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IENE INSTITUTE OF ENERGY FOR SOUTH-EAST EUROPE

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Republic of Serbia Perspective of Natural Gas Supply Corridor to Europe

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Position of Serbia in SEE Gas Network

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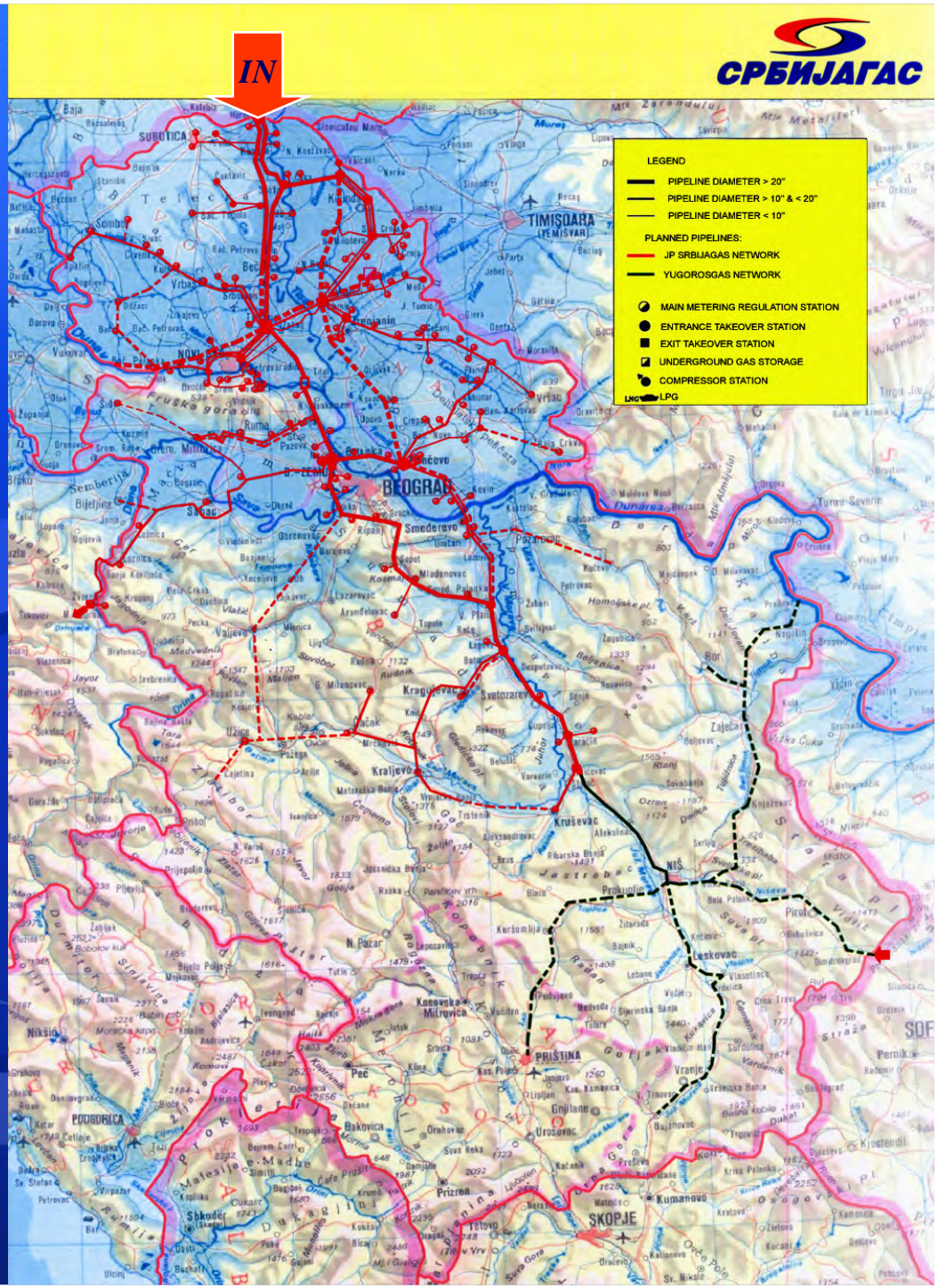
Natural Gas Network System *Basic Data*

- Maximum Capacity 6.1 bcm/y
- Maximum Pressure 50 bar
- High pressure pipeline

  total lenght 2135 km
- Pipeline Diameter range

  DN 150 to DN 750
- Avarage pipeline age: 30 years
- 533 Metering Regulating Stations, capacity range from 100 to 100.000 Sm3/h



