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# **Infrastructure Development in Southeastern Europe**

*Opportunities for Energy Cooperation and Investment*

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## **Main Topics**

- **Energy As Critical Sector for Regional Economic Cooperation**
- **Overview of Energy Community**
- **National Reforms and Roadmaps**
- **Electricity Investment Issues and Opportunities**
- **Gas Sector Development and European Diversification**
- **Future Directions**

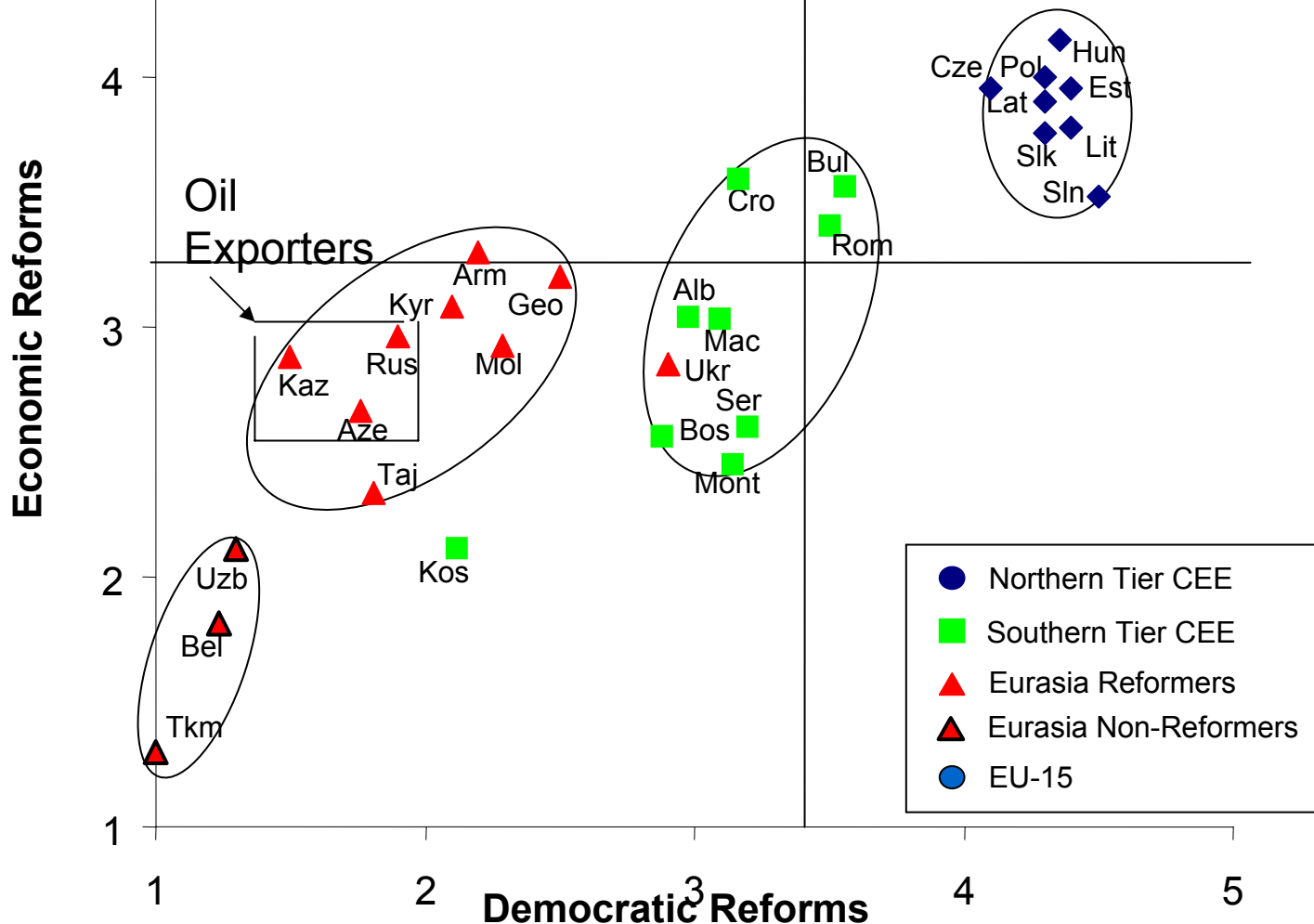


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● EU-15

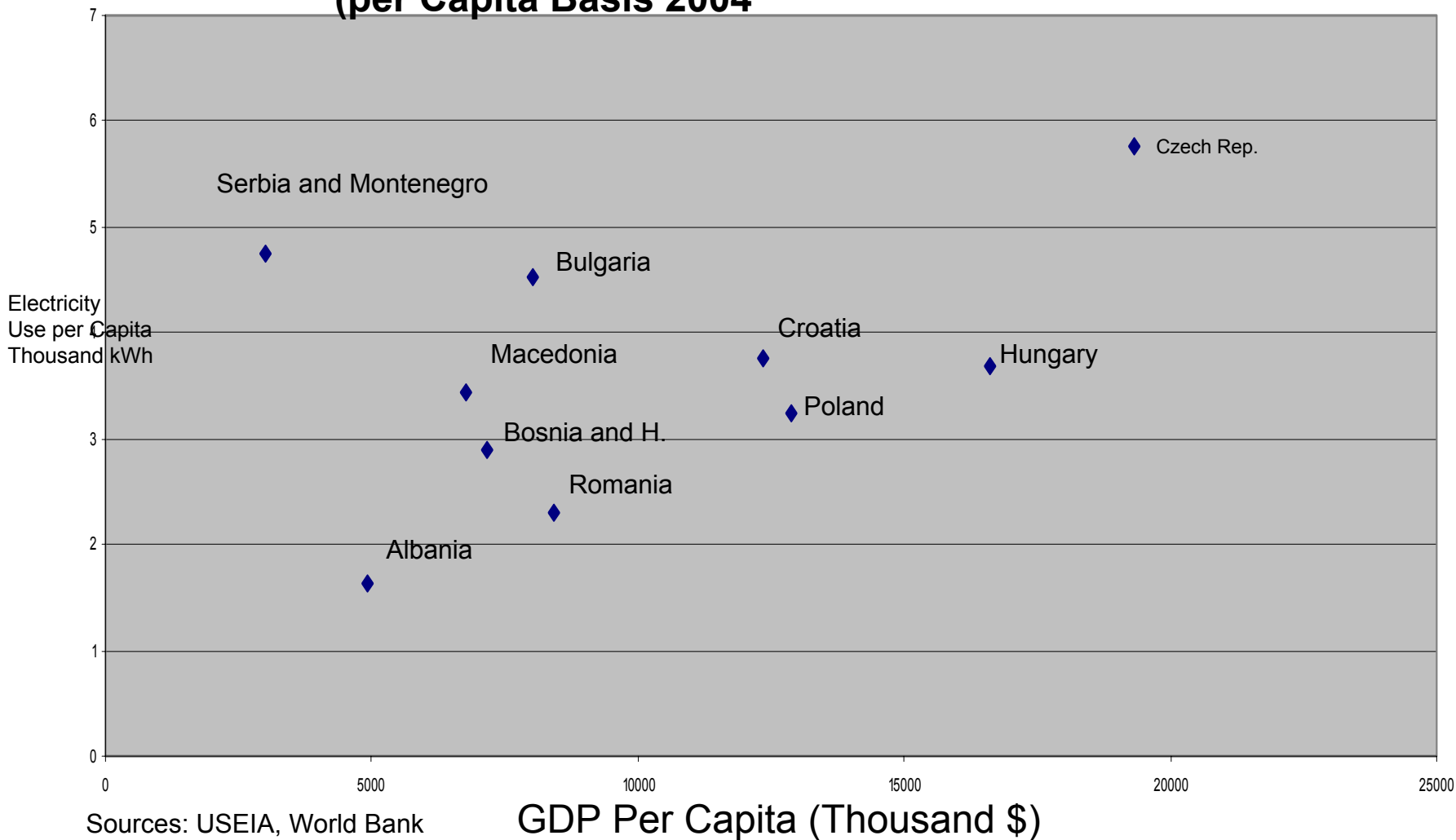
# Economic and Democratic Reforms in 2005





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## Electricity Consumption vs. GDP in Southeast Europe (per Capita Basis 2004)





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## **Energy As Critical Economic Sector for Regional Cooperation**

- Sector provides foundation for economic growth and trade; is important politically and in terms of national and European security;**
- Although net oil and gas importer, region has significant coal and hydro resources; potential for renewables (e.g. wind) looks promising as well;**
- Current focus on region as transit corridor for oil and gas from Caspian, Middle East and N. Africa and several transit pipeline projects are planned by investor consortia;**
- Region was synchronously interconnected in October 2004 with UCTE grid opening up major trading opportunities;**
- Strong nuclear industry capacities in Romania and Bulgaria;**
- Cooperative efforts under Athens Treaty to establish a larger competitive market integrated with EU Internal Energy Market provides an attractive framework for investors**



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## Overview of Energy Community

- Athens Treaty for Energy Community signed last October and went into force on July 1, 2006
- Contracting Parties include Croatia, Bosnia and H., Albania, Macedonia, Serbia, Montenegro, Bulgaria, Romania and UNMIK
- EU countries can apply to become participants
- Creates Ministerial Council, Permanent High Level Committee, Regulatory Board, Secretariat, and Forum
- Parties agree to adopt EU Energy, Environmental and Competition Directives
- Treaty sets target of 2008 for non-residential electricity and gas market opening and 2015 for full liberalization
- Coordinated Donor Effort with Stability Pact



