

IMF Policy Discussion Paper

The Energy Sector Reform and Macroeconomic Adjustment in a Transition Economy: The Case of Romania

Stéphane Cossé

IMF Policy Discussion Paper

European I Department

The Energy Sector Reform and Macroeconomic Adjustment in a Transition Economy:
The Case of Romania

Prepared by Stéphane Cossé¹

April 2003

Abstract

The views expressed in this Policy Discussion Paper are those of the author(s) and do not necessarily represent those of the IMF or IMF policy. Policy Discussion Papers describe research in progress by the author(s) and are published to elicit comments and to further debate.

This paper assesses the main issues faced by the energy sector in a transition economy such as Romania and their macroeconomic dimension. It examines how the size of quasi-fiscal subsidies, owing mainly to inappropriate prices and the lack of financial discipline, has led to an increased focus on the energy sector under the IMF-supported programs. The paper analyzes the macroeconomic impact of recent reform measures and discusses the next steps to improve price policy and collection in energy utilities. Shifting to targeted budgetary subsidies appears also to be a crucial reform step.

JEL Classification Numbers: H20, L11, L94, L95, Q43.

Keywords: Romania, energy sector, quasi-fiscal activities, macroeconomic stabilization, transition.

Author's E-Mail Address: scosse@imf.org

¹ The author would like to thank Neven Mates for his very helpful guidance in the drafting of this paper, as well as the IMF's Romania country team and Günther Taube for their insightful comments. He is also particularly grateful to Anca Paliu for her assistance, notably in compiling data, and her suggestions.

Contents	Page
I. Introduction	3
II. Main Issues in the Transition Process	4
A. Decline in Primary Production.....	4
B. Excess Capacity in the Secondary Sector	5
C. Consumption, Energy Intensity, and Dependency on Imports.....	5
D. Inappropriate Pricing.....	7
E. Financial Indiscipline	10
F. Incomplete Reform of the Institutional and Regulatory Framework.....	11
III. Macroeconomic Dimensions and Implications for Fund Programs	12
A. Quasi-Fiscal Expenditures in the Energy Sector.....	12
B. Energy Sector Reforms Under Fund Programs.....	14
IV. What Remains to Be Done?.....	18
A. Pricing Policy.....	18
B. Improving Collection	21
C. Shifting to Targeted Budgetary Subsidies.....	22
D. Strengthening the Budgetary Transparency.....	23
V. The Importance of Romania's Experience for Other Transition Economies.....	23
Text Boxes	
1. Unbundling the Energy Sector.....	11
2. Measures in the Energy Sector in Fund Programs.....	15
Text Tables	
1. Total Subsidies in the Energy Sector, 2000–01	13
Figures	
1. Energy Demand and GDP, 1989–2001.....	6
2. Self-Sufficiency in Energy Resources, 1989–2001	7
3. Natural Gas Prices in 2000	8
4. Electricity Prices in 2001	8
5. Average District Heating Prices for Household Consumers in 1999	9
References.....	25

I. INTRODUCTION

Romania's energy sector has faced major economic and financial difficulties since 1989, notwithstanding the country's substantial natural endowment in primary energy resources. Prices of electricity, gas, and heating have been kept below current costs, and even further below long-term marginal costs. In addition, very low collection rates have weakened the sector's financial performance. As a result, investment in the energy sector has been lacking, many facilities are obsolete and highly inefficient, and the production of primary energy is declining. Import dependency has so far remained stable, owing to a drop in demand, but is expected to increase in the future. The energy sector's quasi-fiscal subsidies, reaching about 5 percent of GDP in recent years, have become an important factor influencing overall macroeconomic developments.

The energy sector remains state-owned, except for half of the oil sector. In the late 1990s, the electricity and gas sectors were unbundled and regulatory agencies were established. However, the price structure, outside of the oil sector, has remained distorted, and the regulatory framework does not yet provide incentives conducive to private sector involvement.

This paper will (a) review the main issues faced by the Romanian energy sector in the transition process; (b) analyze their macroeconomic dimension, which led to an increased focus on the energy sector under the IMF-supported programs; (c) discuss energy reform measures that could contribute to reducing macroeconomic vulnerabilities in the medium

term; and (d) summarize the lessons from Romania's experience for other transition economies.

II. MAIN ISSUES IN THE TRANSITION PROCESS

A. Decline in Primary Production

Romania has been a major producer of primary fuel resources since the early twentieth century. It was the first significant producer of natural gas in Europe and it remains the largest oil producer in Central and Eastern Europe. However, the production of primary energy resources declined abruptly during the last decade and this trend is expected to continue in the years ahead. This reflects mostly the lack of competitiveness of the coal sector and the absence of exploration in the gas sector. Specifically:

- Coal production, the most important primary source of energy, dropped from 77 million tons in 1989 to 30 million tons in 2001. The decline could have been even larger without subsidies from the government, which tried to reduce social hardship caused by mine closures. The subsidies recently amounted to more than $\frac{1}{4}$ percent of GDP per year, while mines' unpaid taxes amounted to another $\frac{1}{3}$ percent of GDP per year. Out of a remaining total of 230 mines and quarries, the government intends to close 190 of them by 2004.
- Natural gas production fell sharply, from 33 bcm in 1989, to only 13 bcm in 2001, and is expected to drop below 8 bcm by 2015.