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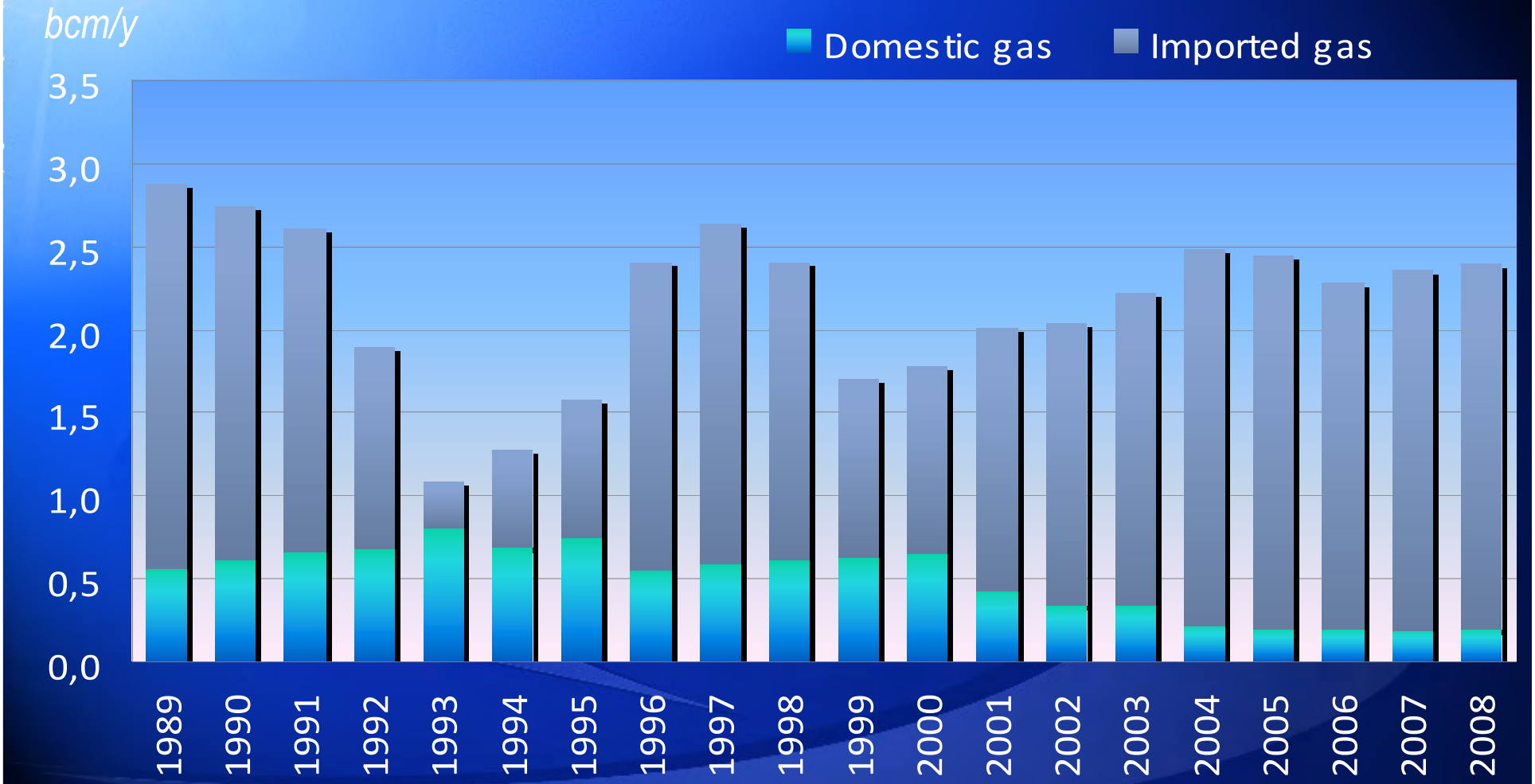
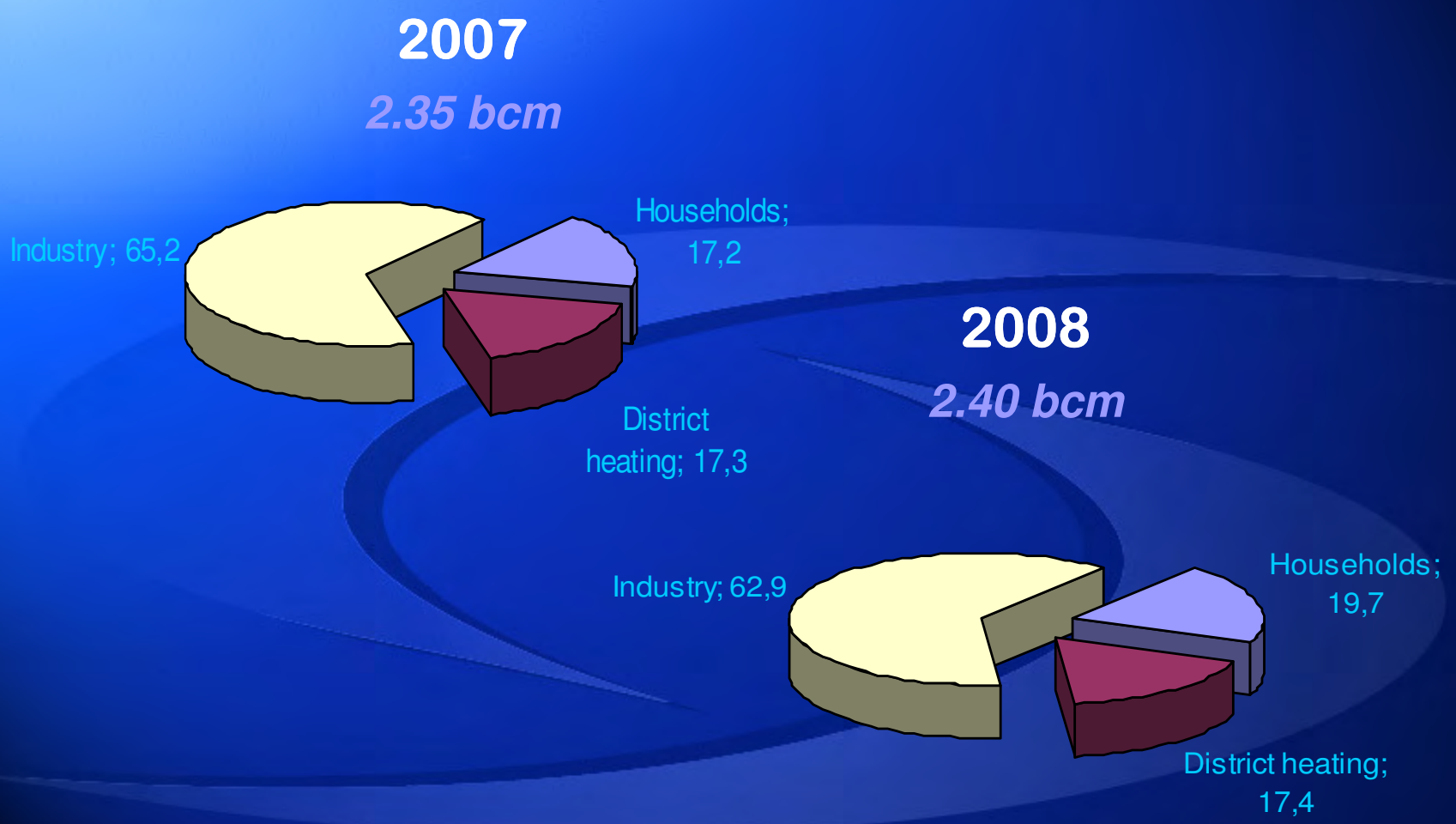
Natural Gas Consumption in the period 1989 - 2008