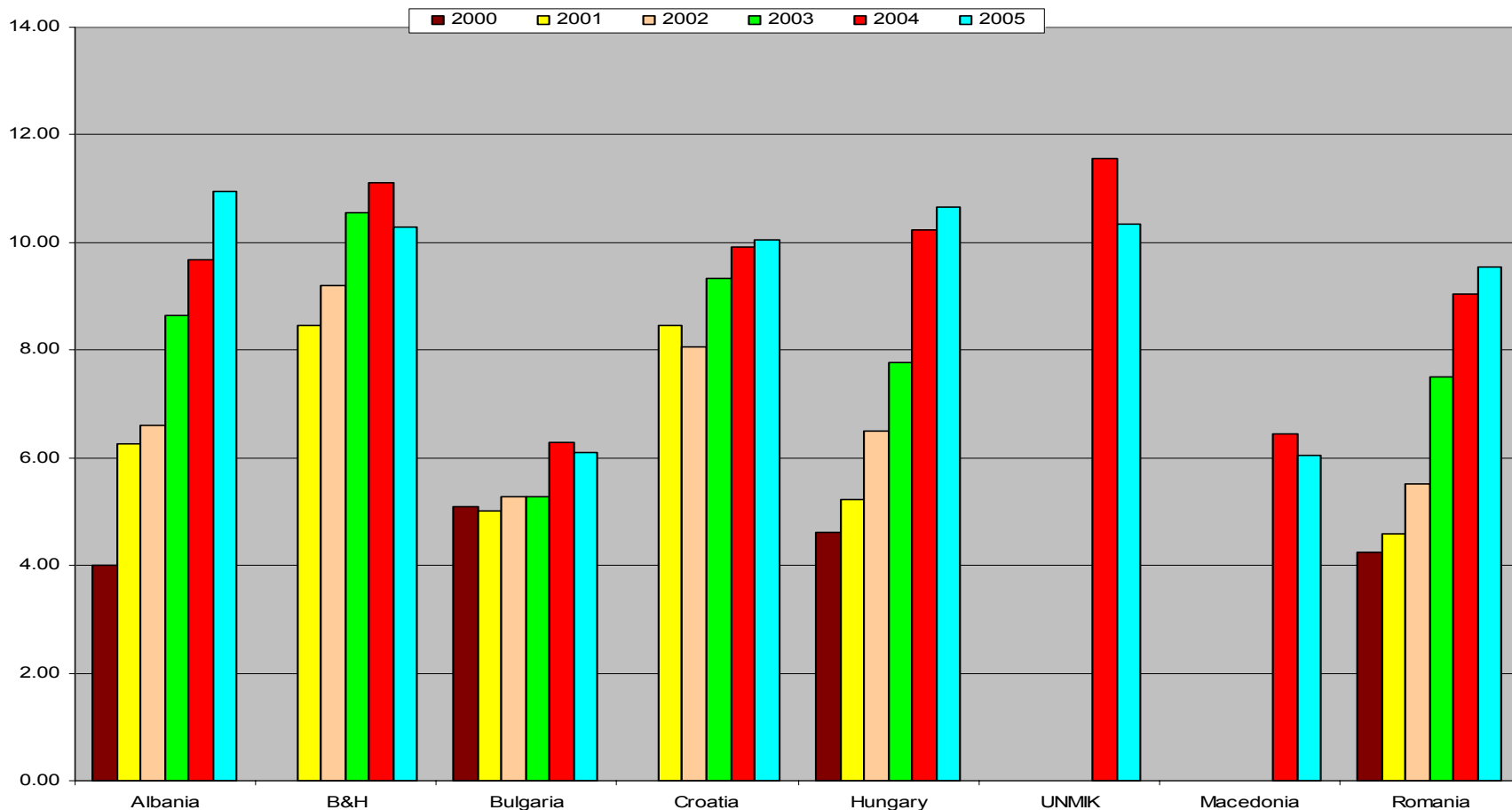
## National Reforms and Roadmaps

- **Legal and Regulatory Development**
  - Progress in modernizing laws and establishing national energy regulators. Benchmarking of regulatory authority, accountability, and autonomy.
- **Restructuring and Corporatization**
  - Restructuring and unbundling of vertically-integrated utilities to meet EU Directives is underway or completed. The independence of the Transmission System Operator is an issue.
- **Commercialization and Tariff Rationalization**
  - Poor collections and inefficient commercial operations remains a problem in some countries and regions. New tariff analysis shows problems in cross-subsidies.
- **Market Design, Implementation and Financial Settlements**
  - Non-residential market opening is beginning but the transition to bilateral contracts and regulated third-party access regimes will take time in some countries. Increased transparency, better systems of accounts and financial reporting, and improved procurement and congestion management procedures are needed.
- **Privatization and Investment**
  - Romania, Bulgaria, and Macedonia have successfully privatized most distribution and they are now focused on generation. Albania has adopted policy to privatize distribution. Kosovo and Bosnia and H. are seeking investors in lignite and hydro. World Bank \$1 billion Electricity APL.
- **Social Safety Nets**
  - Athens Process has a social responsibility working group. Major efforts needed in this sphere especially given increases in energy prices. USAID focused on potential for low income energy efficiency.