- Oil production fell from 9 million tons in 1989 to 6 million tons in 2002. The potential for new oil discoveries is limited, and the authorities expect that production will flatten at best over the next decade.

B. Excess Capacity in the Secondary Sector

There is a large excess capacity in the electricity sector, resulting from a drop in energy demand, and many facilities are highly inefficient. Currently, only 9,000 MW are used, compared to total installed capacity of more than 22,000 MW. The capacity is aging with only 20 percent of plants less than 15 years old, while over one-third are older than 25 years.

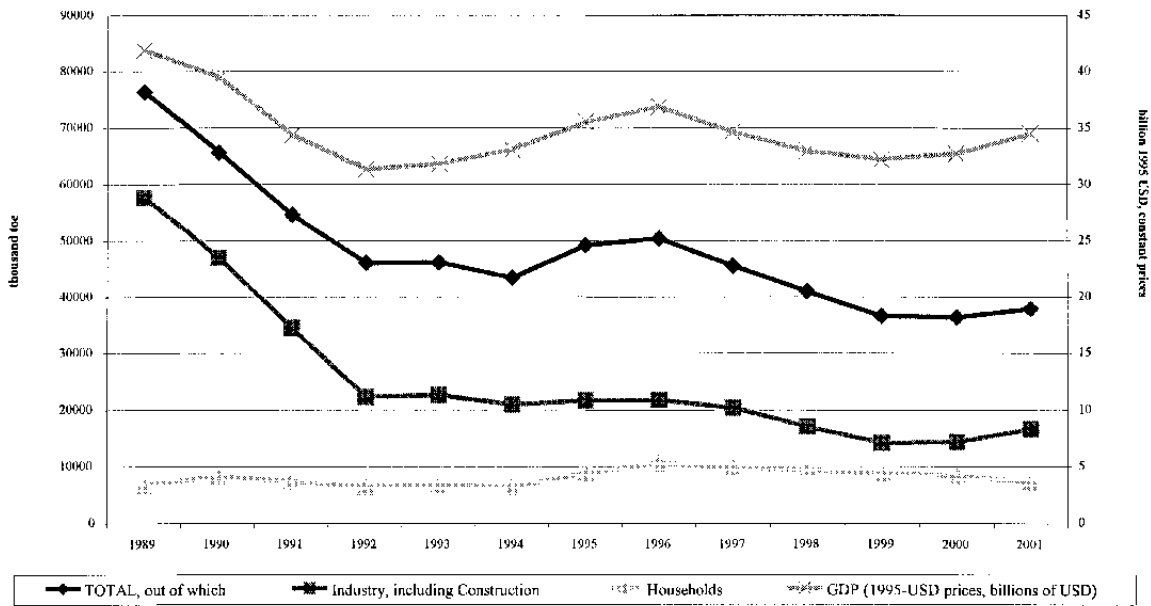
Overcapacity exists also in the refinery sector. Total installed capacity was about 34 mt/year in 2001, but operational capacity was much lower at 22 mt/year, half of which was effectively used for domestic consumption (8 mt/year) and exports (3 mt/year). The refineries require upgrading, as they are technically and economically obsolete owing to underinvestment. About 40 percent of the installed capacities is owned by the state-owned company Petrom, the largest corporate employer in the country.

C. Consumption, Energy Intensity, and Dependency on Imports

Energy consumption fell by more than half in the period 1989–2001. The drop in consumption took place primarily in industry, while households' consumption has remained roughly flat (Figure 1). Relative to GDP (constant prices), energy consumption declined by one third during the same period, indicating that the country has made substantial gains in

energy efficiency. Nevertheless, energy intensity remains four times above European standards, and three times higher than in the United States. Moreover, the decline in intensity reflected primarily the drop in industrial production. Within the industrial sector, energy intensity fell in 1989–91, but then increased in the mid-1990s.²

Figure 1: Energy Demand and GDP, 1989-2001

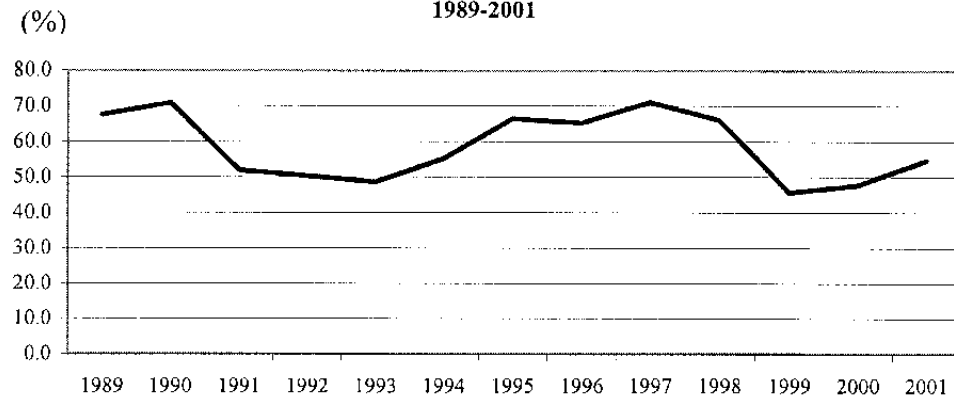


Sources: Romanian authorities, and IMF staff estimates.

