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MASTER
THE 10TH EUROPEAN GAS CONFERENCE
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**CENTRAL EUROPEAN
GAS MARKET PERSPECTIVES**

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Central European Gas Market Perspectives*

by

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* Presentation for the 10th European Gas Conference
in Oslo, Norway, May 11-12, 1999

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Definition of the Central European market

- Eleven countries of Central and Eastern Europe
 - Albania
 - Bulgaria
 - Croatia
 - Czech Republic
 - Hungary
 - Macedonia
 - Poland
 - Romania
 - Serbia & Montenegro
 - Slovakia
 - Slovenia
- Total population: 121 million
- 1998 GDP: \$395 billion at current exchange rates or about \$750 million at PPP exchange rates
- Market comparable to combined France and Italy in terms of population but only 30 percent of its size in terms of GDP (at PPP rates)

Factors driving up consumption of natural gas in Central & Eastern Europe

- Economic recovery in the region reviving growth of overall energy consumption
- Coal at a growing disadvantage because of rising domestic production costs and due to environmental considerations (mining damage, sulfur and other emissions)
- Natural gas increasingly attractive fuel (clean, highly flexible, easily transportable, low associated capital cost)
- Expected strengthening of East European currencies in relation to the dollar in real effective terms causes the price of natural gas to drop significantly in local currency terms and on inflation-adjusted basis
- By 2005 or so, natural gas looks like an increasingly attractive fuel for power generation

Role of natural gas in regional energy consumption

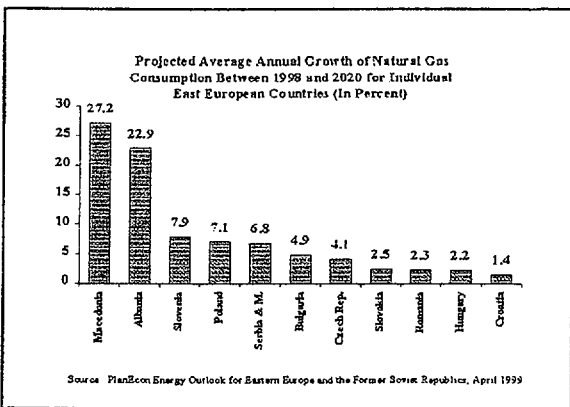
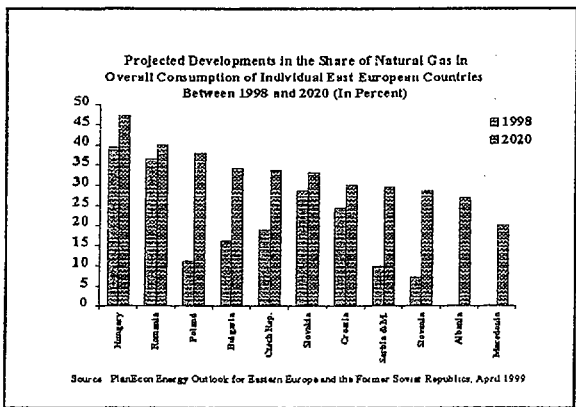
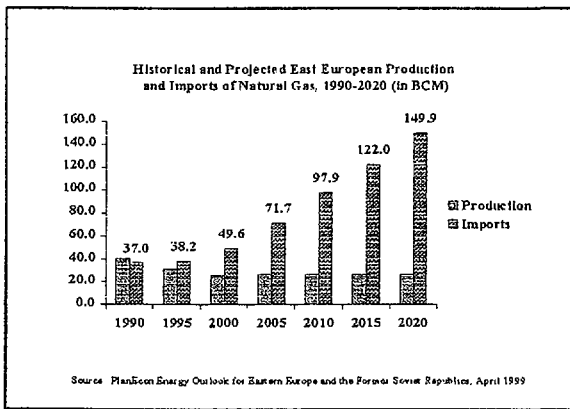
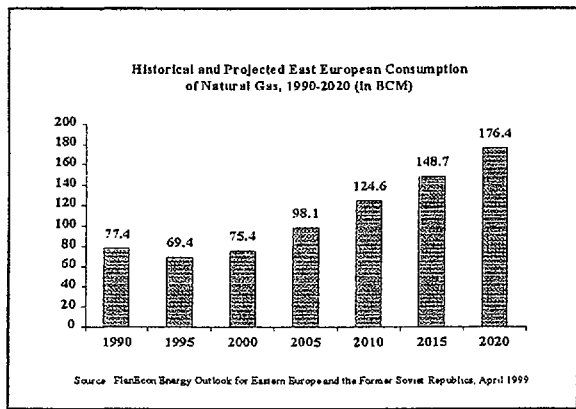
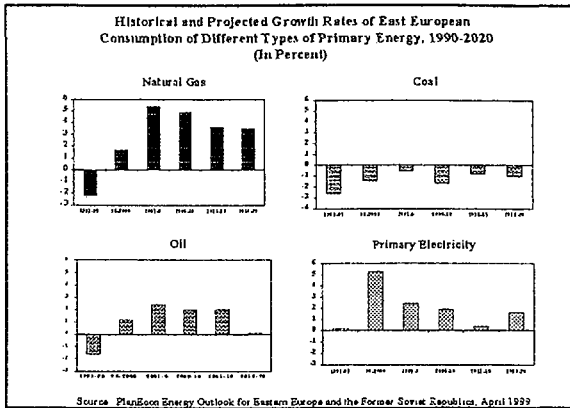
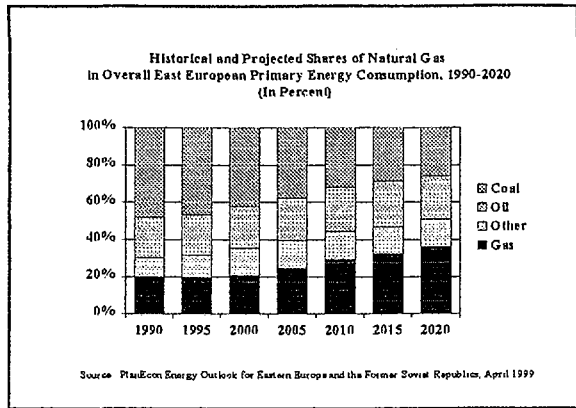
- Share of natural gas projected to rise from 20 percent in 1990 to over 36 percent by 2020
- Coal absorbs the impact of the gain by natural gas—its share drops from 48 percent to under 26 percent during the same period
- Natural gas is the only type of primary energy with steady high long-term growth—4.3 percent annually during 2001-20 compared to 1.6 percent both for oil and primary electricity, and 1.0 percent drop for coal
- Projected regional gas consumption should increase by more than 100 bcm between 2000 and 2020
- With stagnant domestic production (around 26 bcm), imports of natural gas should triple from 50 to 150 bcm between 2000 and 2020

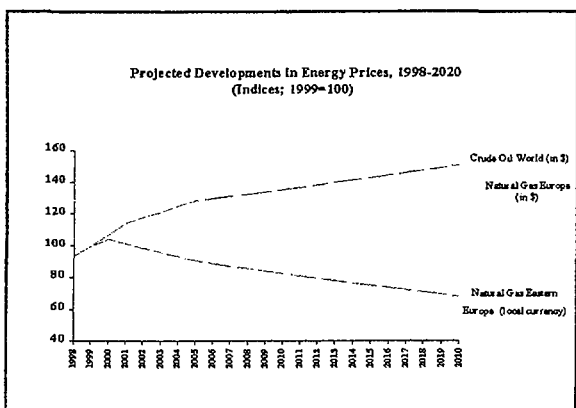
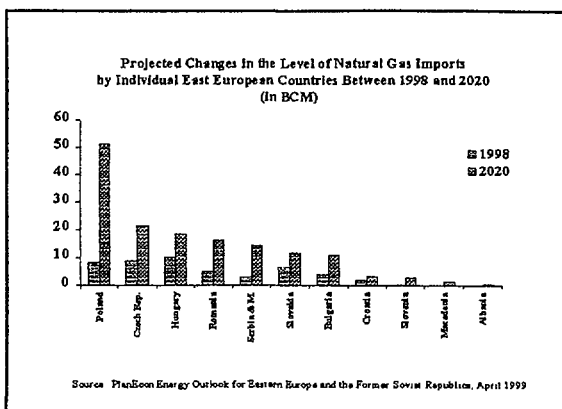
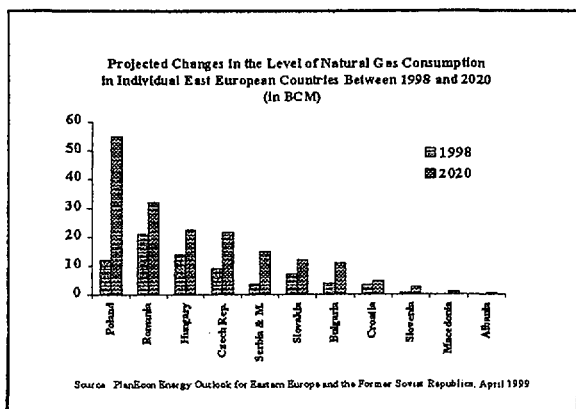
Position of natural gas in individual country markets

- By 2020, natural gas will account for at least 20 percent of overall energy consumption in every country, with top level of 47 percent reached in Hungary and regional average around 35 percent
- More than tripling of the share of natural gas in Poland from 11 percent at present to 38 percent by 2020 is particularly notable
- Above-average growth in gas consumption (over 4.0 percent annually) will occur in countries starting from extremely low level of gasification (Macedonia, Albania) and five other countries (Slovenia, Poland, Serbia & Montenegro, Bulgaria, and Czech Republic)
- In absolute terms, big increases in gas consumption occur in Poland (43 bcm between 1998 and 2020), Czech Republic (12-13 bcm), Serbia & Montenegro (11-12 bcm), Romania (11 bcm), and Hungary (8-9 bcm)
- From the viewpoint of exporters, the key markets to watch are Poland (43 bcm increase in imports between 1998 and 2020), Czech Republic (12-13 bcm), Serbia & Montenegro (11-12 bcm), Romania (11 bcm), and Hungary 8-9 bcm)

Future sources of imported natural gas into the region

- What the Russians would find acceptable
 - Russia's share in regional market does not drop below 80 percent mark by 2020
 - Russian gas deliveries rise from around 47 bcm in 2000 to close to 120 bcm by 2020
 - West European deliveries do not rise above 20 bcm over the next two decades
 - Caspian gas reaches the region only through Russia and does not exceed 10 bcm
- What other suppliers are hoping for
 - Russia's market share is reduced from around 92 percent in 2000 to 60 percent by 2020
 - Russian gas deliveries less than double over the next two decades to close to 90 bcm
 - West European deliveries reach at least 30 bcm by 2020 and possibly more if no Caspian gas can be delivered through Turkey
 - Caspian gas deliveries to the region rise from zero at present to 30 bcm by 2020, of which about one-half is delivered through Russia and the other half through Turkey
- Conflicting targets suggest rising tensions over this market between Russia and West European suppliers on one hand and Russia and Caspian suppliers on the other hand
- East Europeans may benefit from these tensions as three potential suppliers strive to boost their market shares





Projected Breakdown of East European Natural Gas Imports by Source, 1990-2020 (in BCM)

What the Russians Would Find Acceptable

	Total	Russia	Western Europe	Caspian (through Russia)	Caspian (through Turkey)
1990	37.0	37.0	0.0	0.0	0.0
1995	38.2	38.2	0.0	0.0	0.0
2000	49.6	47.1	2.5	0.0	0.0
2005	71.7	64.2	5.0	2.5	0.0
2010	97.9	82.5	10.0	5.0	0.0
2015	122.0	99.3	15.0	7.5	0.0
2020	149.0	119.0	20.0	10.0	0.0

Projected Breakdown of East European Natural Gas Imports by Source, 1990-2020 (in BCM)

What Other Suppliers Are Hoping For

	Total	Russia	Western Europe	Caspian (through Russia)	Caspian (through Turkey)
2000	49.6	45.4	3.0	1.0	0.0
2005	71.7	59.2	7.3	5.0	0.0
2010	97.9	67.9	15.0	10.0	5.0
2015	122.0	77.0	22.3	12.5	10.0
2020	149.0	89.0	30.0	15.0	15.0