Natural gas consumer structure in Serbia



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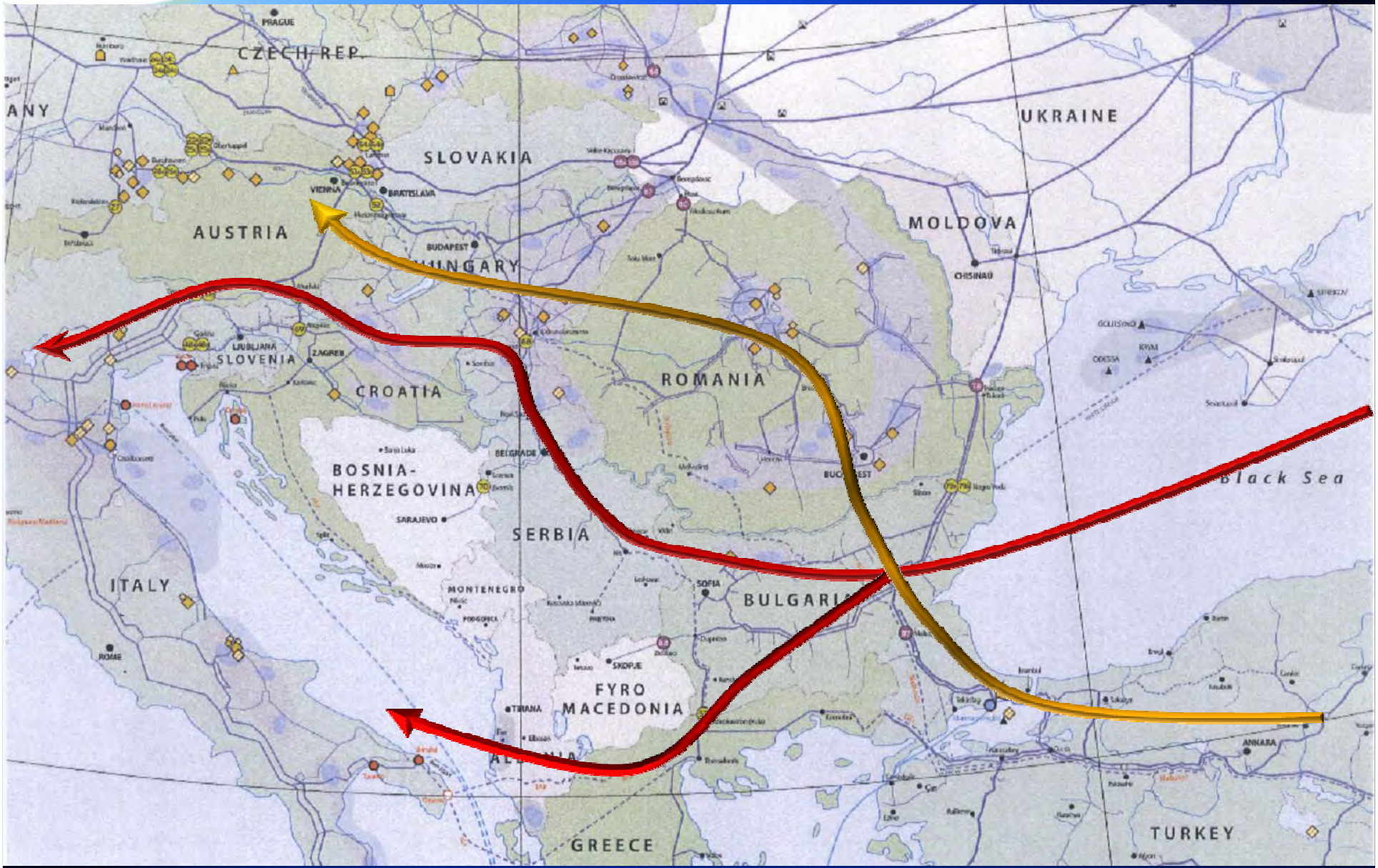
New Planned Supply Routes across the Region



