

## 7. INFRASTRUCTURE PROGRAMS IN SUPPORT OF ECONOMIC GROWTH AND REGIONAL INTEGRATION

### A. INTRODUCTION

7.1 Improving infrastructure in the SEE region will be important to support economic growth and regional integration. The availability of infrastructure services—in transport, energy, telecom and water—is key to economic growth. In addition, without adequate transport systems linking countries together, trade cannot flourish; and without adequate communication facilities, citizens of different countries cannot be in reliable contact with each other, which also constrains possibilities for trade. Availability of adequate infrastructure is also essential for social cohesion in the region: the possibility to travel, interact, meet, trade is in fact necessary to create a multicultural society which respects and tolerates each other, and appreciates and recognizes cultural differences and values.

7.2 It is important to stress, however, that while infrastructure is important it is not sufficient to promote growth, integration, or social cohesion. Investments without the reforms necessary to strengthen institutions and promote private sector investment and trade will not be sustainable and will not generate their full potential benefits. In addition, investments without political and social leadership which supports tolerance and interaction in the region will not be sufficient to promote social cohesion. As discussed in Chapter 6, the creation of open, democratic participatory societies which allow for cultural and social diversity—including ethnic diversity—is equally important as investments in infrastructure to facilitate mobility, communications and cooperation. **Building large infrastructure without sound policies and institutions for private sector development and social cohesion and inclusion, means wasting large amounts of resources without achieving the objective of sustainable economic growth and prosperity for the region.**

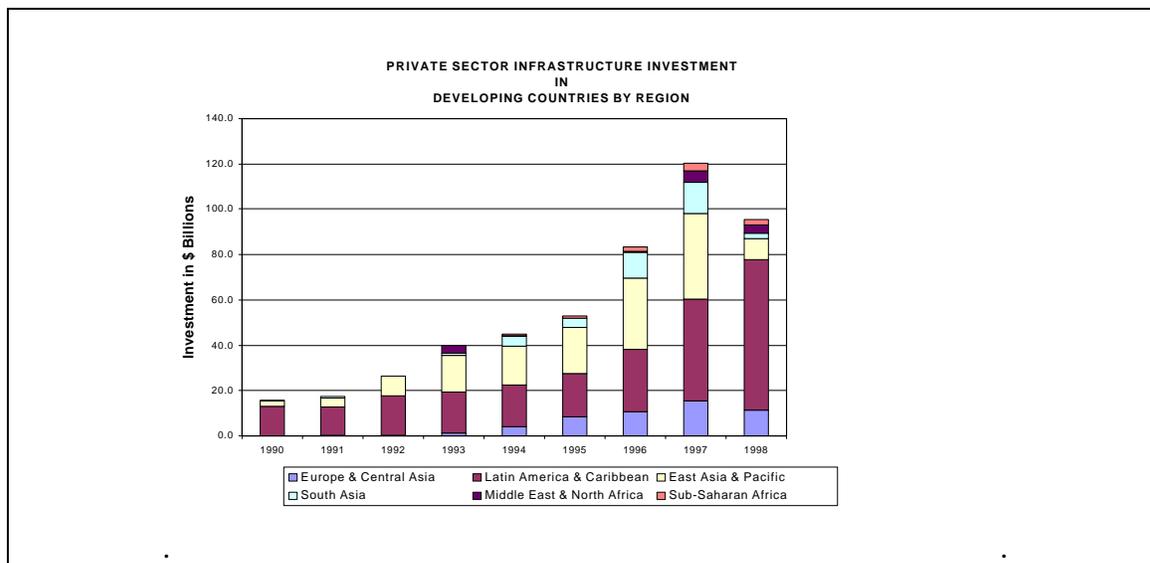
7.3 Financing needs for infrastructure in SEE countries are high.<sup>68</sup> About half of public investment in SEE countries—estimated at around 4 percent of GDP—is infrastructure. These investment levels are in line with averages observed in other emerging market economies; they are however likely to be low, in light of the special circumstances of the region, where infrastructure needs to be rehabilitated or reconstructed as a result of wars, neglect and civil disruptions, and also in the perspective of improved integration within the region and with Europe. At the same time, as discussed in Chapter 2, many SEE countries could not increase their public spending

---

<sup>68</sup> The assessment presented here reflects positions taken by EIB in “Basic Infrastructure Investments in South Eastern Europe”, Summary prepared for the Working Level Steering Group for Donor Coordination in South Eastern Europe, Meeting on 24 September 1999 in Washington, D.C. and subsequent papers presented to the Stability Pact and the WLSG. EBRD contributions and the EC-funded PHARE studies have also been valuable sources of information for this chapter.

and/or borrowing because of domestic macroeconomic considerations; and it may also be difficult to raise adequate funding from traditional sources. For these reasons, as well as to increase competition and improve the cost/quality mix of services, it will be increasingly important to make progress in the commercialization of utilities, and in private involvement in funding infrastructure development, which are currently at a very early stage in the SEE region. The experience of developing countries shows in fact that it is possible to attract private investment, especially in telecom, energy and water (see Chart 7.1).

