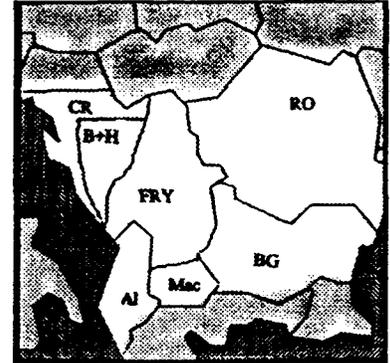


GAS DEMAND GROWTH AND TRADE IN SOUTH-EAST EUROPE: WHAT PERSPECTIVES FOR BULGARIA?

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Abstract

Gas demand and trade are said to grow in South-East Europe (SEE), and inter-regional gas transit is believed to gain importance. Actually, despite a 5 to 10 year delay in economic and energy reforms compared to EU accession countries (Chapter I), prospects for economic recovery (Chapter II) and a sustained growth of gas demand around 3.9 %/year to 2020 in the region and 6.7 % in Bulgaria appear real (Chapter III). Growth is contained by investment needs, vested interests in, and competition from, coal and nuclear as well as concerns about future gas prices and import dependence. The densification of national and regional gas systems will, though, proceed. Inter-regional (North-South and East-West) high-capacity gas pipelines will emerge as a tempting business perspective. While these perspectives are medium- and long-term, competition among pipeline projects is already waging at present. Bulgaria, Romania and Greece position themselves so as to safeguard future transit revenues, the latter country, in cooperation with Turkey, appearing to move fast with the support of the EU. A regionwide optimisation of infrastructure projects appears desirable, however national strategic interests may conflict.



[Abstract in Bulgarian]

I. THE PRESENT SITUATION

SEE suffers doubly: from the heritage of central planning, and from wars and civil and ethnic unrest. As a result, the countries of the region lag behind the more advanced economies in transition by an estimated five to ten years. Yet, their economy recovers, with modest progress in restructuring the economy and the energy industries. This process is guided by policies, which, first in Bulgaria, Romania and Croatia, aim at approximating EU standards and policies, but which remain for the time being dominated by the daily problems of recession, unemployment and social misery. This focus on short-term macro-economic concerns, the volatility of energy laws and the absence of secondary legislation add to uncertainty and unpredictability – a major inconvenience for investors.

Compared to the EU, the region can be characterised in economic and policy terms as follows:

- **Real GDP** per capita in SEE (excluding the shadow market) corresponds to only \$ 5020/year, i. e. 22 % of average income of a EU citizen
- **Real GDP**: however, after a slump in the early 1990s, real GDP per capita began to rise again, exceeding 1990 levels by 8 % in 1999
- **Unemployment**: this economic recovery was too weak to impact on unemployment, which stays at almost 20 % of the active population, compared with 9 % in the EU
- **Energy consumption**: accordingly, energy and electricity consumption per capita remain low, at about 40 % (primary energy use) and 33 % (electricity use) of EU average
- **Energy intensity**: the delays in restructuring of the economy and of the energy sector explain the continued high energy intensity of SEE, which exceeds EU standards by 3.8 times; in other words: the generation of 1000 \$ GDP in the EU requires only slightly more than one quarter of the energy required in SEE.
- **Emissions**: high energy intensity equates with high emissions
- **Losses** in transformation and distribution amount to 37 % of total primary energy supplies in SEE
- **Energy supplies**: by 2001, disruptions of primary energy and electricity supplies have become a matter of the past thanks to emergency supplies from Romania to Yugoslavia and Macedonia to Kosovo; the quality of electricity supplies (voltage level) has improved and reached EU standards in Romania and Bulgaria
- **Energy supply structure**: the primary energy structure remained based on coal (33 %), followed by gas (24 %, as in the EU). There are overcapacities in coal mining and electricity generation, but facilities are outdated and operate beyond designed service life
- **Import dependence**: due to the high share of domestic coal, the net import dependence of SEE is lower (34 %) than in the EU (49 %). Electricity interconnections are still not yet at pre-war levels. Gas interconnections are weak, as is international electricity and gas trade and cooperation generally
- **Deregulation**: the electricity and gas industries have been restructured in Romania and Bulgaria, with Macedonia following suit. Regulators have been set up in Romania and Bulgaria aiming at encouraging competition between producers **within the limited terms of their mandates**. Competition begins to take place between domestic and foreign electricity and gas suppliers as far as interconnection capacities and access to grids permit, but has not become a general feature in SEE.
- **Profitability**: one of the reasons for the lack of competition is the lack of profitability of coal, gas, electricity and district heating facilities. This is due to the lack of cost-covering prices and tariffs and the low payment discipline, hence, of investments.

II. THE PERSPECTIVES

The snapshot of the present situation may appear discouraging. It actually is. Yet, it has to be seen as part of a process. A dynamic had been launched since the mid-1990s, which gives rise to optimism, on condition of political stability:

- **GDP:** the macro-economic recovery will continue; inflation, public budget deficits, domestic capital formation, foreign debt and per capita income will develop in the right direction without however reaching present EU standards for many years to come
- **Energy demand** will rise as will requirements for comfort and quality of energy services but will not reach earlier peaks due to the collapse of demand from industry
- **Energy prices:** as disposable income rises, customers will be increasingly able to absorb the continuous adaptation of regulated end consumer tariffs to real cost; low-income customers will be growingly protected by social tariffs or benefits; the "payment crisis" will phase out
- **Investments:** cost-covering prices and improved payment discipline will in turn allow domestic producers to proceed with repairs, maintenance and refurbishment. Investments in new facilities will be restricted to interconnections or, in cooperation with foreign investors, to decentralized IPP projects
- **Supply structure:** the inherited supply structure will remain untouched, except for some substitution of coal by gas; new renewables will not play any role and demand side management will be limited as prices will not emit strong enough signals
- **Trade:** intra- and inter-regional interconnections will be strengthened and trade in gas and electricity will significantly rise (from a low level). Net import dependence will grow. In a longer-term perspective, SEE will become a transit region for oil and gas from the Caspian and the Middle East
- **Energy intensity and efficiency** will remain low due to the difficulties of restructuring the heavy industries; the weakness of energy pricing signals to end consumers and their low propensity to invest scarce capital in energy saving equipment
- **Restructuring** will precede in the energy industries, beginning with the unbundling of electricity and hydrocarbon monopolies, the setting-up of regulators and the liberalization of prices; this process will conclude with privatisation. However, governments will retain a major stake in energy industry property and will continue to interfere in energy industry operations, investment and tariffs so as to control import dependence, protect vested interests in coal or nuclear or smoothen implications for the labour market or poor consumers. It is only as time passes by, that the pressures to approximate EU policies will lead to "more market". This will happen in Romania and Bulgaria, possibly Macedonia, earlier than in the other SEE countries
- **Profitability** tends to improve as prices are liberalized, productivity programmes produce cost reductions and competition remains weak. It is unlikely, though, that returns on capital compare with other opportunities outside SEE or outside the energy sector.

III. THE GAS SITUATION AND PROSPECTS

The poor state of the energy sector in SEE equates with vast business opportunities for foreign investors, which - in the light of expected improvements of the macro-economic and legislative framework - already attracted **early foreign commitments**. In 2000, foreign direct investments (all sectors combined) reached 3.4 bill. \$¹, the bulk going to Romania and Bulgaria

¹ UNECE, Economic Survey of Europe, 2001, no. 2, p. 38

Opportunities existed throughout the energy system stretching from software for operations to production and environmental control techniques. However, the **priorities** were on the supply side of the equation, both technically (repair, refurbishment of existing plant, pollution control, interconnections) and regulatory (restructuring, privatisation, IPP). At this stage, demand side management, new renewables and cooperative research rate low involving the risk of a perpetuation of inherited energy systems.

A. The present situation

The main interest of foreign investors in the field of **gas** lies in the densification of national gas pipeline systems, the extension of international trunk lines (in the short-term from Russia, in the longer-term from the Caspian and the Middle East) to Turkey, Greece, Albania, Italy and former Yugoslavia, the promotion of gas use by industrial and residential customers, the restructuring and privatisation of the gas industry (beginning with gas distribution), and trade.

Examples of projects under way included:

- interconnections: building of the Szeged-Arad pipeline enabling Romania to import 500 mill. cm via Hungary
- interconnections: extension of transit capacity of the Romanian section of the gas pipeline from Russia to Greece and Turkey
- densification of national grids: building of the Sibiu – Sebes pipeline (\$ 10 mill) (Romania)
- gasification: foreign concessionaire for gas supply in eight cities in Cluj County (Romania. investments at \$ 35 mill)
- privatisation: sale of shares gas of gas distributor CONGAZ (Romania) to foreign shareholder
- construction of underground storage facilities in Romania (Craiova 2 bill. cm, Roman 1 bill. cm)
- exploration of Transylvanian gas deposits by a foreign investor (Romania)
- trade: liberalisation of gas imports by Bulgaria
- trade: swapping gas imports against exports of oil drilling equipment (Romania : Russia)
- grid: failure of a joint venture on gas imports due to denial of access to gas grid (Romania)

B. Prospects

Political stability, economic growth and energy reforms will generate further opportunities. The extension and densification of gas networks appears clearly as **the most important medium-term opportunity**. However, gas has to face

- vested interests in coal, nuclear and district heating
- hesitations as regards rising import dependence
- concerns about the import bill and the evolution of gas prices relative to other fuels
- delays in gas market reform

As a result, gas is likely to penetrate the market at the margin, beginning with decentralized, small-size CHP plants for industrial and residential customers, followed by inroads in those power generation markets, which coal or heavy fuel oil have to yield for reasons of environmental protection, for a significant refurbishment of plants or (coal) depletion of reserves.

Gas demand in SEE is expected to more than double (+ 126 %) between 1999 and 2020, or by 3.9 %/year. This is less than in the EU accession countries: + 150 % or 4.5 %/year².

Growth in Bulgaria is expected to be between 6.7 %/year to 2020 (see box) and 9.2 %³. Growth is driven by the residential sector where gas demand is expected to grow from practically nil in 2000

² European Commission, EU Energy outlook to 2020, Nov. 1999, p. 31

³ S. Ivanov, lecture given at the European Business Council, Berlin 2002

to 2.57 bcm in 2015. Investments in local distribution will amount to \$ 1.6 bill., to which another \$ 1.7 bill will need to be added to update customer gas installations. Gas prices, but not imports, have been liberalized since 1. 4. 2002.

Precondition for such a penetration is the extension and densification of gas networks and the creation of dispatching centres and storage facilities. Diversification of gas supplies is likely to be also a requirement, as governments appear to be wary of import dependence. Extension projects have been drafted and costed and await investors.

Examples:

- o extension of the gas pipeline Bulgaria – Macedonia – a) Greece – b) Albania – Italy (southern route) (\$ 115.3 mill. on Mac. territory)
- o alternatively extension of the gas pipeline Bulgaria – Macedonia – Albania (shortest route) (\$ 21 mill. on Mac. territory)
- o rehabilitation of the gas pipeline Macedonia – Kosovo. with possible extension to Montenegro, Bosnia and Herzegovina and Croatia
- o connecting the Greek and Albanian gas systems (Elbasan pipeline)
- o connecting the Bulgarian and Yugoslav systems at Nis (120 km) could provide the possibility for Yugoslavia to receive Russian gas by an alternative route and to take advantage of the large Bulgarian storage capacity
- o projects of gas transit pipelines from Iran/Caspian-Turkey-Greece-Italy or Yugoslavia-Slovenia/EU; in March 2002, an agreement was signed between Iran and Greece to extend the INOGATE (Interstate Oil and Gas Transport to Europe gas pipeline) from Ankara to Komotini in Greece, with possible extension to Italy (€ 342 mill.)
- o setting-up of a gas dispatch and control centre in Macedonia (\$ 2.5 mill.)
- o new LNG terminal in Attica (Greece)

	1999	2010	2020
Rom.	15.4	29.5	31
Mac.	0.03	0.9	1.1
Croatia	2.5	3.5	3.7
Bulg.	3.0	8.4	11.6
Total	20.9	42.3	47.4

Source: 2000: IEA Energy balances for non-OECD countries, 2001 ed.; for 2010 and 2020: V. Kunev, Reform and restructuring of the gas industry in South-Eastern Europe, Sofia, 1999

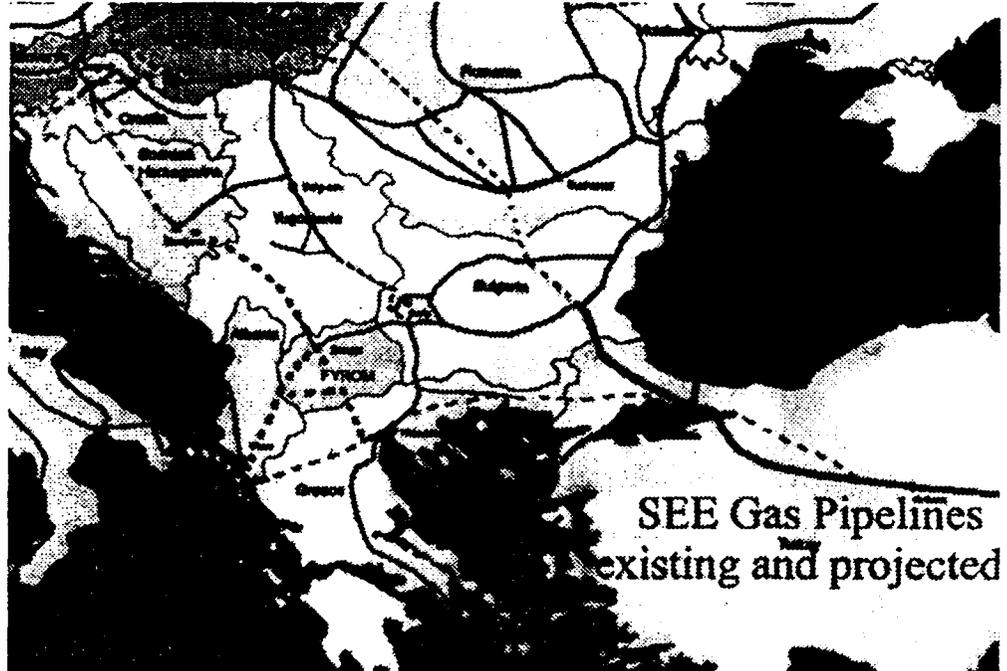
The map lists all major international projects in the region whatever their prospects of realization. Its analysis calls for the following comments:

- o bearing in mind that the expected growth rates of gas demand in the region is (only) 3.9 %/year and that gas demand from the EU is not likely to occur massively before 2010 or may even be soaked up by the Russia – Slovakia – Hungary – Slovenia – Italy project, the proposed infrastructure may correspond to needs as of 2015, but certainly exceeds short- and medium-term demand. There will, thus, need to be a selection, hence competition between projects and transit countries.
- o the main axes of gas flows will be north-south with Russia as main supplier, and east-west with supplies from Iran and the Caspian (later from the Middle East). Both axes aim at southern Italy as final destination, as gas demand on the route may not fully justify the investment. As can be seen, the Turkey -northern Greece – Italy route competes with the Russia - Bulgaria – northern Macedonia – Albania route. It is as yet unclear whether both routes would merge at the coast or pursue their way to Italy separately.
- o The south-east north-west axis Turkey – Bulgaria – Romania – Western Europe would add to the diversification of the latter, but meets with competition from the equally planned Russia – Slovakia – Slovenia – Italy project.
- o The implementation of the projects in former Yugoslavia depends on the economic recovery and restructuring, - a matter of the medium-term.

- Bulgaria lies at the crossroads of the north-south and south-east north west axis, but seen the emerging Turkey-Greece-Italy route, will have to see to it that it safeguards its role as a transit country.

IV. SUMMARY

In South-East Europe, the political, legislative, regulatory and commercial risks are and will remain higher than in the more advanced reforming countries for up to a decade, i. e. they will be similar to emerging markets. At the same time, **business opportunities in the gas sector are already now numerous and exploited**. They will be even more attractive in the medium-term (extension and densification of gas networks) and plentiful in the long-term (inter-regional gas trade).



Indeed, infrastructure projects abound in the gas sector, despite obstacles in terms of delayed reforms, low demand and policy constraints due to vested interests in coal and nuclear and concerns about future gas prices and import dependence.

The future appears "moderately" promising. On condition of prior grid extension, gas demand will more than double till 2020. Growth will be

- first in the industrial and residential sector
- next in those power generation markets, which coal or heavy fuel oil have to yield for reasons of environmental protection, for a significant refurbishment of plants or (coal) depletion of reserves

- and finally in long-distance inter-regional gas trade, with SEE, and Bulgaria, acting as a transit region.

The issue is the comparatively modest growth of gas demand and, subsequently, the geographical and temporal optimisation of the competing international infrastructure projects in the region.

Such an optimisation will certainly conflict with the interests of competing gas suppliers and transit countries. A EU initiative, associated with financial incentives, might attenuate those tensions.

Otherwise, it would be the early bird who catches the fly.