As a result of declining consumption, the country's self sufficiency rate (about 60 percent) has remained stable (Figure 2). However, dependency on imports is expected to increase in the future, since domestic oil production is expected to stabilize at best, gas production will continue to decline, and loss-making coal mines will be shut. Based on long-term forecasts for energy demand, the country is expected to increase gas imports from 3 bcm in 2001 to 14 bcm in 2015.

² Energy intensity in industry rose by 19 percent during the period 1992–98, owing mostly to the slow pace in the restructuring of the state-owned enterprises. See Cornillie and Fankhauser (2002).

**Figure 2: Self-Sufficiency in Energy Resources,
1989-2001**



Sources: Romanian National Institute of Statistics; and IMF staff estimates.

D. Inappropriate Pricing

Tariffs for natural gas, electricity and district heating have been persistently set below international prices, even though the regulatory framework was revised in 2001.

For natural gas, wellhead prices are about $\frac{1}{3}$ of import prices. Gas retail tariffs for households, even following significant adjustments in 2001–02, are about three times lower than in OECD countries and two times lower compared to other EU accession countries in the region (Figure 3).

In the electricity sector, prices in Romania are among the lowest in Europe, particularly for households: tariffs are more than two times higher in the European Union and about 20 percent higher in EU accession countries in the region (Figure 4).

Figure 3: Natural Gas Prices in 2000 (USD/1000m3)

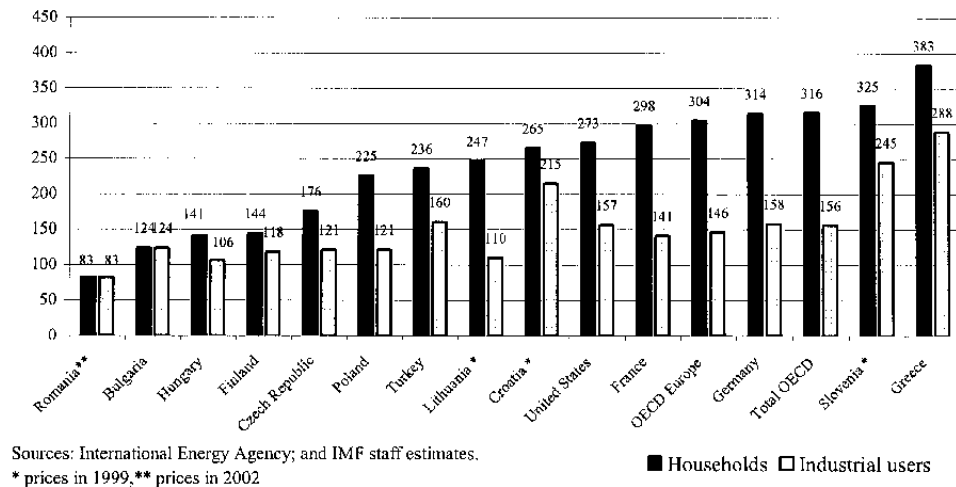
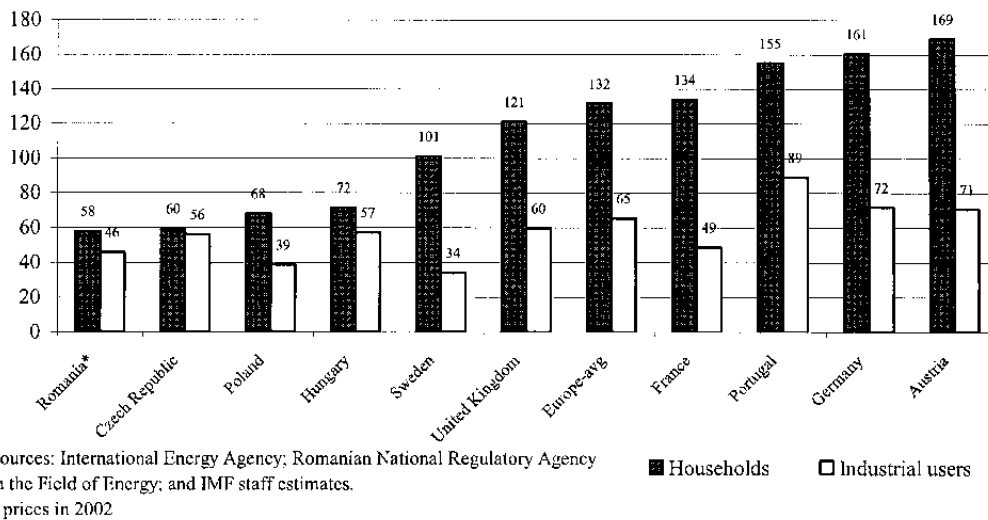