**Chart 7.1: Private Sector Infrastructure Investment in Developing Countries**



Source: World Development Report.

7.4 Infrastructure has important regional dimensions. First, significant efficiency gains can be made by pursuing infrastructure development regionally rather than on a national level. Given the small size of most SEE countries, development of infrastructure investments and policies strictly on a national basis does not allow for the exploitation of economies of scale, which are likely to be important especially in transport and energy. For example, trade in energy (power, gas, water for hydro-generation) will be facilitated through regional integration, and energy costs can be reduced through open and reliable energy trading systems. Second, since the benefits from regional projects are realized beyond national borders, fair mechanisms for financing, and in general burden sharing, of these regional projects will need to be established, again at a regional level. Third, the creation of new nation states with international borders can be an obstacle to trade and integration, if each border crossing is associated with long waits, new visa requirements, high transaction costs. Such obstacles can only be addressed by reaching international agreements on border crossing processes, the establishment of the necessary infrastructure at the border transit points and the implementation of supportive and efficient customs administrations. And fourth, the development of infrastructure is constrained by issues—including weak institutional arrangements and large rehabilitation and reconstruction needs—that are shared by SEE countries and thus warrant a coordinated, regional approach to addressing them.

7.5 One additional common element of infrastructure development in the SEE region will be the gradual adjustment towards EU standards and the EU *acquis communautaire*. This report argues (see Chapter 1) that clear prospects for European integration is an essential condition for sustained stability, security and prosperity in the region. Gradual progress towards the *acquis communautaire* is therefore essential. EU policies for the transport, telecommunications and energy sectors will need to be gradually and prudently introduced by SEE countries. A regional approach to providing assistance to SEE countries towards this objective should be considered.

7.6 This Chapter lays out sectoral policy and investment issues in transport, telecom, and energy. This Chapter limits itself to a general discussion on the selection policy for regional projects and does not review in detail individual projects. The EIB has in fact been given by the Stability Pact the leading role for developing and assessing projects in the infrastructure sector.

## B. TRANSPORT SECTOR

### Performance of the Sector and Key Issues

7.7 South Eastern Europe is on the crossroad between Europe and Asia and is also the natural transit route between Greece and the other EU Member States. Six out of ten multi-modal transport corridors included in the Helsinki and TINA Networks<sup>69</sup> go through South East European countries. The war in Yugoslavia, the sanctions and embargo, and the Kosovo crisis have resulted in significant disruptions on these corridors. Starting from the early 1990s, interruptions in the natural connections between Western, Central and South Eastern Europe have led to the diversion of traffic towards longer routes; at the same time, the creation of new nation states has increased the number of border crossings. More recently, the Kosovo war—despite causing limited damage to transport infrastructure in Kosovo—brought about extensive damage in infrastructure in FRY and new costly disruption of traffic throughout the region. Damage to road and rail bridges in FRY—whose replacement value exceeds EUR 1 billion according to EIB estimates—has again forced traffic to alternative routes and has blocked the Danube navigation.

7.8 Recent wars are not the only cause for the generally poor availability and quality of transport infrastructure and services in the SEE region. Though the countries in the region are significantly different, institutions and policies in the transport sector are generally weak. These weaknesses have led to decades of inadequate maintenance; continuing over-regulation of the sector; dependence of transport enterprises on

---

<sup>69</sup> The TINA (*Transport Infrastructure Needs Assessment*) process was launched in September 1995. Its mandate was to identify the transport investment projects in the accession countries along the pan-European Transport corridors as defined by the 2<sup>nd</sup> Pan-European Transport Conference (Crete, 1994) and updated at the third Pan-European Transport Conference (Helsinki, 1997). At the Helsinki Conference the concept of Pan-European Investment Partnership was endorsed to promote the connection of the Trans-European Transport Network (TEN) on the EU territory with the TINA Network of the accession countries, the Pan-European corridors on the territory of the NIS and the four Pan-European Transport Areas of the maritime sea basins and the Euro-Asian links, i.e., the TRACECA corridors.

subsidies; and insufficient progress towards commercialization and privatization of transport services (except trucking). As a result, low quality of transport infrastructure and services, and relatively high transport tariffs limit international competitiveness of SEE countries.

