector.

BUSINESS ENVIRONMENT

The advantages of Rovinari to the coal sector include:

- existing material resources and utilities
- existing infrastructure
- well-qualified labor force
- 50 years of coal reserves for producing electricity
- the cheapest energy production in Romania

Number of Registered Companies: 480

Trade	360
Services	74
Transport	18
Production	28

The number of registered businesses includes failed companies due to the complex, expensive process for liquidation. It is estimated that more than half of the trade businesses have failed in the last three years due to a lack of experience, sales, and capital. The remaining companies are small boutiques. Corruption and fraud have been cited as causes for the lack of interest in private investment.

Although Rovinari was designated to be a Disadvantaged Region (a status that grants investors incentives for job creation), few have expressed interest. If anything, most investors have established "virtual headquarters" in the community to take advantage of incentives, which has not led to new jobs.

The Rovinari coal-fired power plant's capacity is twice as large as any other in Romania. Because it is adjacent to coal pits, transportation costs are minimized. It was certified as an ISO 9001 facility in 2001. Restructuring strategies focus on labor reduction and plant improvements as a means to privatization. Through Romania's plan for Coal and Energy Production Modernization and Development 2004-2015, the complex is upgrading environmental safeguards, expanding production capacity, improving market positions through long-term energy delivery contracts, modernizing equipment, upgrading mining technologies, and extending quality assurance. The community's goal is to attract a strategic investor in the power plant to ensure its continued operation.

COMMUNITY PROFILE: Rovinari, continued

EMPLOYMENT DATA

Most residents work for Termoelectrica, the National Society of Lignite – Oltenia, UREX (mining machinery and maintenance), or TPSUT (transport services for the power plant and mine). The Rovinari power complex employs 3,030 in open pit and underground coal mining and 4,035 at the power plant, including 1,059 in electricity generation.

There is a lack of skilled workers for other than mining-related employment. Despite the national and local level decrease in coal sector employment, the local vocational education and training school continues to train students for the mining industry. Most of the labor force possesses mining skills that are considered obsolete. There are almost no job vacancies in Rovinari because local companies have adopted a “no hiring” policy and are downsizing their workforces through retirements.

UNEMPLOYMENT DATA

Official unemployment statistics are available only at the Gorj county level. According to these sources, the unemployment rate has declined from 14% in 1999 to 8.6% in 2006. However, the estimated unemployment rate in Rovinari is approximately 20%, increasing to 40% if long-term unemployed are included. Youth, former miners, and workers over 45 years of age make up the unemployed population.

UNEMPLOYMENT BY EDUCATION LEVEL	
Primary	8%
Secondary	41%
Tertiary	52%

UNEMPLOYMENT SUPPORT SERVICES

The Foundation for Social Dialogue has implemented three short-term, donor-funded training and retraining projects for the unemployed in the past seven years, but there are almost no opportunities for job enhancement or career changes. In addition, available support services (training, retraining, job brokerage, job clubs, job fairs, SME development support, etc.) have not been sufficiently used due to a lack of skilled, accredited local-level service providers. Service providers in Targu Jiu are not involved in serving Rovinari.

SME DEVELOPMENT

Few SME Development services are used because of the business environment. The consulting, training, and funding programs that exist are supported by the Public Employment Service, various organizations funded by EU/PHARE, the County Chamber of Commerce, the National Agency for Development of Mining Zones, and the National Agency for SMEs. Since 2000, the Annual Social Impact Monitoring Reports (developed under the World Bank’s MCSMP program) indicate a yearly decline in the quality of life in Rovinari.

COMMUNITY PROFILE: Rovinari, continued

Opportunities	Challenges
<ul style="list-style-type: none">• Coal-fired power facility is to be retained and upgraded as part of Romania's national energy development strategy (including upgrading mining and power generation equipment and technology, production capability and overall market position)• Romania's highest installed power capacity; low coal transportation costs• Disadvantaged Region status• SME development support services available	<ul style="list-style-type: none">• Mono-industrial community; lack of diversity in economic development opportunities• Negative business environment• Half of trade businesses fail from lack of experience, sales, and capital• Lack of workers skilled in trades other than mining; obsolete mining skills• Lack of alternative job opportunities• No-hiring policy at local companies• High unemployment rate; support services underutilized because of a lack of accredited providers• Comparatively small population• Area pollution; no tourism or recreational potential• Annual social impact monitoring reports indicate yearly decline in quality of life

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X. COAL AND POWER SECTOR RESTRUCTURING

COAL SECTOR

Current Trends in Coal Sector Restructuring

In 2003, the Ministry of Economy and Commerce unveiled the Strategy for Mining and Industry 2004-2010, which included the following key points:

- Develop efficient lignite open pit mining operations and close non-viable (mostly underground) mines⁷³
- Reduce/eliminate subsidies to underground mines
- Modernize Oltenia open pit lignite mine and new technologies in some hard coal mines

Elimination of Coal Sector Subsidies. As part of its accession to the EU, the Government is committed to eliminating mining subsidies by 2010. Coal production-related subsidies are to be ended by closing non-viable mines.⁷⁴ Lignite coal in Romania is currently not subsidized.

Social Protection. The mining strategy anticipates that 48,000 out of 68,000 mining jobs (including ferrous and non-ferrous minerals) will be cut⁷⁶ and provides social protection measures for those who will be made redundant by 2010.⁷⁷ **Research indicates that an estimated 18,000 – 20,000 coal workers will be needed for a viable coal sector.** This figure is supported by the findings for Mine Closure, Environmental and Socio-Economic Regeneration Project (MCESERP), which estimated that the workforce will shrink to 26,650 by 2007.⁷⁸ **A 2003 report estimated that the coal extraction workforce will number 18,000 in 2010 after restructuring,** down from 113,000 in 1997.⁷⁹

The following map shows the coal mines involved in closure projects under the Mine Closure and Social Mitigation Project (MCSMP) launched in 1997 and the MCESERP launched in 2005 and financed by the World Bank. (See Annex B for a list of mines closed under these projects.)