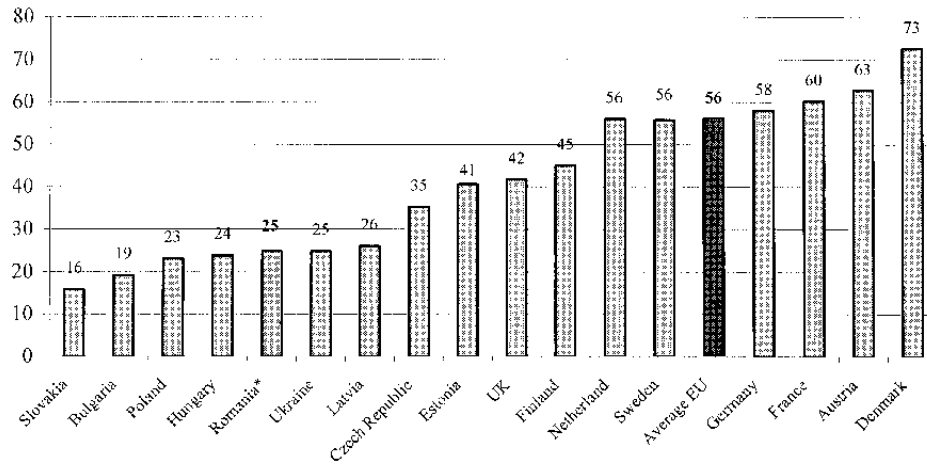
Figure 4: Electricity Prices in 2001 (USD/Mwh)



In the district heating sector, the national reference price, following an increase in 2001–02, amounts to at most 70–80 percent of average production costs, with the difference covered by local and central government subsidies to producers. The national reference price is two

times lower than district heating prices on average in the European Union, but is comparable to the level of several other EU accession candidate countries (Figure 5).

**Figure 5: Average District Heating Prices for Household Consumers in 1999
(EUR/Gcal, VAT included)**



Source: Romanian National Regulatory Agency in the Field of Energy (ANRE).

*Romania, November 2002

There are several implications of the policy of low tariffs. The government has foregone profits and royalties in the natural gas sector, while exploration and investment have been suppressed, including the exploitation of less accessible gas fields, thereby accelerating the decline in production. The upgrading of the aging electricity and heat generation plants has been delayed. Maintenance has also been insufficient, including repairs of leakages in the transportation system. At the level of distribution, the installation of meters, particularly for heating, has not been completed. This explains relatively large technical losses of 25–40 percent in the district heating sector, and above 10 percent in the power sector. On the

side of users, low energy prices have generated distortions by keeping afloat non-profitable companies and promoting wasteful consumption, slowing the decline in energy intensity.³

E. Financial Indiscipline

Industrial users have been traditionally among the worst payers. Large energy-intensive companies, primarily state-owned, continue receiving supplies notwithstanding their poor payment record. With respect to households, collection has been particularly weak in the district heating sector. In turn, weak collection of the energy sector has often generated a chain of arrears to suppliers and the budget.

The factors underlying payment arrears in the industrial sector in Romania have been similar to other transition countries.⁴ First, the output collapse and the huge shifts in relative prices following liberalization have affected enterprises' profitability. Second, banking reforms have limited access to soft credit. Third, the legal framework, in particular bankruptcy and liquidation procedures, has remained weak, preventing legal action against nonpayers. Fourth, Romanian law specifically protects all households from discontinuation of heating during the winter period.

³ Furthermore, due to the low gas tariff policy, district heating has been more expensive for households than natural gas for heating purpose. End-users have been switching individually to gas heating that is probably costlier for the community.

⁴ Bagratian and Gurgen (1997) analyze for instance similar payment arrears in the gas and electric power sectors of the Russian Federation and Ukraine.

F. Incomplete Reform of the Institutional and Regulatory Framework

To allow companies to adjust to the competitive environment and to prepare for privatization, the Romanian Government unbundled the energy sector and established regulatory agencies in 1998–2000 (see Box 1). The reform was also motivated by the prospect of EU accession.⁵

Box 1. Unbundling the Energy Sector

Electricity

In the electricity sector, the government transformed the vertically integrated monopoly Renel into Conel in September 1998. Subsidiaries were established, respectively for thermal generation (Termoelectrica), hydroelectric generation (Hidroelectrica), network maintenance (Transelectrica) and distribution (Electrica). During the second stage from 1999–2000, the subsidiaries were transformed into separate legal entities. At that time, the government also established the National Regulatory Authority and a power exchange. In the third stage, the government intends to privatize gradually the distribution company, which has been split into eight regional units (of which two units have been offered for sale).

Natural Gas

In the natural gas sector, the government established in 1998 five companies to separate exploration, production, storage, and distribution (2) activities. In 2000, the regulatory agency started operations. Two companies, Romgaz and Petrom have preserved a de facto monopoly of production, often contracting directly with large industrial users. The regulatory framework allows new companies to produce and supply directly. The two distribution companies, Distrigaz Sud and Distrigaz Nord, that are dominant in the market, are expected to be offered for sale in 2003.

Oil Sector

Private sector involvement has been the most advanced in the oil sector, owing to the privatization of several refineries and the opening of the distribution sector. The state-owned company Petrom has remained, however, the only oil producer. In 2001, Petrom had sold about half of the country's consumption of processed oil, in addition to 38 percent of domestic gas output. Petrom also controls, through its two refineries, 43 percent of Romania's installed refining capacity, and its market share in the distribution sector (600 filling stations) reaches around 50 percent. It is expected to be offered for sale in 2003.