## Roads

7.9 The networks of national and rural roads in the region are significant in density, though below the EU average. Motorways (1435 km) are concentrated in FRY, Croatia, Bulgaria, Romania and FYR Macedonia. The network is mostly in poor or fair condition. As priority has been given to new construction, in particular new motorways, without reforming the road financing system and introducing the *users pay* principle, huge backlogs of maintenance have resulted.

7.10 Traffic safety is of low standard (see Table 7.1). The risk of being involved in a road traffic accident is rapidly growing due to higher rates of motorization, speed levels, numbers of young inexperienced drivers, and numbers of vehicles with poor technical standard, at the same time as road surfaces have been deteriorating. The socio-economic cost of road traffic accidents is high, as it is estimated to cost around 1.5 to 2 percent of GDP on average.

**Table 7.1: Road Fatalities in SEE Countries, the EU and the USA**

	<i>Fatalities/10,000 vehicles</i>	<i>Motor vehicles (per 1000 people) in 1996<sup>a</sup></i>
Albania	27.8	31
Bosnia and Herzegovina	n.a.	24
Bulgaria	5.0	234
Croatia	8.1	196
FYR Macedonia	6.3	142
Romania	7.9	124
CEE-5	n.a.	295*
EU average	3.8	447
USA	2.1	506

• in 1997.

a. The World Bank, "World Development Indicators: 1998" Washington, DC: The World Bank, 1998.

Source: Eurostat and World Bank.

7.11 Trucking throughout the region has been privatized and licensing practices in Romania, Bulgaria and Croatia are close to those in the EU. The trucking sector is mostly operated by small entrepreneurs with limited financial viability. There are only a few international operators with long traditions in international markets, such as the recently privatized Bulgarian freight operator SOMAT. Further growth in the trucking sector will depend on access to international markets. The still protectionist bilateral quota system and the difficulties in acquiring multiple entry visas for commercial drivers

further constrain competitiveness. Romania, Bulgaria and FYR Macedonia have negotiated agreements with the EU on relatively liberalized transit arrangements,<sup>70</sup> but these do not provide for easier access to *bilateral and third country permits*.<sup>71</sup> In case of Romania and Bulgaria liberalization of all trucking services (both international and cabotage<sup>72</sup>) is expected when they join the EU. All SEE countries have also signed a SECI Memorandum of Understanding on the Facilitation of International Road Transport of Goods with the intention to gradually liberalize intra-regional road freight transport.

7.12 In order to facilitate international passenger transport by road a pan-European agreement, called *INTERBUS*, is under preparation. The agreement would liberalize certain occasional transport services and at the same time would provide for harmonization of rules on admission to the occupation, as well as technical (safety and emission), social and fiscal matters. This technical harmonization, however, will be difficult for many SEE operators, who cannot afford to replace their fleet with vehicles meeting the EU standards. In this way not all SEE countries will be able to have the benefits of liberalization.

## Railways

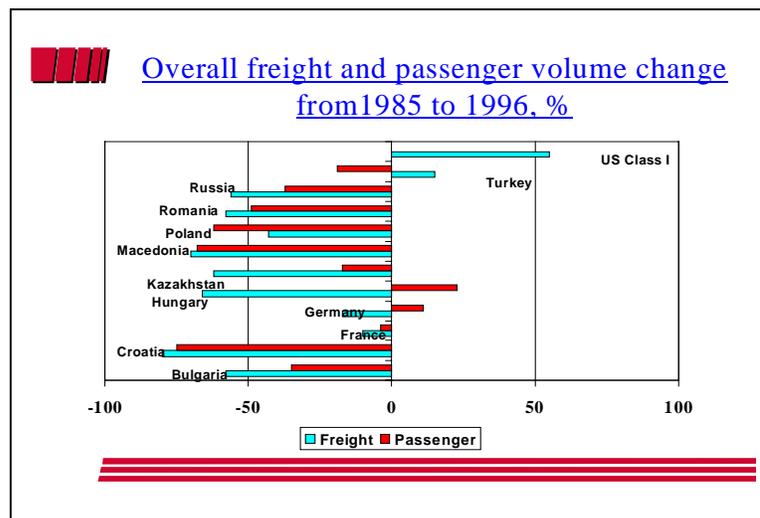
7.13 Railways networks are extensive in most South East European countries (except for FYR Macedonia, Bosnia and Herzegovina, and Albania) and often form the backbone of national and regional transport network. Railways are also important in economic terms, despite drastic traffic reductions resulting from weak economic activity throughout the region and increased competition from the newly liberalized road transport sector. In fact, the share of combined freight and passenger revenues still amounts to 0.6 to 1.9 percent of GDP in Romania, Bulgaria and Croatia (by comparison in the USA 0.4 percent, in France 0.5 percent).