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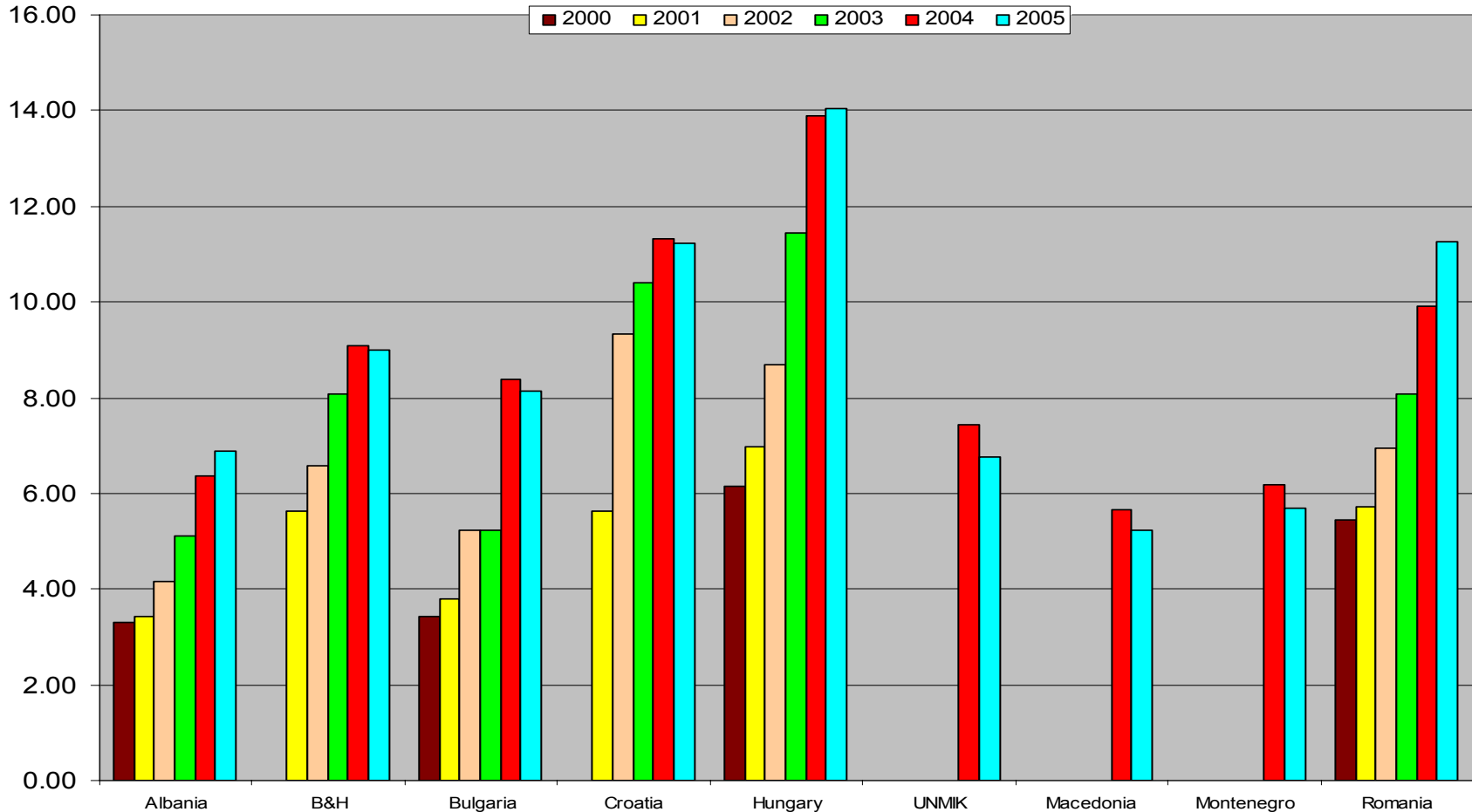
### 4th Quarter Electricity Tariff (US cents/kWh) for Non-Residential Sector in SEE





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### 4th Quarter Electricity Tariffs (US cents/kWh) for Residential Sector in SEE





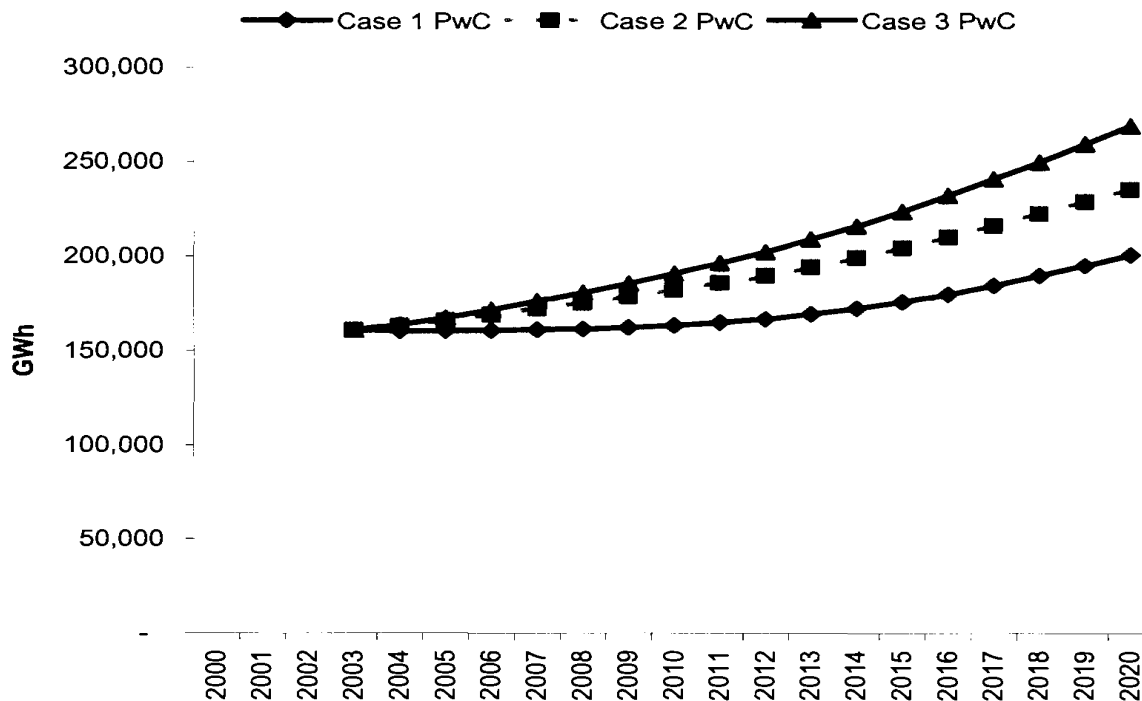
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## **Electricity Investment Issues and Opportunities**

- **Institutions and Market Framework are in transition: Key Issue for Investors: Stability, Consistency and Predictability of Regulatory Framework and Institutions**
- **Current market is tight and concerns over impact of Kozluduy 3-4 closure on winter supplies and prices.**
- **Generation Investment Study indicates need for substantial investment (37.6 billion euros in one scenario) by 2020.**
- **Resolving status of Kosovo will be key to development of low-cost lignite which was shown to be attractive as a least-cost regional option.**
- **Further nuclear development is being pursued at Cernovoda and Belene in Romania and Bulgaria.**
- **AES and ENEL are involved in new lignite-fired generation units in Bulgaria**
- **Investors are showing interest in lignite and hydro resources in Serbia and Bosnia and H.**
- **Adequacy and Transparency of the Transmission System continues to be an issue and new criteria and analyses are underway, including coordinated capacity auction test**
- **Gas-fired CHPs are needed but high gas prices are working against them.**



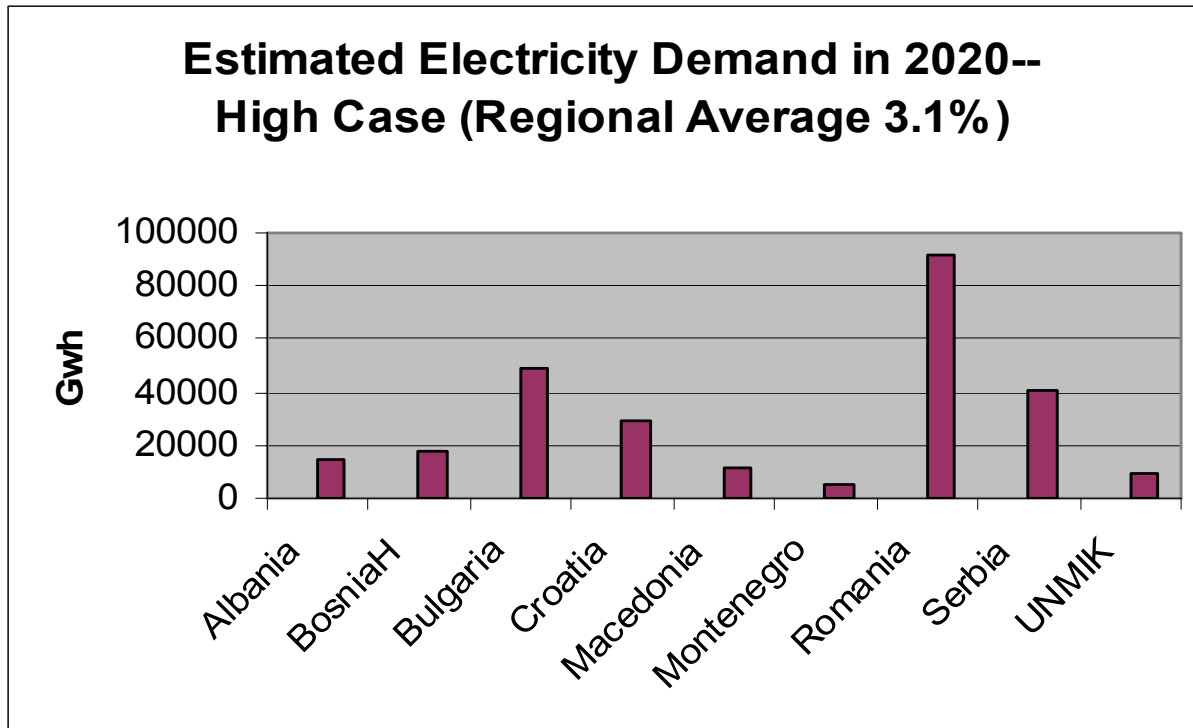
**Figure 2.20 SEE Region: Gross electricity demand: projections to 2020**



Comparison: California generated 195,000 GWh in 2004



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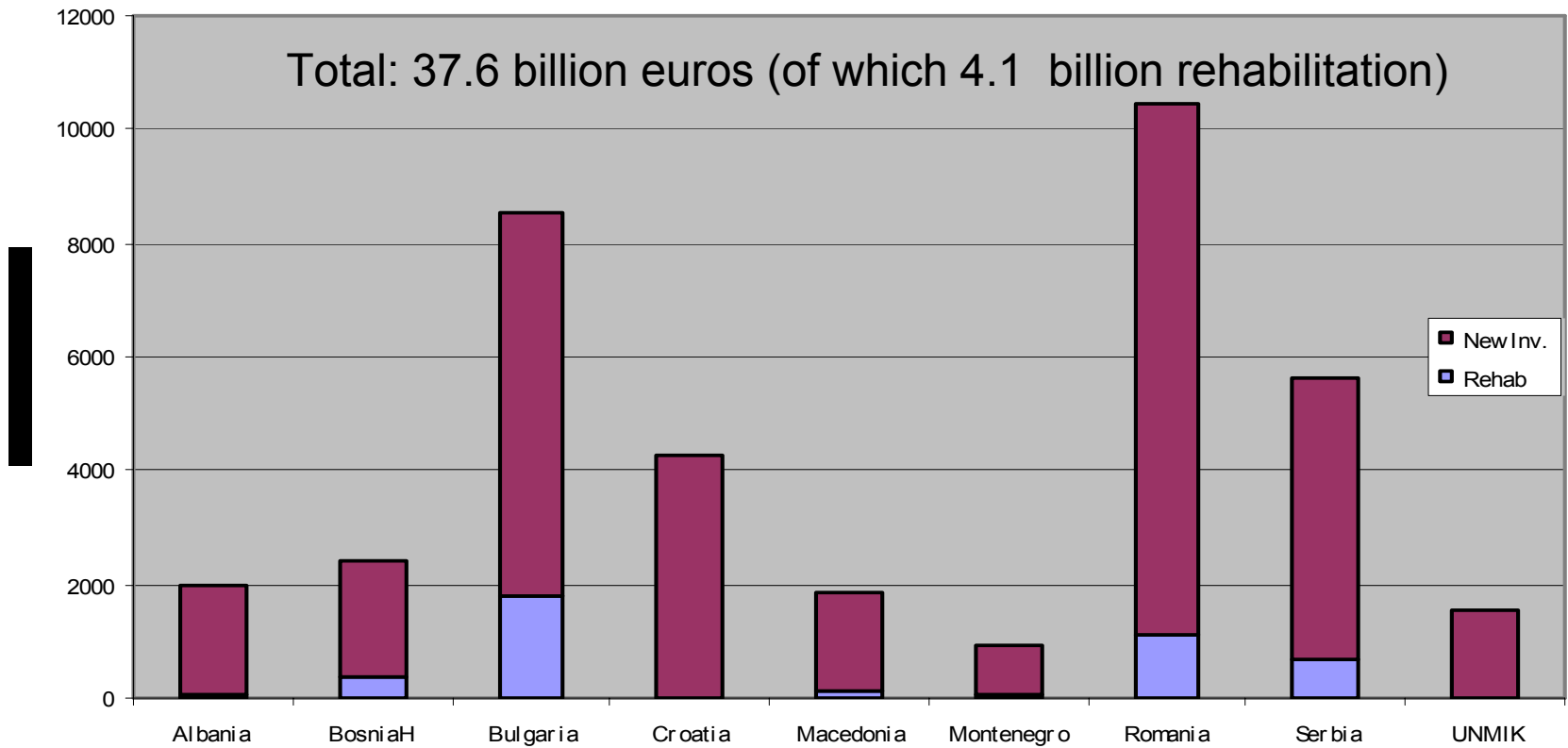


Source: World Bank/EC, Generation Investment Study -- 2004



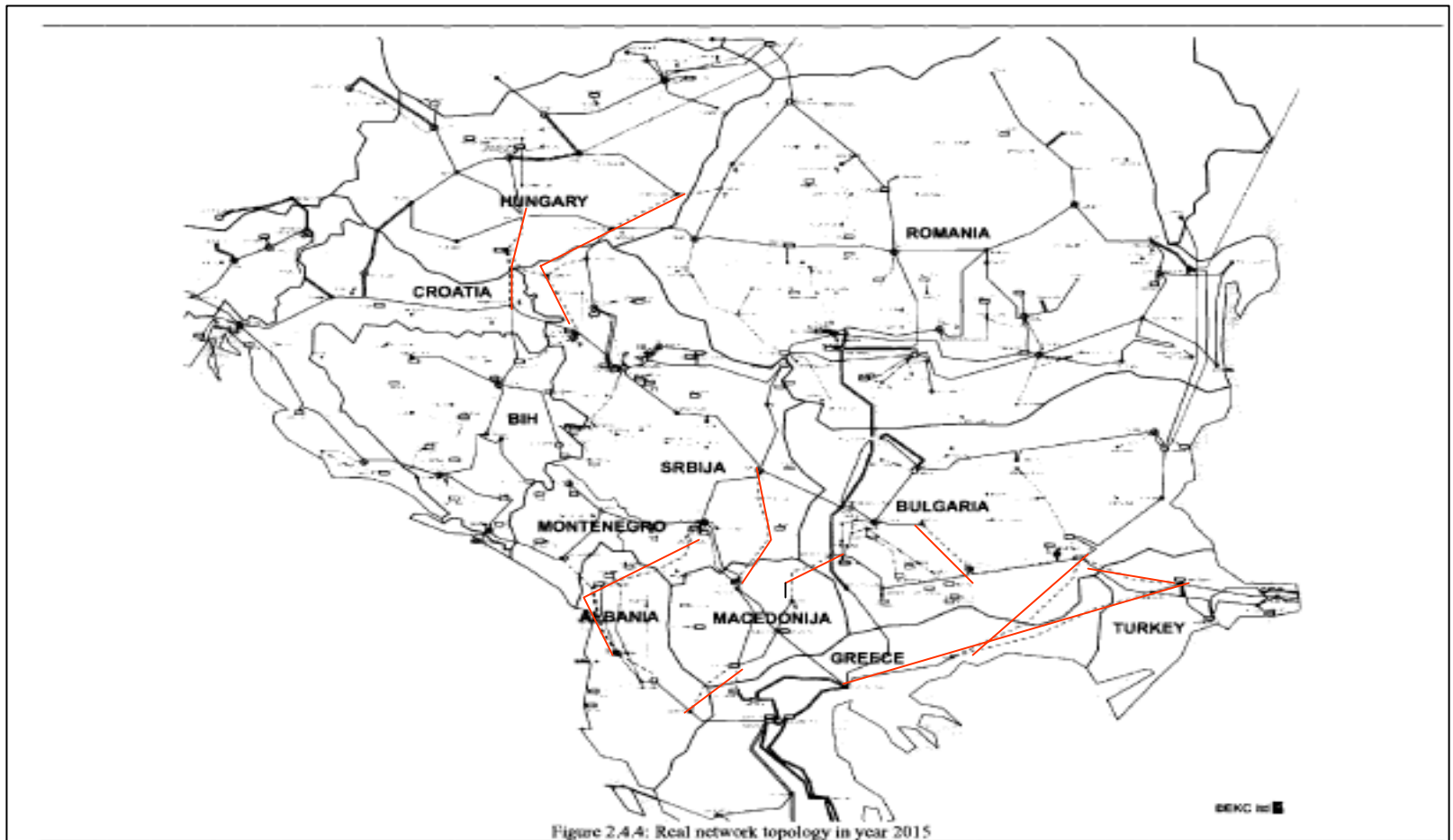
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## Estimated Investments Required by 2020 (Rehabilitation and New Generation)





## Planned, Proposed Transmission Links by 2015





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# Black Sea Region Existing Interconnection Lines



**LEGEND:**

- 750 kV
- 500 kV
- 400 kV
- 330 kV
- 220 kV
- 150 kV



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## **Gas Sector Development and European Gas Supply Diversification**

- Important Dimension to EU Energy Security Strategy
- Issue of new pipelines and long-term contracts
- Need for gas hubs, liquidity and more transparent access
- Potential for LNG imports
- Potential for economical gas storage
- Prospects for increasing gas substitution and market development – need industrial and power loads