Status of Restructuring: Romania		
	CM	CPP
Unbundling	●	●
Producer Subsidization	◐	◐
Corporatization		
Separation of Transmission Network	-	●
Separation of Distribution Network (ISO)	-	●
Independent Regulator	-	●
Liquidation of Non-Viable Entities	◐	◐
Refurbishment	◐	◐
Commercialization		
Liberalization/Deregulation	◐	◐
Price Stabilization	◐	◐
Consumer Subsidies	◐	◐
Privatization		
Private Investors	◐	◐

CM – Coal Mines; CPP – Coal-Fired Power Plants
 Completion Status:
 ● Full ◐ Partial ○ None – Not Applicable

Number of Coal Extraction Workers ⁷⁵			
	Workforce	Reduction	Percent Reduction
Before Restructuring	113,000	-	
By 2001	46,000	67,000	(71 %)
Remaining		28,000	
Projected After Restructuring	18,000	95,000	(84%)

⁷³ Ministry of Economy and Commerce, *Road Map for Energy Sector Reform in Romania, July 2003-2015* (Bucharest: Ministry of Economy and Commerce, July 2003): 8, <http://www.seenergy.org>.

⁷⁴ World Bank, *PAD Mine Closure, Environmental and Socio-Economic Regeneration Project*, 2004: 6.

⁷⁵ Haney and Shkaratan 2003: 4.

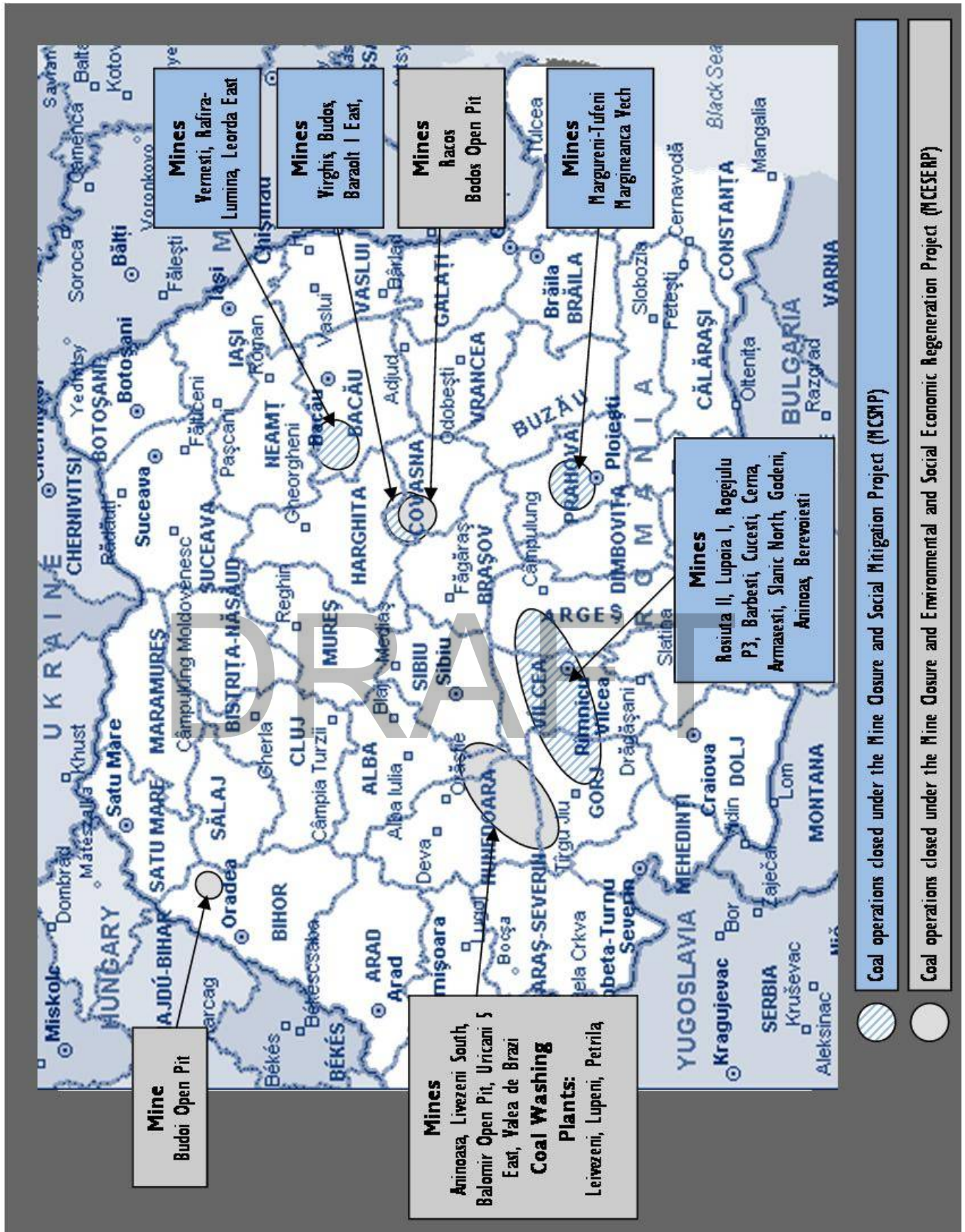
⁷⁶ Ministry of Economy and Commerce 2004.

⁷⁷ Ibid.

⁷⁸ World Bank, *PAD Mine Closure, Environmental and Socio-Economic Regeneration Project*, 2004: 50.

⁷⁹ Haney and Shkaratan 2003: 4.

Romanian Coal Mines Closed under the MCSMP and MSEERP



Under the MSESERP strategy, social assistance will be provided by the government for the most disadvantaged groups (low-income elderly, disabled, older people with fewer training and employment options, and children). The strategy is based on certain premises about coal workers:

- 15,000 will receive supplementary incomes
- 9,000 will retire
- 21,000 will find new employment
- 15,000 chronically unemployed will receive compensatory wages
- 3,000 will start their own businesses

Infrastructure development projects are expected to create approximately 31,500 new jobs in the medium term, of which 17,000 will be temporary jobs lasting two to three years. Trade unions have given a little response to the strategy, with many miners already seeking to leave the industry.

The Strategy for Mining and Industry 2004-2010 has drawn on experience from previous restructuring activities and built in measures for community-generated planning for social protection and economic development strategies through local councils. Local councils will develop social protection strategies tailored to the specific realities of the mine and local conditions.