---

<sup>70</sup> As a follow-up to the Europe Agreements three Transit Agreements have been negotiated between the European Community and Bulgaria, Romania and Hungary. These agreements ensure progressive and mutual liberalization of transit by the introduction of transit quotas in addition to the bilaterally existing quotas. Reciprocity is based on the recognition of transit through any Community Member States. The Transit Agreements also accelerate the adoption of EU standards, particularly the higher weight limits of vehicles. While this is part of the integration process, the consequent deterioration of the road networks in these countries will impose increased spending on road maintenance without the users' contribution (vehicles with over-weight are obliged to pay a fee; by the increase of the limits the amount of the collected fee will decrease). The Agreement between the EU and FYR Macedonia in the field of transport was concluded in 1998. It offers more limited transit opportunities for FYR Macedonia operators, as transit is restricted to journeys through the whole Community territory and destined for or originating from a third country.

<sup>71</sup> *Bilateral or loco permits* allow delivery between the two contracting countries; *third country permits* allow transport between the other contracting party and a third country.

<sup>72</sup> Cabotage: when a foreign operator is involved in domestic transport.

**Chart 7.2: Recent Trends in Railways Traffic**

7.14 The capacity and service of rail enterprises have deteriorated significantly, as a result of funding shortages leading to obsolete rolling stock, poor infrastructure and outdated signaling and telecommunications. These funding shortages have occurred despite the significant burden that railways continue to impose on their governments (in Croatia over 1.2 percent of GDP, in FYR Macedonia over 1 percent of GDP).

7.15 In order to address the challenges posed by increased competition and declining public subsidies, it is essential to improve rail operation and management, increase self-financing and open the sector to the private sector, especially in the provision of services. Major progress in these directions has already been made in Romania, with significant reform programs also underway in Bulgaria, Croatia and FYR Macedonia. The Romania Railway (SNCFR) was divided into five companies (infrastructure, passengers, freight, management services and assets), staff reduced by 21 percent and excess rolling stock sold. Bulgarian Railways reduced its staff by 12 percent in 1998 by eliminating regional management levels and started closure of non-core businesses. In Croatia, HZ was separated into two companies (infrastructure and operations) and staff was reduced by over 12 percent between 1997 and 1999.<sup>73</sup> Additional reforms are also necessary to progress towards the adoption of the EU framework.

7.16 The focus of new railway projects should also be on restructuring in line with EC legislation and to achieve compatibility with EU practices. This will significantly improve economic efficiency in transport, improve regional linkages and reduce financial burdens on the national treasuries. It will also improve access for the poorer regions to EU markets and for the urban poor to domestic employment.

<sup>73</sup> In all the three countries joint IBRD-EBRD projects are assisting the governments and the railways to make progress with the restructuring.

7.17 In the process of European integration, closer cooperation among the SEE railways and rationalization of investment in locomotive and rolling stock workshops, management information systems and route structure could help them improve cost efficiency due to their smaller size and scale. SEE governments could facilitate the revitalization of their railways and stop or possibly reverse their decline by introducing liberal conditions for their mergers across national frontiers and even for privatization of certain rail businesses.

## Shipping

7.18 The South East European region has direct access to the Adriatic sea and the Black sea. **Maritime transport and ports** play a key role in international trade and could be a source of economic development. However, the major ports, like Rijeka, Zadar and Ploce in Croatia, Bar in FRY, Durres in Albania, Burgas and Varna in Bulgaria, and Constanta in Romania are at very different level of development. In addition, institutional and policy constraints are similar to those discussed for the transport sector in general, and include poor cost/quality mix of services, dependence of subsidies, low level of competition, and slow progress towards commercialization and private sector involvement.

7.19 The largest ports of the South East European region are located on the Black sea, linked to industries, close to the Danube: Burgas (15 m tons, industrial), Constanta (35 m tons). A number of small ports can also be found at the entrance of the Danube. The inter-dependence between the navigability of the Danube and the development of the ports is far from negligible. Varna (5.5 m tons, average multi-purpose port), Nessebar (small port for ferries and cruise ship), Mangalia (small developing port) are also important in regional development. Along the Adriatic coast, the new countries are small and many of them are landlocked. Three major ports, Trieste (Italy),<sup>74</sup> Koper (Slovenia) and Rijeka (Croatia) are in competition with each other. Rijeka enjoys relatively good connections but owing to decades of poor management, lack of maintenance and development, most traffic has shifted to Koper and Trieste. