

## Regional Studies Proposal

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|---|-------------------|-------------------|--------------------|--|---------------|---------------------|------|
| <b>Sector Unit:</b>   |                   | ECSIE             | <b>Title:</b>      | Assessment of Environmental Impacts of Power Generation in South East Europe: Implications for Investments to Comply with EU Regulations |               |                     |      |
| <b>Cont/New?:</b>   | New               | <b>Strategy?:</b> | Yes                | <b>TTL:</b>  | Dejan Ostojic | <b>Delivery FY:</b> | 2005 |
| <b>Output Type:</b>   | Report, workshops | <b>Audience:</b>  | IFIs, donors, Gov. |  |               |                     |      |
| <p><b>Study Objectives:</b> The main objective of the proposed study is to assess environmental impacts of power generation in the SEE region and to identify the cost of compliance with EU requirements for both existing and new power plants from 2005 to 2020.</p>   |                   |                   |                    |  |               |                     |      |
| <p><b>Methodology:</b> The average age of power generating plants across the SEE region<sup>1</sup> is estimated to be over 30 years, with some plants being older than 40 years and of antiquated technology. Most of electricity is produced from lignite fired thermal power plants which increased their share of total production from 45% in 1991 to 55% in 2001, while the total production remained at the same level (165 TWh). At the same time, gas based production (which accounted for about 20% of production in 1991) practically disappeared from the fuel mix because relatively recent technological advances in environmentally friendly, combined cycle gas technology bypassed the region due to lack of investments. This is both an economic and environmental liability.</p> <p>The study will focus on environmental impacts of existing and possible new thermal power plants, specifically from the point of view of air pollutants that are of local and/or regional concern, such as particulate matter, sulfur dioxide and nitrogen oxides, as well as greenhouse gas emissions from the power sector. At the outset of the task, the study team will discuss and agree with local experts on the environmental standards (emission limits) to be used in the analysis, based on local and EU regulations. In order to assess the cost of EU compliance, the generation investment programs will be evaluated adopting EU regulations for both existing and new plants. Compliance of existing plants will involve modifications of the plant and/or addition of abatement technologies. New plants would need to be equipped with the adequate abatement technology, which will impact investment costs. The study team will evaluate alternatives and recommend least-cost compliance strategies.</p> <p>This study will be performed in close coordination with the EC funded Regional Generation Investment Study (GIS) co-managed by the Bank. In order to ensure that the study results reflect a broader understanding of the EC, IFIs, donors, the SEE countries and other stakeholders, the study team will participate in workshops to be organized under the GIS to review regional generation investment plans and develop a coherent strategy for investments to support the emerging regional electricity market and facilitate its integration into the EU energy market.</p> |                   |                   |                    |  |               |                     |      |
| <p><b>Links to ECA Strategic Objectives:</b> The study supports the emerging regional electricity market and helps underpin investment needs in safe, sustainable and environmentally healthy provision of public good services in electricity sector in preparation for its integration into the EU energy market.</p>   |                   |                   |                    |  |               |                     |      |
| <p><b>FY '04 outputs for multiyear tasks:</b> Assessment of environmental impacts of existing power plants. Preliminary results of environmental compliance analysis.</p>   |                   |                   |                    |  |               |                     |      |
| <b>Remarks:</b>   |                   |                   |                    |  |               |                     |      |

<sup>1</sup> For the purpose of this study, the SEE countries include Albania, Bulgaria, Romania and all countries emerging after the break-up of former SFR Yugoslavia except Slovenia.