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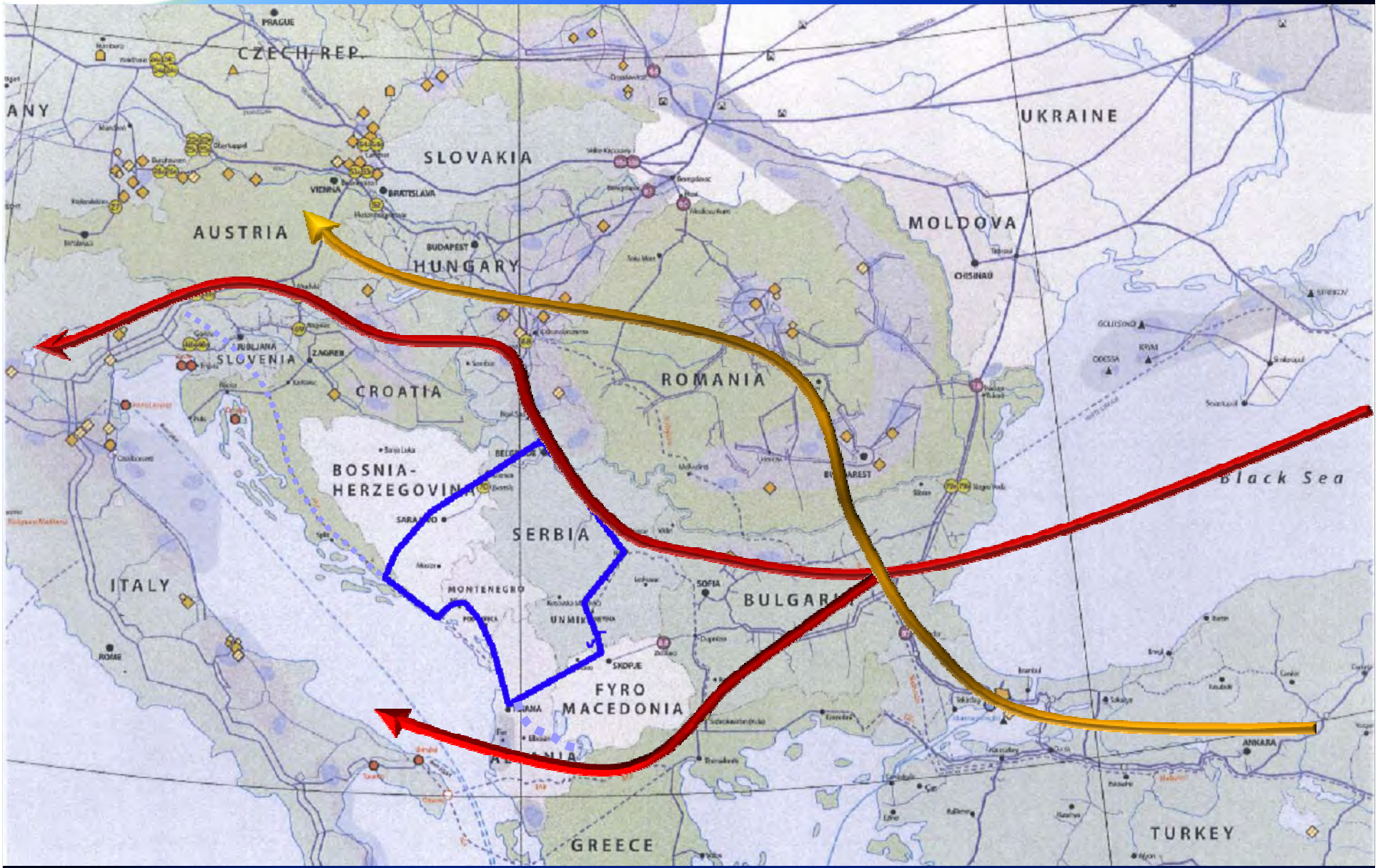
Energy Community Gas Ring Concept



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INTERCONNECTION OUTLOOK

Hungary
Horgoš - Kiškundorožma

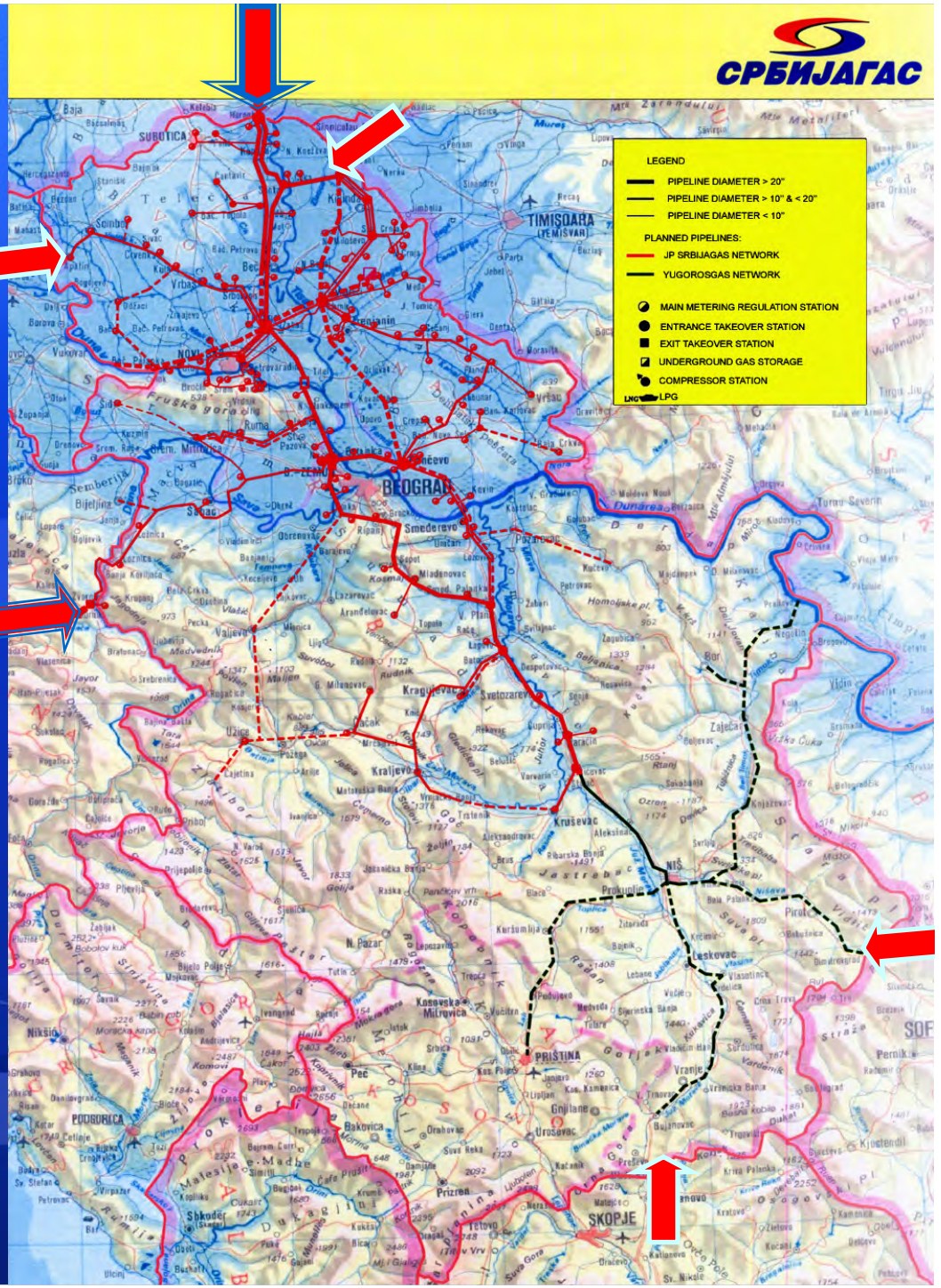
Romania
Mokrin -- Arad

Croatia
Sombor – Osijek,
Bačka Palanka – Ilok,
Sremska Mitrovica (Šid) – Vinkovci
Bač – Sotin.

Bosna and Hercegovina
Loznica-Zvornik
Mačvanski Prnjavor- Bijeljina

Bulgaria
Niš- Sofija

FYRM
Niš-Kumanovo



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Interconnection with Hungary

- Interconnection Status: Exists
- Interconnection location: Kishkundorožma (Hungary) – Horgoš (Serbia)
  - Daily Capacity up to 14 mcm

- Import directions:
  - Beregovo (Ukraine) – Horgoš (Serbia)
    - Through this direction natural gas is transported from Russian Federation, via Ukraine and Hungary to Takeover station in Horgoš, on Hungary-Serbia border
  - Baumgarten (Austria) — Horgoš (Serbia)
    - Technical characteristics depend on available capacities in Hungary

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Interconnection with Romania

- Interconnection Status: Initiated by the intergovernmental Protocol
  - Daily Capacity up to 4.4 mcm
- Interconnection location:
  - Arad (Romania) – Mokrin (Serbia)
    - Pipeline lenght: 76 km
    - Pipeline diameter: 600mm
    - Takeover pressure: > 40 bar

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Interconnection with Croatia

- Interconnection Status: Analyze in progress
- Potential Interconnection locations:
  - Osijek (Croatia) – Sombor (Serbia)
  - Ilok (Croatia) — Bačka Palanka (Serbia)
  - Vinkovci (Croatia) – Sremska Mitrovica (Serbia)
  - Sotin (Croatia) – Bač (Serbia)
- Reverse flow option planned

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Interconnection with Bosnia and Herzegovina

- Interconnection Status: Exists
  - Transport route: Batajnica (Serbia) – Zvornik (B & H)
  - Pipeline capacity: 750 mcm/y

- Potential Interconnection route:
  - Transport route: Batajnica (Serbia) – Mačvanski Prnjavor (Serbia) - Bijeljina (B & H)
  - Pipeline capacity: up to 1.2 bcm/y

Notice: this interconnection provides supply route for the new pipeline in Republika Srpska : *Bijeljina – Banja Luka – Novi Grad*

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Interconnection with Bulgaria

- Interconnection Status: Project documentation available

- Interconnection location:

  Sofia - Dupnica (Bulgaria) – Dimitrovgrad (Serbia) – Niš

  - Pipeline Capacity 1.8 bcm/y
  - Pipeline length 108 km
  - Pipeline Diameter 720 mm
  - Takeover Pressure 55 bar

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Interconnection with FYRM

- Interconnection Status: Analyze in progress
- Interconnection location:

Kumanovo (FYRM) – Leskovac (Serbia) – Niš

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Gasification in Serbia

- Progress Report -

- Underground Storage Banatski Dvor

- High Pressure Gas Network System Development

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Underground storage Banatski Dvor

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Underground storage Banatski Dvor

- Progress Report -

- Injection line for 1st stage finished
- Technological production line for preparation, drying and dispatch of the stored natural gas into the gas pipeline system under construction
- 42 km-long bidirectional gas pipeline Gospodjinci-Banatski Dvor under construction
- Capacity:
  I phase 300 milion m^3
  II phase 800 milion m^3

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High Pressure Gas Network Development

- Introduction -

- Energy Strategy of the Republic of Serbia and National Gasification Action Plan define investments in development of high pressure natural gas system of Serbia in amount of 840 mil USD till 2015.
- Started in 2007, Serbian Government financing program NIP (National Investment Plan). financed 13 projects to the amount of 32 million euro.
- Joining the “South Stream” Project, development of the prime natural gas pipeline system of Republic of Serbia becomes one of the ultimate infrastructure projects.

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High Pressure Gas Network Development

- Project goals -

- Equal sustainable economic development of Serbia regions.
- Encourage clean and efficient gas utilisation to improve local conditions and contribute to a reduction of greenhouse gas emissions.
- Providing conditions for reliable, competitively priced energy deliver to local industry.
- Providing and maintaining economically viable conditions for necessary investments enableing local community prosperity.

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High Pressure Gas Network Development

- Project benefits users -

- Industrial sector,
- Commercial and Communal Facilities,
- Agriculture / Health food production,
- Households,
- Tourism,
- Traffic - CNG

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High Pressure Gas Network Development

- Project Scope -

- Prime infrastructure for gas supply of 60 municipalities in Serbia:
  - construction of more then 1400 km of high and medium pressure gas pipelines,
  - construction of more then 50 Main Metering Regulating Stations
- Estimated investment cost: 340 mil EURO.

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Regional concept of the Project

No.	Title	Beneficiary of the Constructed Gas Pipeline
1	Regional Gas Pipelines of the Kolubara and Macva Region	Municipalities of Barajevo, Obrenovac, Ub, Koceljeva, Vladimirci, Lajkovac, Lazarevac, Mionica, Ljig, Valjevo, Osečina, Krupanj
2	Regional Gas Pipelines of the Zlatibor Region	Municipalities of Čajetina, Priboj, Prijepolje, Nova Varoš and Sjenica
3	Regional Gas Pipelines of the Rasina and Raska Regions and the Municipalities of North Kosovo and Metohija	Municipalities of Aleksandrovac, Brus, Raška, Novi Pazar, Tutin, Leposavić, Zvečan, Mitrovica and Zubin Potok
4	Regional Gas Pipelines of the Branicevo Region	Municipalities of Smederevo, Požarevac, Malo Crniće, Petrovac, Kučevo, Majdanpek, Veliko Gradište, Golubac and Žagubica

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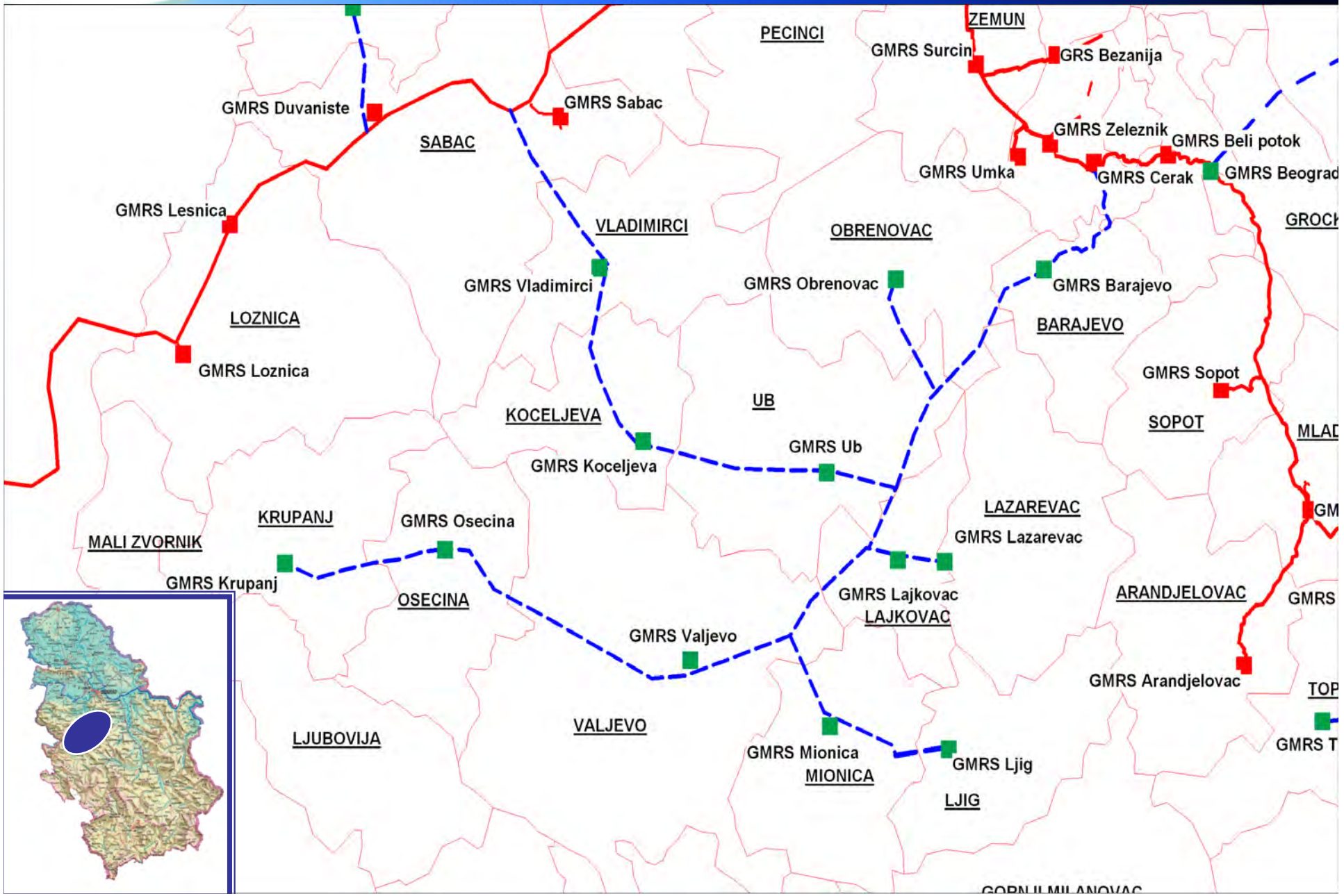
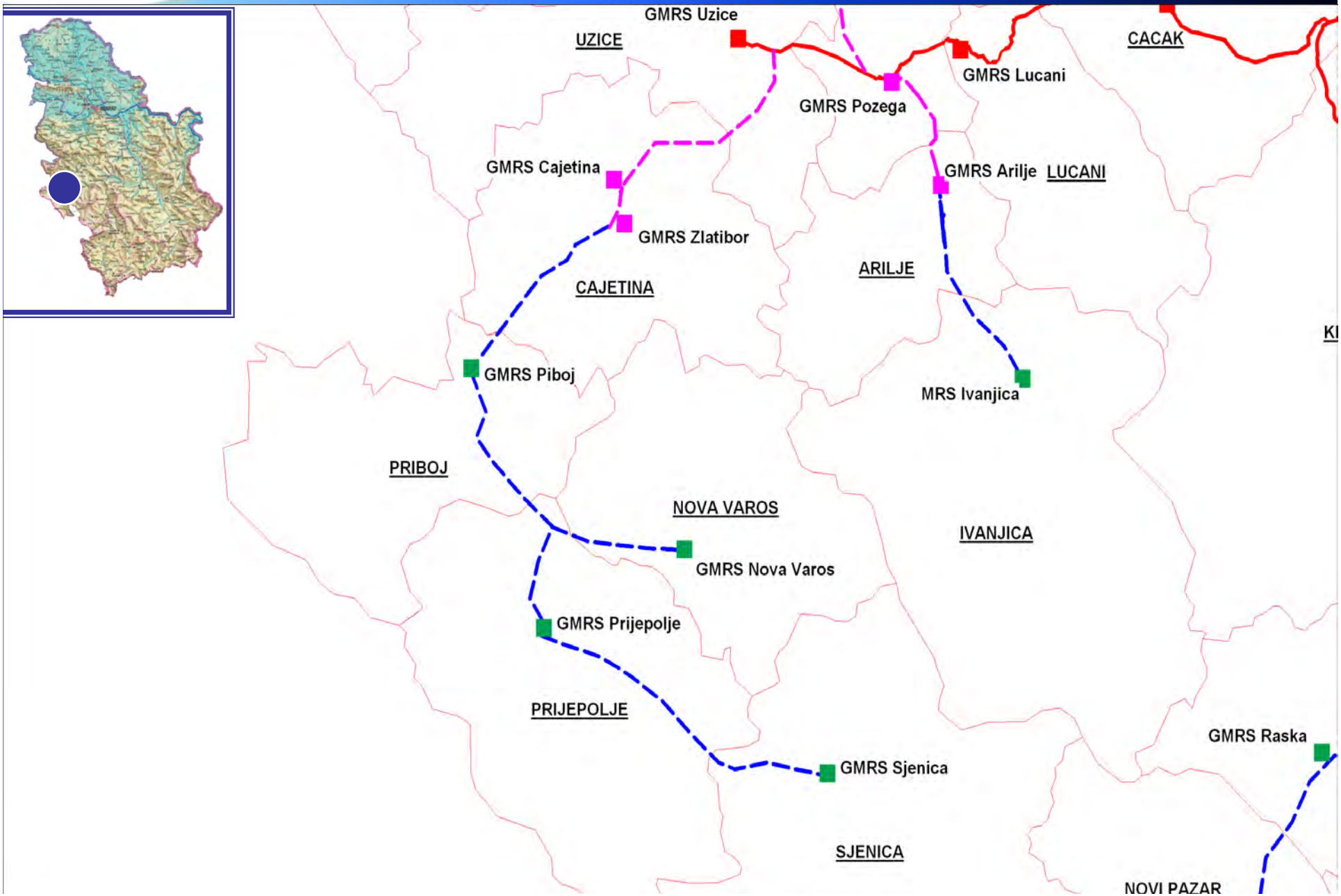
Regional Gas Pipelines Region Kolubara and Mačva



Regional Gas Pipelines Region Zlatibor



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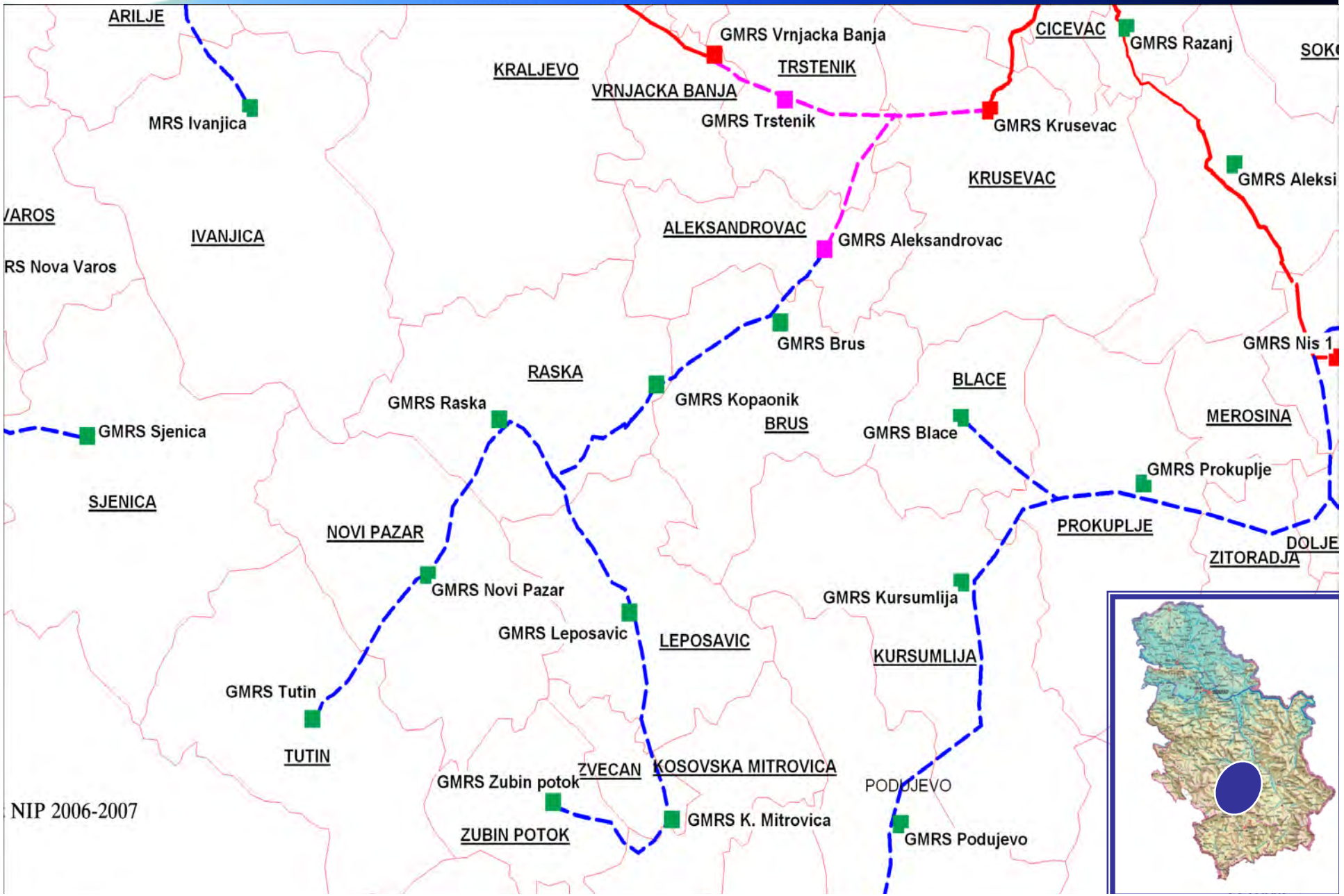
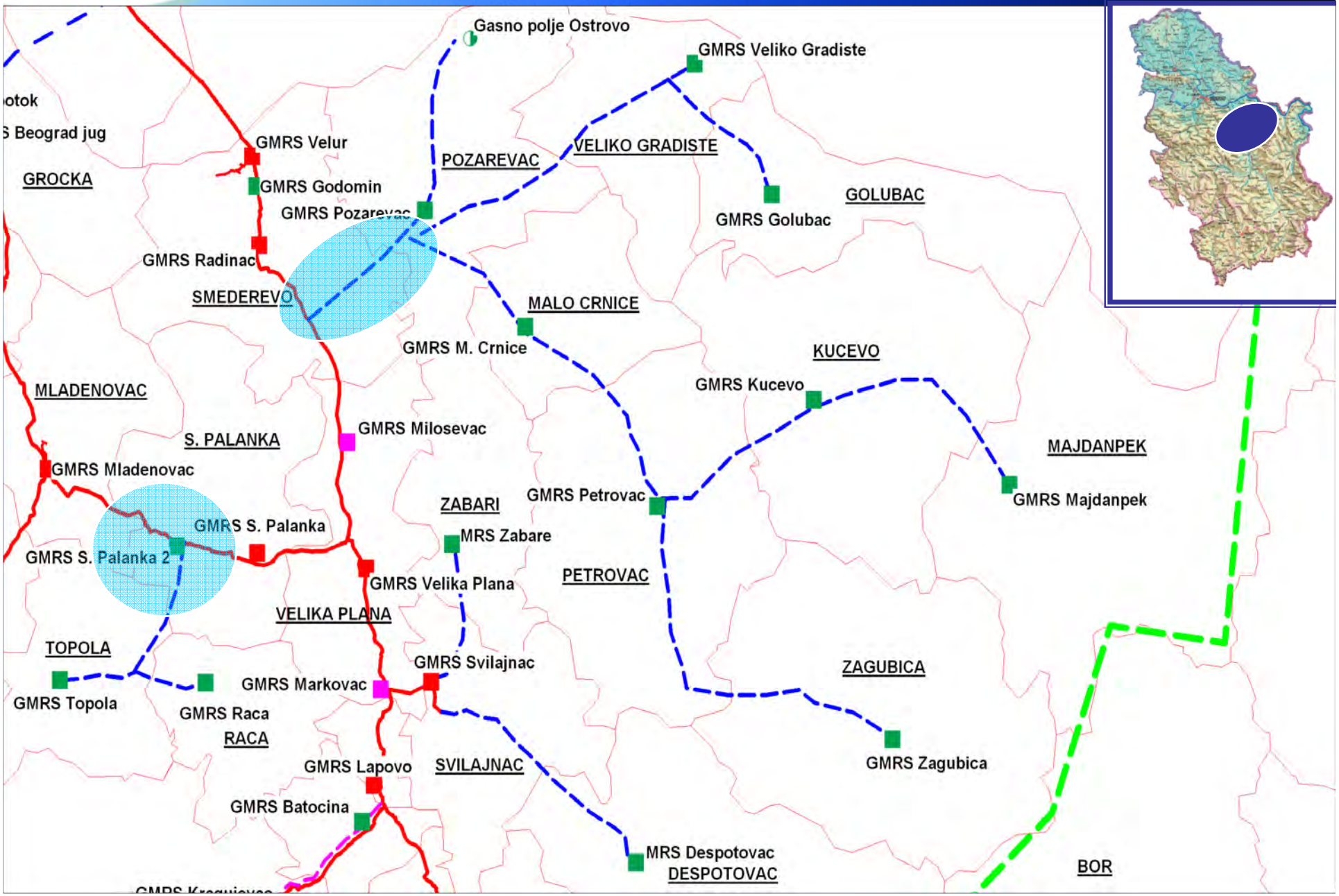
Regional Gas Pipelines in the Region Rasina and Raška



Regional Gas Pipelines in the Region Braničevo



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RESUME

General comment:

- Each single gas SEE market is relatively small
- Regional approach provides a sound basis for development
- Harmonized time schedule within Balkan states provides advantages for regional security of supply
- Perspective of new gas corridors across the region should encourage not only internal gas infrastructure development but interconnection projects as well
- Interconnected region is benefit not only for Balkans but also for the entire Europe energy security

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Thank You on your attention

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