Green and grey field development areas will be made available following mine closures in Motru, Berbesti, Dragotesti, Vulcan, Lupeni, Livezeni, Anina, Borsa, Suior, Brad, Ghelesi, Filipestii de Padure, Balan, Zlatna, Baia de Aries si Moldova Noua.⁸⁰

Implementation of the strategy will require more than \$2.2 billion (\$1.2 billion between 2004 and 2006). The Ministry of Economy and Commerce is leading implementation in consultation with other relevant national and local authorities, mining companies, local community representatives, NGOs and disadvantaged groups.

The impact of the restructuring of Romania's power sector has had direct implications for how and if the Romanian coal sector would carry on in certain key coal mining regions.

POWER SECTOR

Institutional Arrangements

In 1995, the World Bank approved the Power Sector Rehabilitation and Modernization (PSRM) loan to help the Romanian government transform the state power company, RENEL. PSRM anticipated that coal-fired power generation would provide nearly 33% of electricity production in Romania by 2015.

In 1998, Romanian Electricity Authority (RENEL), the state-owned horizontally integrated production, transmission, and distribution company for electricity and thermal energy, was unbundled to create the:

1. National Electric Company (CONEL)
2. National Energy Regulatory Agency.

⁸⁰ Ministry of Economy and Commerce 2004.

In 2000, CONEL was split into four separate entities, which operate as joint stock companies:

1. Termoelectrica oversees thermal power generation
2. Hidroelectrica oversees hydro power generation
3. Transeletrica oversees transmission and load dispatch
4. Electrica oversees distribution, including regional distribution companies

Average Electricity Generation (1998-2002)⁸¹

Electricity Generation (GWh)	52.988
From Hydro	31.3%
From Nuclear	10.2%
From Natural Gas	16.9%
From Oil	7.7%
From Coal	33.9%

In addition, CONEL's 6 repair service units and 12 maintenance units were divested and now operate independently of the power generation plants through contracts.

Restructuring of Termoelectrica

This section focuses on *Termoelectrica* and its coal-fired power plants and coal mines, all of which have undergone various reorganizations.

TERMOELECTRICA FACTS:⁸²

Energy Power complexes: 34.8% coal-fired; 65.2% hydrocarbon
 Installed Power Generation: 38% co-generation; 62% condensation
 Total power generated: 5,716 GWh (1,800 GWh Lignite; 3.9 GWh Hydrocarbons)
 Structure Includes: 5 branches (including revaluation branch); 12 repair/maintenance services subsidiaries

Termoelectrica continues to suffer from wide-spread bill arrears as production costs surpass regulated consumer prices.

In 2004, in order to create cost centers and prepare for privatization, the government created three vertically integrated power complexes by linking power plants from Termoelectrica with supplier coal mines from the National Lignite Society – Oltenia. These power complexes are located in areas where the majority of employment opportunities are from power plants and coal mining.⁸³

1. Power Complex Turceni
2. Power Complex Rovinari
3. Power Complex Craiova

These power complexes, along with the thermal power plants belonging to Electrocentrale Deva-Mintia, have been designated as viable generation plants. As such, they have been targeted by the government for rehabilitation and upgrading to improve efficiency and reduce noxious emissions.

⁸¹ World Bank Group. Europe Central Asia Data Depository. Romania 2004 Statistics, <http://cancakmak.com/ECADATA/worldbank/Faq.aspx20.htm>, (accessed 23 January 2006).

⁸² Ministry of Economy and Commerce 2005.

⁸³ Emerging Markets Group, *Privatization, Investment and Development of Energy Program (PRIDE)*, (Washington: USAID, 2005).

Termoelectrica also includes three power generation units that are not linked to coal mines, use multiple fuels, and are not targeted for privatization:

1. **Electrocentrale Deva-Mintia.** Located near Deva, the power plant includes the Deva-Mintia TPP. Unit 3 of the power plant was rehabilitated under the Power Sector Rehabilitation and Modernization Project funded by the World Bank. The workforce decreased by 400 between 1997 and 2004.⁸⁴
2. **Electrocentrale Bucharesti.** Operates as a joint stock company, generating 6,305 MWh from oil and natural gas.⁸⁵ The company has three branches:
 - i. Bucharesti (1,108 MW)
 - ii. Constanta (100 MW)
 - iii. Mures (800MW)
3. **Electrocentrale Galati** (decommissioned in 2003)



Deva-Mintia Power Plant

Closure of Power Plants

According to Government estimates, after 2010, the share of coal-generated electricity will decrease from 33.9% to about 15%, primarily due to the retirement of obsolete coal-fired power plant units. Annex E details the planned power plant closure program if proposed EU-PHARE assistance is secured.

The Government of Romania estimates that during 2000 to 2010, approximately 20 million tons a year of lignite coal will be required to produce electricity and heat. The 2004 coal production level was 19.9 million tons. Annual hard coal production will be limited to 3.5 million tons with nuclear and hydro energy partially covering domestic energy needs.⁸⁶ The following chart shows the past and planned GWh proportion for lignite and hard coal from 2003 – 2015.

Base Scenario: Gross Electricity Production Structure (2003 – 2015 Period)⁸⁷					
GWh	2003	2004	2005	2010	2015
TOTAL*	56,100	59,300	60,100	64,900	72,900
Thermal power plants	33,720	36,960	37,760	37,020	38,880
Lignite	17,300	17,500	17,800	18,000	18,000
Hard coal	5,290	5,530	5,530	5,930	5,930

*Includes Hidroelectricas exports of 3,000 GWh/year until 2005.

⁸⁴ World Bank, *Implementation Completion Report (CPL-39360 CPL-3936D) for a Power Sector Rehabilitation and Modernization Project.*, Report No. 30382-RO. (Washington: World Bank, 19 January 2005): 5.

⁸⁵ Electrocentrale Bucharesti, SA (Elcen), Official Website, 2004 Statistics, <http://www.elcen.ro>, (accessed 12 April 2006).

⁸⁶ Ministry of Economy and Commerce 2003.

⁸⁷ Ibid.

INVESTMENT PRIORITIES

Investments made in the coal and power sector operations have decreased compared to previous years. Required funds for Termoelectrica are estimated at RON 45million (\$16 million) from foreign loans. For CFPP Paroseni Unit 4, RON 62million (\$22.1million) has been allotted from the State budget to reimburse interests and fees for rehabilitation.

Sector Opportunities	Sector Challenges
<ul style="list-style-type: none">• Restructuring of the coal and power sectors is moving forward beyond what was envisioned, with full Government commitment.• Privatization of coal and power assets has crossed a critical threshold and is moving faster.• Progress towards creating a market-friendly private sector-oriented economy has been considerable.• European Union accession drove government commitment to continue difficult mass layoffs and mine closures.• Lignite coal sector has been liberalized, receives no subsidy, and is sold at world market prices.	<ul style="list-style-type: none">• The share of coal-generated electricity will decrease from nearly 34% to 15% after 2010.• 28,000 coal mining jobs remain to be eliminated• Foreign investment has decreased.• There is a need to upgrade coal mine and power plant operating facilities.• It is expected that coal's importance as a primary fuel source for electricity production will decrease.

PRIVATIZATION

Macro-economic requirements and pressures.

The Government of Romania is working to meet IMF and EU requirements by privatizing energy assets. Plans include:

- A 2004 agreement to sell majority stakes in regional power distributors Electrica Dobregea and Electrica Banat to Italy's Enel, which pledged to invest \$1 billion over 20 years⁸⁸
- A 2005 plan to sell a 24.6% stake in power distributors Electrica Moldova to Germany's E.ON and Electrica Oltenia to the Czech Republic's CEZ. Each is required to take a majority stake through a capital share increase.⁸⁹
- In 2006, privatization of 51% of shares of Turceni Power Complex
- In 2007, privatization of Rovinari and Craiova Power Complexes
- Rehabilitation of lignite or hard coal-powered generation units at Turceni, Rovinari, Isalnita and Deva-Mintia., which would represent 35-45% of the total new power generation capacity needed⁹⁰
- Environmental rehabilitation (to meet the required 10% of estimated total investment)

The Ministry of Economy and Commerce has recommended that the government write off more than €1.2 billion in assets and consolidate the remaining assets of Termoelectrica with Hidroelectrica.⁹¹ Proposed coal-fired plant investment in Termoelectrica includes:

⁸⁸ Energy Information Administration (EIA), *Country Analysis Brief: Southeastern Europe* (Washington: US Department of Energy, 2005), <http://www.eia.doe.gov/emeu/cabs/seeurope.html> (accessed 29 February 2005).

⁸⁹ Ibid.

⁹⁰ Ministry of Economy and Commerce 2003.

- Rehabilitation of up to three of the hard coal groups at Deva-Mintia
- Greenfield lignite unit at Borzesti
- Greenfield lignite unit at Doicesti
- Greenfield lignite unit at Paroseni

XI. LESSONS LEARNED IN WORKFORCE RESTRUCTURING

This section highlights important lessons learned from Romania's coal and power sector restructuring over the last fifteen years (as compiled by the World Bank from the Power Sector Rehabilitation and Modernization Project, Mine Closure and Social Mitigation Project, and the Labor Redeployment Program). Additional lessons learned about coal and power sector restructuring are in Annex H.

Power Sector Rehabilitation and Modernization Project (World Bank)⁹²

- **Restructuring the power sector is a time-consuming process:** In Romania, the coal sector restructuring process commenced in 1998, although the first few years of implementation was much slower than expected. Unbundling and setting up new corporate entities take time and sustained efforts on the part of the Bank and the Government. Even with a positive and consistent government commitment, allocation of assets and liabilities and the potential for unforeseen delays can make restructuring a long process.
- **Well-functioning regulatory framework/agency facilitates reform:** The establishment and evolution of the National Electric and Heat Regulator (ANRE) into a well-functioning power and gas regulatory agency was very instrumental in supporting sector reform. ANRE's staff is of high caliber and well-respected in the profession. They have helped to develop the broader consensus for resolving many sectoral issues, especially on tariffs.
- **Sector-macro synergy can be strong stimuli for reform:** The European Union accession goals – specifically with respect to power sector reform – provided significant momentum. World Bank and USAID assistance helped to create the enabling framework that was combined with macro and policy reforms supported by Government. The World Bank, the IMF, and various donors helped to ensure that the strategy for reform could be sustained.

⁹¹ *Romanian Business Digest*, (Bucharest: International Business Promotion SRL, September 2006), http://rbd.doingbusiness.ro/cet_electricity_sept06.htm.

⁹² World Bank 2005: 14-15.

Mine Closure, and Social Mitigation Project (World Bank)⁹³

The first policy response should be to scale up well targeted activities. Even with MCSMP project achieving its target of 10,000 jobs, the cumulative impact on the mining regions will be modest since the total layoffs from the mining sector alone are 120,000, with twice as many suffering from second order impacts.⁹⁴

- **Restructuring plans require community involvement and capacity building:** Restructuring an industry in a mono-industrial town impacts all community members through loss of purchasing power, tax arrears, change in social and economic status, and increased demands on social services. Local conditions must be considered in designing a restructuring plan. Community capacity-building should be among the first steps to prepare and plan for closure or downsizing.
- **Labor redeployment should be targeted to all job seekers and job placement should be linked with professional retraining and employer incentives:** Programs targeting miners alone have been less effective than programs targeting all job-seekers in a community. Linking job placement with retraining and employer incentives has generated better long-term employment opportunities for unemployed workers.

“In many instances, spouses and children of former miners were more enthusiastic job seekers. Those suffering from indirect effects of mine restructuring were also keen to be rehabilitated.”⁹⁵
- **Severance payments will not spur business development without support mechanisms:** Severance payments were meant to spur local business development and migration.⁹⁶ Neither occurred in large numbers. Severance payments did not spur local entrepreneurship or SME development because support mechanisms were not available to help redundant workers overcome a steep learning curve and establish viable enterprises. Most severance packages were exhausted within two years, with no other opportunities for employment.
- **Migration incentives targeted to miners were less effective:** Migration of miners back to native regions did not occur to the extent expected. Miners and family members who did return to native regions did not find housing or job opportunities and frequently came back to their mining communities. This further strained social service and unemployment providers in mining regions.⁹⁷

Successful migration tended to be by young men and women willing to change career paths. This led to an imbalance of community demographics and division among families.⁹⁸

⁹³World Bank 1999: 35-36.

⁹⁴ World Bank, PAD Mine Closure, Environmental and Socio-Economic Regeneration Project, 2004: 32.

⁹⁵ Ibid.: 32.

⁹⁶ Haney and Shkaratan 2003: 18.

⁹⁷ Ibid.

⁹⁸ Ibid.: 2.

- **Acceptance rate of voluntary severance programs was underestimated:** Under the first wave of restructuring in 1997–1998, severance payments to redundant workers equaled 12 to 20 times the median salaries, depending on years of service. This policy caused voluntary redundancy at two to three times the scale planned for by the trade unions and the government. Consequently, restructuring funds were exhausted by 1999 and the cash amount of severance payments was reduced.
- **SME development programs overestimated the impact on mining unemployment:** Small business owners were not inclined to hire former miners, resulting in less impact on unemployment. Infrastructure supporting SME development was lacking. Taxes on small businesses were excessive and prohibitive to growth. Entrepreneurs lacked access to capital for investments.
- **Sustained political and institutional support is essential:** Short-term funding and support is not enough to sustain positive changes in mining communities. Consistent and broad-based political and institutional support is crucial for the successful implementation of restructuring programs. Projects should be well-planned, with sound management and financial strategies.
- **Restructuring plans must also consider workforce, community and social impact:** Decisions were made based mainly on economic conditions and failed to consider the impact of restructuring on the workforce, the broader community and social programs.

Creation of jobs cannot be achieved simply through active labor market measures; support to individual job-seekers needs to be complemented by support for investments in local development for community mobilization, economic infrastructure and social services.⁹⁹

- **Socio-economic regeneration requires long-term commitment:** Mine closure activities tend to support local economies for short periods of time. Long-term socio-economic regeneration takes 10 to 15 years.

Labor Redeployment Program (World Bank)¹⁰⁰

- **High-level government support is essential to withstand opposition:** Miners were well-organized through powerful unions. Strikes disrupted economic activities. Government commitment at the highest level will ensure that implementing agencies have the strong support needed to withstand opposition.
- **Adequate funding and effective transfer mechanisms are required for social mitigation programs:** Restructuring programs must have adequate funds to address compensation and social mitigation programs for redundant miners. These programs are often more costly than physical mine closures. Lack of funds and ineffective transfer mechanisms can cause delays in implementation and eventual project failure.
- **Implementing agency staff need government support and must be respected professionals:** Restructuring requires experienced and respected professionals who can face

⁹⁹ World Bank, PAD Mine Closure, Environmental and Socio-Economic Regeneration Project, 2004: 32.

¹⁰⁰ World Bank 1999: 17.

implementation difficulties with sensitivity. Agency staff must inspire confidence from miners, trade unions, and local authorities, and must have full government support.

- **Technical capacity of local organizations must be developed:** The Labor Redeployment Program (LRP) demonstrated the value of local organizational capacity in making nationwide programs effective. This played a significant factor in alleviating the crisis in mining regions.
- **Specialized agencies are essential for successful micro-credit programs:** The formal banking sector is not equipped to administer micro-credit programs. Specialized agencies with outreach capacity and technical skills function better. Public agencies can play a more useful role as program monitors or supervisors.
- **Regular social impact monitoring is needed to adapt program strategies to changing conditions:** Social mitigation projects require flexibility in design to adapt to local conditions. Regular social impact monitoring and intensive program supervision is essential.
- **Restructuring programs must be comprehensive and integrated:** A broad foundation for sustainable transformation requires the reforming of legal, institutional, social, environmental, and enterprise frameworks, often simultaneously. An integrated approach will establish a positive international profile that attracts private investment.

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ANNEX A
COAL-FIRED POWER PLANTS

Coal-Fired Power Plants In 1996¹⁰¹			
Plant	Installed Capacity (MW)	Type of Coal	Year Built
Craiova	240	Brown/Lignite	1987
Insalnita 1	630	Brown/Lignite	1975
Insalnita 2	200	Brown/Lignite	1975
Insalnita 3	205	Brown/Lignite	1975
Turceni	2310	Brown/Lignite	1978
Rovinari 1	1320	Brown/Lignite	1976
Rovinari 2	400	Brown/Lignite	1976
Mintia	1260	Hard	1975
Doicesti 1	400	Brown/Lignite	1967
Doicesti 2	120	Brown/Lignite	1983
Giurgiu	150	Brown/Lignite	1983
Novidari	50	Hard	1983
Brasov	50	Brown/Lignite	1992
Govora	100	Brown/Lignite	1985
Suceava	100	Brown/Lignite	1985
Zalau	500	Hard	N/A
Oradea 1A	150	Brown/Lignite	1965
Oradea 1B	150	Brown/Lignite	1965
Oradea 2	150	Brown/Lignite	1965
Borzesti 2	150	Brown/Lignite	1957
Paroseni	150	Hard	1956
Paroseni	150	Hard	1964
Iasi 2	100	Brown/Lignite	1965

¹⁰¹ Stockholm Environment Institute, *The European Fossil-Fueled Power Station Database Used in the SEI CASM Model*, (York: SEI 1996): A-14.

ANNEX B COAL MINE CLOSURES

Location	Name of Mine	Type of Coal	Year Activity Ceased	Donor Project	Number of Employees (Available Data)
CNLO Oltenia Tg. Jiu					
Gorj	Rosiuta II	Lignite	1997	MCSMP	
	Lupoia I	Lignite	1997	MCSMP	
	Rogejulu P3	Lignite	Pre-1997	MCSMP	
Valcea	Barbesti	Lignite	Pre-1997	MCSMP	
	Cucesti	Lignite	Pre-1997	MCSMP	
	Cerna	Lignite	Pre-1997	MCSMP	
	Armasesti	Lignite	1997	MCSMP	
Arges	Slanic North	Lignite	Pre-1997	MCSMP	
	Slanic South	Lignite	Pre-1997	MCSMP	
	Godeni	Lignite	Pre-1997	MCSMP	
	Aninoas	Lignite	Pre-1997	MCSMP	
	Berevoiesti	Lignite		MCSMP	
SNC Ploiesti					
Bacau	Vernesti	Brown	1997	MCSMP	
	Rafira-Lumina	Brown	1997	MCSMP	
	Leorda East	Brown	1997	MCSMP	
Covasna	Virghis	Lignite	Pre-1997	MCSMP	
	Bodos	Lignite	1997	MCSMP	
	Baraolt I East	Lignite	Pre-1997	MCSMP	
	Bodos Open Pit	Lignite	2004	MCESER	
	Racos Pit Mine and Briquetting Plant	Lignite	1999	MCESER	
	Bihar	Budoi Sat Pit and Briquetting Plant	Lignite	2003	MCESER
Prahova	Magureni-Tufeni	Lignite	Pre-1997	MCSMP	
	Margineanca Veche	Lignite	1997	MCSMP	
CNH Petrosani					
Hunedoara	Aninoasa	Hard	2004	MCESER	1,156 (1044 mine workers) ¹⁰²
	Iscroni (Livezeni Sud)	Hard	2001	MCESER	
	Valea de Brazi	Hard	2003	MCESER	1,002 ¹⁰³
	Balomir Open Pit	Hard	2001	MCESER	
	Uricani	Hard	1998/ 2001 (Pit 5)	MCESER	964 ¹⁰⁴
	Lupeni	Hard	1997		3074 ¹⁰⁵
	Barbateni	Hard	1997		Included with Lupeni
	Dilja	Hard	2006		207 ¹⁰⁶
	Campu lui Neag	Hard	1997		152 (from 790). ¹⁰⁷

¹⁰² Jiu Valley Portal, (2001) <http://www.avj.ro> accessed (accessed 28 September 2006).

¹⁰³ Ibid.

¹⁰⁴ Ibid.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid.

Location	Name of Mine	Type of Coal	Year Activity Ceased	Donor Project	Number of Employees (Available Data)
Auxiliary Services					
Hunedoara	Livezeni Coal Washing Plant	Hard coal	1990	MCESER	
	Lupeni Coal Washing Plant	Hard coal	2004	MCESER	
	Petrila Coal Washing Plant	Hard coal	2003	MCESER	639 ¹⁰⁸
	Uricani Coal Washing Plant	Hard coal	1990	MCESER	

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¹⁰⁷ John B. Gongwer, *Renaissance Program Strategic Plan 2000*, Appendix B Background/White Paper on Renaissance with 2006 statistical updates, (2001), Jiu Valley Portal, <http://www.avj.ro> accessed (accessed 28 September 2006)

¹⁰⁸ Jiu Valley Portal 2001.

ANNEX C
 LABOR REDEPLOYMENT PROGRAM,
 WORLD BANK EMPLOYMENT AND SOCIAL PROTECTION PROGRAM
 PROGRAM PERFORMANCE DATA 2003

INDICATOR	1997 PROJECTION	2003 ACTUAL		
Participation	80,000	92,223		
		ACTIVITY	PARTICIPANTS	FUNDING
		Institutional Training	5,913	8.0%
		On-the Job Training	351	.8%
		SME Assistance	30,815	17.4%
		Pubic Works	13,240	52.8%
		Employment Services	41,736	13.4%
		Business Incubators	168	4.5%
		LED Planning	38 Communities	3.1%
Unit Cost	\$400	\$104		
Placement Rates	40%	69.8%		

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ANNEX D

SELECTED DONOR FUNDED ACTIVITIES IN COAL SECTOR RESTRUCTURING

Donor Funded Activities				
ACTIVITY	STATUS	DONOR	YEAR	AMOUNT
<p>Employment & Social Protection Project Establish a fully functional National Agency for Employment:</p> <ul style="list-style-type: none"> - General Management and Policy – monitoring and policy analysis, automation, project management - Employment and Training – employment services including Labor Redeployment Program, career information and counseling, adult training - Social Protection – social insurance and social assistance reforms 	Completed	World Bank	1995-2003	\$55.4 m
<p>Labor Redeployment Program Included local economic development planning and active labor market measures for workers displaced by industrial and agricultural structural reforms initiated under the Finance and Enterprise Structural Adjustment Loan (FESAL) and Agricultural Structural Adjustment Loan (ASAL) programs.</p>		World Bank USAID (LED Component)	1997-2002	(\$10.5m)
<p>Social Sector Development Improve labor markets, SME support, Social Risk Mitigation, Poverty Strategy, analysis and monitoring. The project was restructured to reallocate funds from the Labor Redeployment Program to other activities because the National Agency for Employment had sufficient funds for active labor market policies.</p>	Completed	World Bank	2001-2006	\$50 m
<p>Power Sector Rehabilitation and Modernization Project (PSRMP) Power sector reform, RENEL corporate restructuring program. Thermal power plant rehabilitation included Bucharest South 3&4, Braila Unit 2, Deva Unit 3. RENEL resources rehabilitated Brazi Unit 1a and converted Suceava and Iasi from lignite to coal.</p>	Completed	Multiple	1996-2004	WB- \$76.5m, EBRD- €54.4m (\$68.5m), EIB - €27m (\$34m), USAID - \$2.9m, EU- PHARE - \$3.6m
<p>Mine Closure and Social Mitigation Project Assisted with technical closure of 174 mines and final closure of 29 (20 coal and 9 non-ferrous) underground non-viable mines, increased institutional capacity of NAD and service providers to support the unemployed through employment promotion activities.</p>	Completed	World Bank	1996-2004	\$44.5 m
<p>Energy Sector Liberalization Building on Energy Program (RO 9504) and Energy Sector Liberalization (RO 0005.01) projects, consolidated and strengthened electricity regulatory authority, privatization of regional electricity companies, assisted in creating independent</p>	Completed	EU-PHARE	2002-2004	€28.9m (\$36.4m)

Donor Funded Activities

ACTIVITY	STATUS	DONOR	YEAR	AMOUNT
power transmission company and a commercial market operator, and supported program toward joining European electricity network.				
EU-PHARE PROJECTS <ul style="list-style-type: none"> • Social Services Development (RO 9209.03 and RO 9305.02) • Vocational Education and Training (RO 9405) • SME Support (1992, 1994, 1997) • Human Resources Development (RO 9701.01) • Regional Policy and Cohesion (RO 9807.01) • Enterprise Restructuring and Employment Conversion (RO 9904) • National Action Plan for Employment (RO 9908.01) 	Completed	EU-PHARE	1993 – 2000	
Regional SME Development Support (RO 0007.02) Supported industrial restructuring through employment and training programs, assistance to SMEs, improved local and regional infrastructure, and social inclusion of disadvantaged groups.	Completed	EU-PHARE	2002-2004	€75m (\$94.5m)
EU/EBRD SME Finance Facility Finance SMEs	Completed	EBRD	1999-2005	€193.75m (\$244.1m)
US/EBRD SME Finance Facility Finance SMEs	Completed	EBRD	2002-2003	€11.23m (\$14.1m)
Privatization, Investment and Development of Energy Program (PRIDE) Provided technical assistance to support transfer of energy sector public assets to private ownership, reformed legal and regulatory environment, improved utilities competitiveness, increased efficiency of energy consumption.	Completed	USAID	2003-2005	
Romanian Energy Program, Phase III (REP3) Provide technical assistance to implement a social safety net program to mitigate adverse impacts of increasing energy prices and to support Black Sea regional energy market.	Active	USAID	2005-2007	
Mine Closure, Environmental and Socio-Economic Regeneration Project Complete closure and rehab of non-viable mines and ancillary facilities, return land to other social/economic purposes, improve mining environmental performance. Strengthen AZM/NAD, local communities' and other agencies' capacities for community-based planning and implementing socio-economic regeneration programs in mining regions.	Active	World Bank	2005-2010	\$120m
Energy Community of South East Europe Program		World Bank		\$ 84m \$126m \$125m
APL 1 APL 4 APL 5				
Enterprise Development and Strengthening (EDS) Facilitate growth and development of micro, small and medium enterprises by providing access to credit, capital, and investment finance through NGO-based lending and creation of a Microfinance Coalition.	Active	USAID	2002-2007	

Donor Funded Activities

ACTIVITY	STATUS	DONOR	YEAR	AMOUNT
<u>Romanian-American Enterprise Fund (RAEF)</u> Run investment and loan programs, raise additional funds from private and public sources for investment in private sector. Match U.S. companies with Romanian companies to support U.S. trade and investment.	Active	USAID	1994-2009	
<u>Thermal Energy Conservation Project</u> Restructuring and modernization of district heating network and introduction of affordable cost-reflective pricing.	Closed	EBRD	1997	€37.6m (\$47.4m)
<u>Power Sector Operational Termoelectrica Efficiency Improvement</u> Upgrade 5CHP generation plants and transmission networks and install metering equipment.	Closed	EBRD	1995	€114.67m (\$144.5m)

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ANNEX E: THERMAL UNIT RETIREMENT

The planned power plant closure program outlined below will depend on securing EU/Phare assistance.¹⁰⁹

Thermal power units retirement evolution – existing units on 01.01.2003 (based on the unit rehabilitation plans and the unit life time expiration) - MW -												
	2004	2005	Total 2003- 2005	Total 2006- 2010	Total 2011- 2015	Total 2003- 2015	2004	2005	Total 2003- 2005	Total 2006- 2010	Total 2011- 2015	Total 2003- 2015
	Installed power						Available power					
Total	720	560	1280	2185	0	3465	603	512	1115	1912	0	3027
I. Lignite	200	0	200	1835	0	2035	160	0	160	1578	0	1738
I.1. Condensing	200		200	1835		2035	160		160	1578		1738
- Turceni - unit 1, 7				2x330		660				1x284 x280		564
- Rovinari - unit 4, 6				2x330		990				1x28 1x277		564
- Isalnita - unit 8				1x315		315				1x290		290
- Doicești - unit 7, 8	1x200		200	1x200		400	1x160		160	1x160		320
I.2. cogeneration												
2.Hard coal	210	210	420	100	0	520	175	175	350	89	0	439
2.1. Condensing	210	210	420			420	175	175	350			350
- Deva - unit 4, 2	1x210	1x210	420			420	1x175	1x175	350			350
2.2. Cogeneration				100		100				89		89
- Paroseni - unit 1, 2				2x50		100				2x44.5		89
3.Hydrocarbons	310	350	660	250	0	910	268	337	605	245	0	850
3.1. Condensing	310		310			310	268		268			268
- Ludus - unit 3	1x100		100			100	1x95		95			95
- Borzesti - unit 8	1x210		210			210	1x173		173			173
3.2. Cogeneration		350	350	250		600		337	337	245		582
- Grozavesti - unit 1, 2		2x50	100			100		2x44.2	88			88
- Bucuresti Sud - unit 5, 6		1x125	125	1x125		250		1x123	123	1x123		246
- Bucuresti Vest - unit 1, 2		1x125	125	1x125		250		1x126	126	1x122		248

¹⁰⁹ Ministry of Economy and Commerce 2003.

ANNEX F

SUMMARY OF KEY PROVISIONS OF COLLECTIVE AGREEMENTS (CA) MINING AND GEOLOGY SECTOR

In January 2004, a new CA was negotiated for 2004–2007, with the following benefits and payments:

- Bonus for working holidays and weekends
- Bonus for overtime work
- Holiday payment¹¹⁰
- Special occasion payment (Christmas, Easter, Professional Day)
- 6 paid holidays (Christmas, Easter, New Year, Professional Day)
- Free transportation to/from work
- Free meal plan 1 or 2¹¹¹
- 8 tons of coal/year for miners and 6 tons/year for other coal workers

Vacation is paid based on length of service, beginning with a minimum of 24 working days per year.

Turceni CA Features:¹¹²

Bonuses

- Length of service
- Continuity of activity
- Working night shift
- Consistent work over normal hours
- Working Saturdays, Sundays, and Professional Days
- Working on legal holidays

Additional Pay

- For 20, 30, 35 years of work
- Year-end fixed amount (within budget)
- 75% transportation cost for residents outside Turceni area

¹¹⁰ In 2004, the amount was 75% of the average gross salary at CNLO level.

¹¹¹ Meal plan 2 requires beneficiary to pay 25% of meal price. The plan is not used often.

¹¹² EMG, Information Memorandum – Turceni, 2005.

ANNEX G

SUMMARY OF LEGISLATIVE BACKGROUND SUPPORTING COAL AND RELATED POWER SECTOR RESTRUCTURING IN ROMANIA

GD – Government Decision

GEO – Government Emergency Ordinance

MO – Ministry Order

Electricity and Mining

- Law on Commercial Companies of 1990 (31/1990)
- GEO 9/97 restructuring of all industries
- GEO 22/97 right to seek voluntary redundancy in exchange for higher severance benefits
- Law on Accelerated Privatization of the Power Sector of 2002 (137/2002)
- Privatization of commercial companies (GEO 88/1997), amended law 99/1999 regarding measures for economic reform acceleration
- GD 577/2002 on approval of the Methodological Norms for the Application of GEO 88/1997 and Law 137/2002
- GD 102/2004 regarding approval of the thermal power generation sector strategy
- Mining Law of 2003 (85/2003)
- Electricity Law of 2003 (138/2003)
- GD 103/2004 regarding measures for investment and privatization of the thermal power generation and lignite mining; created Turceni, Rovinari and Craiova power complexes.
- GD 540/2004 approval of Licensing and Authorization in the Power Sector of Romania
- GD 185/2005 regarding increased investment and accelerated privatization in 2005. Advanced Turceni, Rovinari and Craiova power complexes for privatization.
- Wholesale Electricity Market Commercial Code (2005)
- GD 418/26.05.1999 regarding insurance of the implementation conditions of the mining sector restructuring project
- GD 615/2004 regarding approval of the mining sector restructuring strategy
- GD 632/05.08.1999 regarding mining assets capitalization
- GD 592/1993 regarding public acquisition rules and procedures for awarding contracts
- MO MIC 273/2001 approving the Mine Closure Manual

Labor

- Law on Social Protection of Unemployed (1/1991)
- GEO 9/1997 concerning protection measures in terminating individual labor contracts due to collective redundancies from restructuring, privatization, and liquidation
- Law establishing National Agency for Employment and Vocational Training (NAEVT) 145/1998
- Law on Collective Labor Bargaining Agreements (130/1996)
- Law on Work Protection (90/1996)
- Pension and Social Insurance Law (19/2000)
- Optional Pension System Law (249/09.06.2004)
- Wage Law (14/1991)
- Ministry of Health Order 508/2002 – General Occupational Health Protection Guidelines
- GEO 107/2003 requiring employer contributions to insurance fund for occupational accidents and disease; identifies employee right to financial and social assistance

Environment

- Environmental Protection Law of 1995 (137/1995), amended by GEO 91/2002, Law 294/2003, Law 654/2002
- Kyoto Protocol

- GD 541/2003 regarding measures to limit emissions for certain pollutants from large combustion plants. Complies with EU Directive 2001/80/EC
- Water Law 107/1996
- MO MAPPM 184/197 drafting the environmental impact assessment
- MO MAPPM 860/2002 approval of procedures regulating economic activities that impact environment
- MO NARM 187/2002 technical specifications for Specific Health and Safety Norms
- MO MAPPM 462/1993 approval of air quality surveys
- MO MAPPM 756/1997 approval of soil quality surveys
- MO NTPA 001/2002 approval of water quality surveys

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ANNEX H

SUMMARY OF LESSONS LEARNED FROM COAL SECTOR RESTRUCTURING BY MARY LOUISE VITELLI

A. Government-initiated reform program provides a needed champion for reform. The Government of Romania recognized that absent coal and mining reform, larger economic reform would be impeded vis-à-vis national budget spending. Despite political changes in Romania during the last 15 years, Government has been a sustained supporter of sector restructuring. In 1997, it opted to take a fast pace approach to the reform by issuing an enticing package for coal workers; the response was unexpected and overwhelming and indicated to Government that workers were ready for a change in their circumstances under the right economic terms. However, Government could not financially support its voluntary reduction program and this inability triggered years of difficult and often ad hoc approaches to sector restructuring.

- Government commitment to sector reform provided a platform from which donors were able to work closely with Government and the sector to develop assistance measures and a strategy for sector reform. World Bank and EU assistance helped to create the enabling framework that was combined with macro and policy reforms supported by Government. The World Bank and various donors helped to ensure that the coal sector reform strategy for reform could be sustained.
- The European Union accession goals – specifically with respect to power sector reform that impacted coal reform – provided significant momentum for Government to stay on its reform course. EU accession requirements helped the Government of Romania rationalize to its constituents a number of economic development actions over the last decade.

B. Union and worker collaboration essential to viable restructuring. Government learned quickly that worker participation in developing mine closure, as well as mine community development initiatives, were critical for local “buy in” to reform and sustainability of proposed economic and social changes.

C. Power reforms linked with coal made Romania’s energy sector more competitive. Romania is now a net exporter of electricity: in 2001 it exported more than 24% (3,400 GWh) of all power traded in ECSEE.¹¹³ The Government continues to be dedicated to reforming the coal and energy sector. Government and donors quickly recognized that without a viable market for Romania’s coal, there would be no hope for the remains of the sector.

D. Appropriate institutional mechanisms to support restructuring are critical. World Bank funding helped the Government of Romania create the National mining agency (NAD), which ultimately developed 14 regional offices. For a number of reasons, funding to this structure was a constraint, not the least of which was Romania’s national budget system (that requires line items for literally every item purchased using Government funds, including World Bank funds channeled through the national budget).

- The Company for Closure of Mines and the National Agency for Mineral Resources played important and consistent roles that under former economic structures were not required and did not exist.
- The politics of Romania and institution-building during the years of coal reform cannot be underestimated. In addition to national changes in government leadership and political

¹¹³ World Bank 2005: 5.

leanings, local leadership and regional changes contributed to a constant change in sector strategy and in priorities for support and funding.

E. Integrated reform actions. To focus only on job creation or mine closure or legislative frameworks or severance packages – as was done in certain regions of Romania and supported by certain donors at different times –, cannot be sustained unless part of an integrated reform strategy into which workers and managers have “bought”. Romania’s coal sector restructuring program suffered from a number of stop and start assistance initiatives that raised expectations without meeting them. The coal mines and associated assets, the coal community, the regional economy and the national politick must all be considered when designing reform actions that can realistically be implemented and sustained (where required).

F. Capacity-Building by Implementing Reform. In many ways, Romania was a testing ground for coal sector restructuring which proved – through Government and donor partnerships, as well as strong regional and local participation in sector reform – capacity-building at all levels could be achieved. The lesson learned in Romania that earlier and more regularized capacity-building engagement would have been useful outside the capitol city, which ultimately took 3 to 5 years to regionalize.

F. Public Information must be regularized, accurate and useful. Romania constantly battled with media pressures that were based on union disputes, community outcry and European Union accession demands. Misinformation was common in the Romanian press. This exacerbated the persistent the lack of accurate information at the local and regional levels and negatively affected individual responses to sector reform. By training journalists in specific coal and energy topic areas, more accurate and reactionary reporting came into place.

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