# EU Gas Imports, Import Capacity and Projected Imports

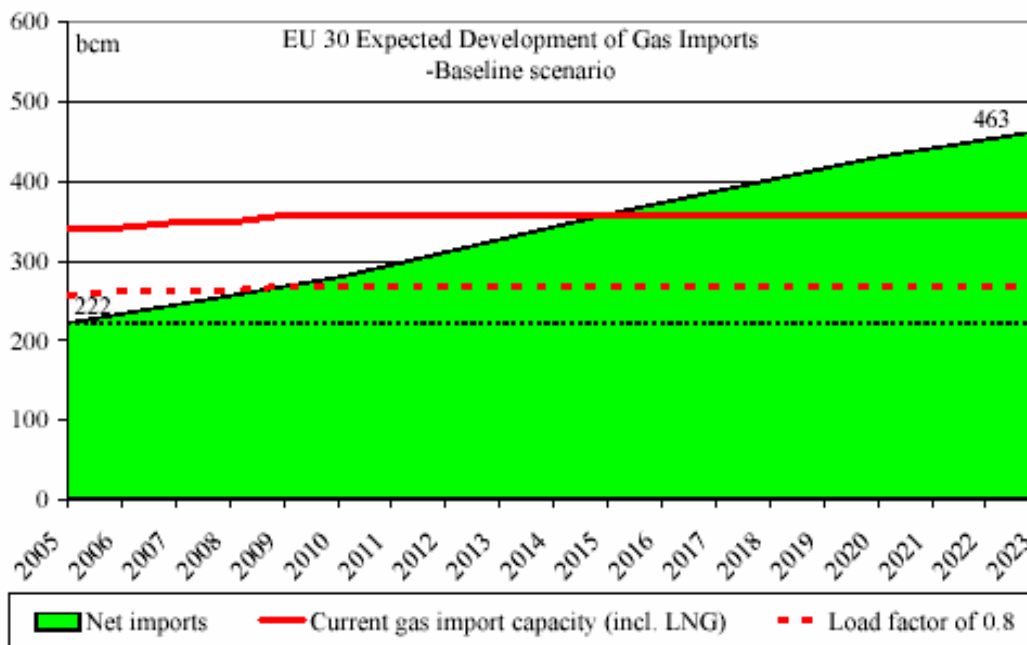


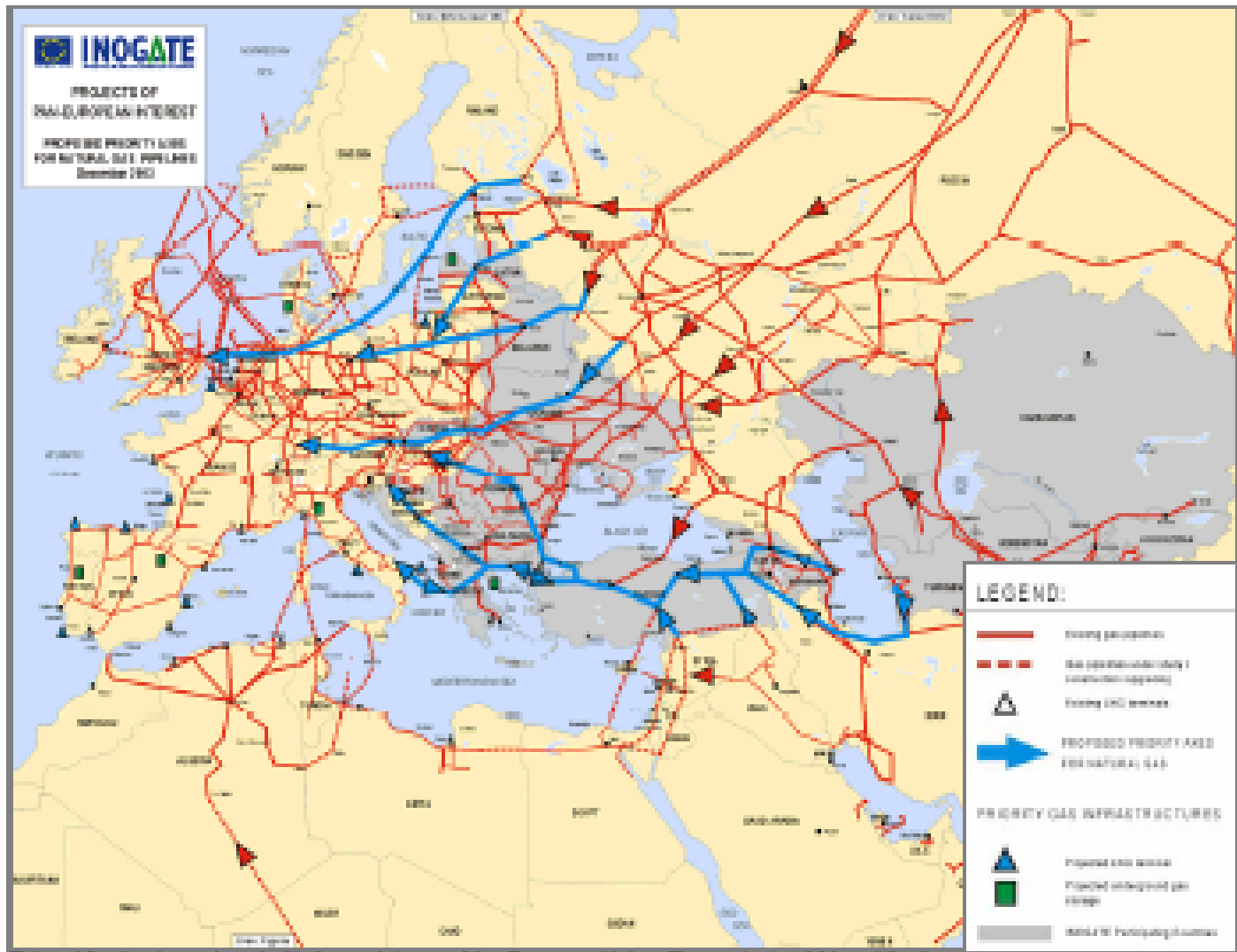
Fig. 5.16: Increase in import demand and current transmission capacity

TE N-Energy- I n v e s t: Study on Energy Infrastructure  
Costs and Investments between 1996 and 2013 (medium-  
term) and further to 2023 (long-term) on the Trans-  
European Energy Network and its Connection to  
Neighbouring Regions  
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**Figure 6 European gas grid showing potential new pipelines to Europe**





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Figure 3 Pipeline routes



Source: GIE map.



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## Key Future Developments

- Community Regulatory Board and Its Authorities
- ETSO Transparency Initiative and Application to Athens Process – Proposal for Auction Office
- Development of Power Exchanges and Spot Markets
- Important New Electricity and Gas Inter-connectors (e.g. Turkey-Greece)
- Launching of Athens Gas Forum
- Decisions of EU and Consortium on Nabucco and Other Major Gas Import Projects
- WB Study and Potential Gas APL
- Turkey's participation in Athens Process and UCTE
- Ukraine and Moldova: Neighborhood Policy and Involvement in Athens Process