Heating Sector

Some 60 percent of heat generation is provided by about 500 local district heating companies, mostly owned by the city or the county, and by close to 60 privately run companies. Termoelectrica supplies the remaining 40 percent. In 2002, 17 of Termoelectrica's thermal plants, providing about a half of heat supplied by Termoelectrica, were transferred to the municipalities, as local management is expected to run the plants more efficiently. To strengthen the decentralization, a regulatory authority has been established under the authority of the Ministry of Public Administration. Local companies are free to set their prices, but almost all of them have set the price at the level of the national reference price. Given social pressure, local governments prefer to pay subsidies, even though 55 percent is covered by their local budgets (the rest being paid by the central government).

⁵ For instance EU Directive 93/76 regarding limitation of polluting emissions by increasing energy efficiency (Directive SAVE), EU Directive 96/92 on the opening of the energy market and introduction of competition, EU Directive 98/30 regarding the rules of the single natural gas market.

III. MACROECONOMIC DIMENSIONS AND IMPLICATIONS FOR FUND PROGRAMS

A. Quasi-Fiscal Expenditures in the Energy Sector

The total amount of the quasi-fiscal expenditures via the energy sector in Romania is estimated at some 5 percent of GDP in 2000–01.⁶ At such a level, quasi-fiscal expenditures are higher than the budgetary deficit, which ranged between 3–4 percent of GDP during the same period. Quasi-fiscal subsidies to energy users in Romania have consisted of the following: (i) low tariffs that subsidize all users; (ii) subsidies to nonpaying customers; and (iii) targeted subsidies through social tariff rates. The total amount of subsidies in the energy sector should include the budgeted subsidies consisting in budgetary support to low-income households and subsidies to mines (Table 1).⁷

⁶ The level of quasi-fiscal subsidies is calculated through the “End-Product Approach”, based on the quantity of energy sold, the end-user prices and the collection rates compared to import or export prices (see Petri and others (2002)).

⁷ The total amount is close to that of recent estimates by the OECD in their Country Assessment. The OECD estimated roughly that total direct and indirect subsidies were equivalent to 8 percent of GDP, with 6 percent accounted for by the energy sector, including coal. The amount of subsidies to the coal sector is estimated at 0.5 percent of GDP.

Table 1. Total Subsidies in the Energy Sector, 2000-01 1/ 2/
(In million of USD)

	Households		Industrial users		Total subsidies	
	2000	2001	2000	2001	2000	2001
Not recorded in the budget						
Mispricing	492.2	425.2	1,003.2	967.8	1,495.4	1,393.0
<i>In percent of GDP</i>	1.3	1.1	2.7	2.4	4.1	3.5
Non-payers	97.8	159.5	179.8	342	277.6	501.5
<i>In percent of GDP</i>	0.3	0.4	0.5	0.9	0.8	1.3
Life-line tariff	17.0	24.0	...	...	17.0	24.0
<i>In percent of GDP</i>	0.05	0.06	...	...	0.05	0.06
Total: Non-recorded in the budget	607.0	608.7	1183.0	1309.8	1790.0	1918.5
<i>Percentage of GDP</i>	1.6	1.5	3.2	3.3	4.9	4.8
Budgetary expenditures						
District heating subsidies	112.3	132.2	...	...	112.3	132.2
<i>In percentage of GDP</i>	0.3	0.3	...	...	0.3	0.3
Support to low-income households	21.8	24.4	...	...	21.8	24.4
<i>In percentage of GDP</i>	0.06	0.06	...	...	0.06	0.06
Total: Budgetary expenditures	134.4	157.0	...	...	134.4	157.0
<i>In percentage of GDP</i>	0.4	0.4	...	...	0.4	0.4
Total: budgetary and non-budgetary	741.4	765.7	1,183.0	1,309.8	1,924.4	2,075.5
<i>Percentage of GDP</i>	2.0	1.9	3.2	3.3	5.2	5.2

Sources: Romanian authorities; and IMF staff estimates.

1/ Excluding the coal sector.

2/ Compared with Fund documents on the Stand-by program 2001-2003, this table includes in addition the budgetary subsidies (life-line tariff, support to low-income households), as well as the cost of supply to non-payers by district heating producers, other than Termoelectrica. This represented 0.3 percent of GDP and 0.4 percent of GDP, respectively in 2000 and 2001.

Industrial companies are the main beneficiaries, with their implicit subsidies equivalent to more than 3 percent of GDP. Households have also enjoyed indiscriminate subsidies, regardless of their incomes. The increase in households' and industrial users' payment arrears to energy companies amounted to ½ percent of GDP in 2001. Socially targeted subsidies through budgetary support for household energy bills and the social tariff for electricity consumers amounted only to 0.1 percent of GDP in 2000 and 2001, and slightly more in 2002 when the social tariff was extended to natural gas consumers.

While the budget paid producer subsidies to coal mines and heating producers, and heating subsidies to households, the bulk of financing of the subsidies, which represented quasi-fiscal expenditures, has taken different other forms. There has been in some cases an accumulation of tax arrears or payments by the budget for called guarantees of the energy sector. One-off

arrears cancellation has also been common practice, varying between 0.5 percent and 1.5 percent of GDP in recent years. In 2001, for example, the government cancelled arrears of Termoelectrica to the budget and state-owned suppliers in amount of 1.1 percent of GDP.⁸ Such practices have alleviated the financial burden of energy companies, but have also encouraged a nonpayment culture among state-owned enterprises. Furthermore, a large part of the subsidies stemming from keeping the well-head prices below market levels, subsidies have been financed by running-down the country's natural resources. Finally, until electricity producer prices were adjusted to cost-recovery levels in 2002, Termoelectrica has been borrowing large amounts to cover its operating losses.

Needless to say, the subsidies and their financing have remained nontransparent, as most of them are not recorded in the budget. An additional layer of nontransparency has been added by the frequent practice of barter and offsetting arrangements. The amount of noncash collection in the energy sector amounted to 2.5 percent of GDP and 2.8 percent of GDP in 2000 and 2001, respectively. The lack of transparency in budgetary and financial practices has reflected weaknesses in corporate governance and budget management.

B. Energy Sector Reforms Under Fund Programs

The soft budgetary constraints of state-owned energy utilities have undermined the effectiveness of fiscal and monetary policies. In letting the energy companies accumulate losses, the government has allowed industrial users and households to run arrears to the

⁸ The same practices are commonly used in FSU countries, see Petri and others (2002).

utilities or to benefit from the run-down of natural resources. Industrial end-users have been able to raise wages and prices without fear of immediate consequences, while households have benefited from a higher disposable income and consumption.⁹

Owing to the large losses in the energy sector, the two most recent Stand-By Arrangements in 1999–2000 and in 2001–03 have addressed energy sector reforms. Both programs have focused on pricing, the strengthening of financial discipline, and structural measures. The macroeconomic implications of energy sector reform have led to an increase in the number of related conditions under the latest Stand-By Arrangement. Box 2 summarizes information on energy sector reform under the last two arrangements.

Box 2. Measures in the Energy Sector in Fund Programs			
	SBA 1999-2000	SBA 2001-03	Conditionality*
Pricing			
Increase electricity, natural gas, and heating prices	X	X	X
Increase royalties in the mining, oil, and gas sectors		X	
Financial discipline/collection improvement			
Reduction in the domestic arrears to the three largest energy utilities	X		X
Net reduction of tax arrears of the three largest energy utilities	X		X
Cutting energy and crude oil supplies to nonpayers	X		
Apply a forced execution scheme on the tax arrears of three largest utilities	X		
Raising collection rates in major utilities		X	X
Disconnection of the 20 largest nonpayers		X	X
Establishment of fully functioning escrow accounts for consumer payments		X	X
Reducing deadline for payments and for disconnections		X	X
Transferring 16 district heating units of Termoelectrica to local municipalities		X	X
Budgetary subsidies to be paid fully and in time into escrow accounts		X	
Reinforcing efforts to complete the installation of metering systems		X	
Excess capacity			
Loss reduction by closing operations in 46 mines	X		
Reducing excess capacity significantly, by closing down several thermal power plants	X		
Structural measures			
Privatization of two electricity distribution companies		X	
Privatization of the gas distribution companies		X	
Signature of contract with the privatization advisor for Petrom		X	X

*Conditionality in the program: quantitative/structural performance criteria or prior actions.

⁹ Inter-Enterprise Arrears in Post-Command Economy: Thoughts from a Romanian Perspective, Daianu, 1994.

The importance of the energy sector for macroeconomic developments was demonstrated particularly well in 2001–02. In the first semester of 2001, domestic demand was growing at around 9 percent in real terms, and the current account deficit ran at an unsustainable rate of 7 percent of GDP on an annual basis. In addition to a loosening of fiscal policy, these developments reflected an increase in losses in the energy sector owing to delayed price adjustments and deteriorating collections, both of which contributed to higher quasi-fiscal spending and deficits in the broader public sector. As fiscal contraction was necessary to contain domestic demand, priority was given to the reduction of losses in the energy sector, owing to the positive additional structural effects of such measures, rather than focusing exclusively on a narrow budget adjustment.

It was not expected, however, that the reduction in the energy sector losses would translate into an equivalent improvement in the saving investment balance of the public enterprises sector. First, in the energy sector companies, the reduction in losses would be partly offset by higher tax payments. Second, in the rest of public enterprises, the effects of price hikes and higher payments discipline were likely to be offset by a transitory increase in their losses. Third, energy sector companies were also likely to somewhat increase their investment. In the absence of precise data, including on financial performance of other enterprises and investments in the energy sector, these effects could only be roughly estimated.

With these objectives in mind, the program provided for very ambitious price adjustments and measures to improve collections. The retail tariff for natural gas was increased from about US\$40 per tcm for households (US\$60 per tcm for industrial users) in early 2001, to

US\$82.5 per tcm for both users in July 2002. The electricity producer price for the thermo-power company, Termoelectrica, was increased from US\$30 per Mwh, to US\$39, a level close to its operating costs. The national reference price for heating was raised from US\$10 to US\$20 per Gcal, the latter being close to the production costs of the largest producer, Termoelectrica.¹⁰ Furthermore, a firm collection policy against the largest bad payers, including disconnections of industrial nonpayers, was also effectively implemented to improve the collection rates and to strengthen financial discipline. In the gas sector, collection rates increased by more than 10 percentage points between end-2001 and September 2002, some improvement was also achieved in the electricity sector, while collections in the heating sector remained weak.

As a result, the energy sector losses monitored under the program were reduced from an annualized 6½ percent of GDP in the first semester of 2001 to 4 percent of GDP in the second semester of 2001 and to about 3 percent of GDP in 2002. The measures successfully dampened a boom in household consumption. With the share of energy bills in the households consumption basket at 7–8 percent, it is estimated that the price adjustments led to a decline in disposable incomes of about 3 percent in 2001 and 2.5 percent in 2002. This supported an improvement in the current account deficit to about 5 percent of GDP on an annual basis in the second semester of 2001 and further to 3½ percent in 2002. Growth performance in this period remained strong, while inflation was successfully brought down.

¹⁰ In addition to these increases, tariffs for natural gas and electricity have continued to be adjusted for the variation in the U.S. dollar exchange rate every quarter.

IV. WHAT REMAINS TO BE DONE?

In the period ahead, the following four main areas of reform require attention: (i) price policy; (ii) collection efficiency; (iii) a shift from general to targeted subsidies; and (iv) an improvement in budget transparency.

A. Pricing Policy

Notwithstanding the recent adjustments in energy prices, tariffs remain subject to distortions and are low compared with long-term marginal costs. This creates inappropriate incentives for investment and private sector involvement. To address this issue, the institutional and regulatory framework will need to be reformed.

First, it is critical that the regulatory authority be free from day-to-day political interference, as otherwise inappropriate pricing will remain an issue. For electricity and natural gas, including retail and access charges, tariffs should be set to cover long-term costs and to prevent cross-subsidization. The issue of social affordability could be addressed via direct subsidies from the budget.

Second, the regulatory framework needs to be revised, particularly with regard to the formula for distributing revenues in the electricity and natural gas markets. The distribution companies should no longer be allowed to shift the burden of weak collections onto their suppliers. Moreover, the prices paid to domestic natural gas producers should not be adjusted to compensate for higher import costs so as to keep the single tariff unchanged.

Third, cross-subsidization between industrial and residential sectors needs to be eliminated. In particular, with respect to natural gas, Romania persistently set lower tariffs for households at the expense of industrial users until 2001, contrary to western European countries that charge more to households owing to higher distribution costs and the variable time profile of consumption. While the price is now unified, different distribution costs and peak costing require further increases in prices for households.¹¹

Fourth, prices should ensure the financing of investment. In the electricity sector, this implies moving gradually to an optimal tariff closer to the long-run marginal cost, that is closer to the average in Europe.¹² In the natural gas sector, prices should be targeted to reach a level close to import parity, also taking into account distribution costs.

Fifth, to reduce operational costs and limit the necessary tariff increases, market liberalization is needed. Across the main sectors, the situation is as follows:

- In the oil sector, the liberalization is well advanced in refining and distribution. The privatization of Petrom, the largest company, scheduled for 2003, will complete the transformation into a fully competitive market (excluding domestic oil production).

¹¹ In the power sector, several measures in the tariff structure have already been implemented to limit tariff distortions. In particular, time-of-day pricing has been introduced that more closely reflects marginal costs, as well as capacity charges.

¹² EBRD (2001) suggests to use the long-run marginal cost in the United States, an energy-intensive country, as an initial yardstick for the transition countries.

- In the natural gas sector, foreign investors that have been successful in exploration have not started activity owing to the suppressed well-head tariffs and the absence of technical capabilities to export gas.
- In the natural gas and electricity sectors, suppliers have been allowed to negotiate bilateral contracts with eligible consumers, provided that the latter have good payment records. In electricity, the market has been gradually opened up to 33 percent of demand, and to 25 percent of demand in the natural gas market. The actual share of bilateral contracts has remained, however, largely below the ceiling. For example, Termoelectrica's thermal plants, which generate some 60 percent of total electricity, are on average not competitive in the market, thereby constraining the potential for competition between market participants. As a result, Termoelectrica sells only in the nonliberalized market where collection performance is weaker than in the open market.¹³
- In the district heating sector, given the difficulties in collections and the retail price level, it is unlikely that private participation can be envisaged in the foreseeable future without government subsidies. The level of technical losses in the systems, estimated at about 25 percent to 40 percent of deliveries, indicates a need for large additional investments, or the gradual replacement of the existing systems with individual heating systems.¹⁴

¹³ Termoelectrica's access to the liberalized market has been limited to 10 percent. But even this is purchased by the distributor Electrica, in the absence of interested eligible consumers.

¹⁴ While energy demand from households has remained flat, the total volume of district heat supplied to households has fallen by 30 percent in recent years.

Moreover, the transfer of Termoelectrica's remaining heating plants to local authorities will need to be reviewed, in light of the outcome of the recent transfers.¹⁵

B. Improving Collection

The lack of financial discipline and weak collection performance need to be addressed. First, the government should not resort to one-off arrears cancellation, barter, and offsetting arrangements that encourage financial indiscipline. Second, the privatization of distribution in the electricity and natural gas sectors that has just been initiated should be pursued to improve collections on a long-term basis.¹⁶ The modalities of the privatization of distribution are, however, key. Experience in other countries points to the advantages of selling to strategic foreign investors to maximize privatization revenues and to strengthen incentives for improved efficiency. Admittedly, private firms owned by foreign investors are better able to cope with possible political interference. The strategic investor is also likely to have the technical knowledge and finance required for essential investment, such as metering programs and computerization of billings that can help improve payments performance.

C. Shifting to Targeted Budgetary Subsidies

Targeted budget subsidies to alleviate the burden of energy bills for households with low incomes are the most effective and transparent method of strengthening public support for

¹⁵ Without budgetary support, it remains to be seen whether the newly transferred plants will be able to avoid losses.

¹⁶ Experience in eastern European countries suggest that in cases where the private sector has entered power distribution, payment collections have improved. See EBRD *Annual Transition Report*, 2001.

energy sector reform. Such a system would need to satisfy the following requirements:

(i) that subsidies reach consumers who need them; and (ii) that the scheme remains reasonably affordable.

Over the last few years, Romania experienced a form of cross-subsidization via social tariffs and income-tested subsidies provided directly to low-income households. The administrative capacity to manage the income-tested schemes at the level of municipalities has been weak, and several programs have failed in recent years.¹⁷ In 2002, the socially most vulnerable households have started to receive funds through a newly established minimum guarantee scheme, which includes a special allocation for energy bills. But information is too sketchy to draw conclusions about its success. As to the social tariff rates for limited consumption in the electricity and gas sectors, they are lacking transparency in respect to cost-bearing and are not means-tested, being received by some 45 percent of households.

In the district heating sector, a case can be made for abolishing the central government subsidy that provides for a unified price for all final users. Instead, the local government should assume all financial liabilities and set the price locally, which would result in stronger pressures to reduce costs. The central government could then provide budgetary resources for modernization of heating power plants, particularly in the most disadvantaged areas, and for support under the minimum income guarantee scheme.

¹⁷ See *Labour Market and Social Policies in Romania*, OECD, 2000.

D. Strengthening the Budgetary Transparency

The toleration of payment arrears to energy companies and the use of nontransparent budgetary and financial practices, including barter and offsetting arrangements, emphasize the need for better budget management and corporate governance. Corporate management accountability should be reinforced. Specific reforms could include: requiring energy enterprises to publish more detailed accounts, with an emphasis on separating their cash and accrual-based results, incorporating energy quasi-fiscal accounts in budget documents, and augmenting the conventional measures of the budget deficit to reflect the quasi-fiscal activities of the energy sector.¹⁸

V. THE IMPORTANCE OF ROMANIA'S EXPERIENCE FOR OTHER TRANSITION ECONOMIES

The following lessons can be drawn from the Romanian experience for other transition economies:

- First, suppressed prices, weak collections, and an inappropriate institutional framework in the energy sector, partly to accommodate concerns about social costs during the transition process, have resulted in insufficient investment, a decline in domestic production, and the low efficiency of the sector. As a result, Romania has been lagging behind many countries now closer to the European Union's energy efficiency standards.

¹⁸ The IMF's Report on Observance of Standard and Codes (2002) provides further detailed recommendations on measures to strengthen budgetary transparency in Romania.

- Second, large quasi-fiscal subsidies in the sector have had macroeconomic consequences, including an effect on saving rates and the current account position. Similarly, measures to reduce quasi-fiscal subsidies can directly contribute to macroeconomic stabilization, particularly by containing domestic demand, as illustrated in the adjustment that took place in 2001–02 under the IMF’s Stand-By Arrangement program.
- Third, given the need to ensure the social acceptability of reforms, the design of properly functioning targeted programs and the shifting of budgetary resources to assist directly low income households are essential.

References

- Bagratian, Hrant, and Emine Gurgen, 1997, "Payments Arrears in the Gas and Electric Power Sectors of the Russian Federation and Ukraine," IMF Working Paper 97/162 (Washington: International Monetary Fund).
- Cornillie, Jan, and Samuel Fankhauser, 2002, "The Energy Intensity of Transition Countries," Working Paper 72 (London: European Bank for Reconstruction and Development).
- Daianu, Daniel, 1994, "Inter-Enterprise Arrears in a Post-Command Economy: Thoughts from a Romanian Perspective," IMF Working Paper 94/54 (Washington: International Monetary Fund).
- European Bank for Reconstruction and Development, 2001, *Transition Report 2001* (London: European Bank for Reconstruction and Development).
- International Energy Agency, 2002, Quarterly Reports on Energy Prices and Taxes (Paris: International Energy Agency).
- National Regulatory Authority in the Fields of Energy and Electricity, 2002, *Annual Report 2001* (Bucharest: National Regulatory Authority in the Field of Energy). Available via the Internet: <http://www.anre.ro>.
- National Regulatory Authority in Natural Gas Sector, 2002, *Activity Report for the Year 2001* (Bucharest: National Regulatory Authority in Natural Gas Sector). Available via the Internet: <http://www.anrgn.ro/report.htm>.
- Organization for Economic Cooperation and Development, 2002, *Romania: Country Economic Assessment* (Paris: Organization for Economic Cooperation and Development).
- Organization for Economic Cooperation and Development, 2000, *Labor Market and Social Policies in Romania* (Paris: Organization for Economic Cooperation and Development).
- Petri, Martin, Gunther Taube, and Aleh Tsyvinski, 2002, "Energy Sector Quasi-Fiscal Activities in the Countries of the Former Soviet Union," IMF Working Paper 02/60 (Washington: International Monetary Fund).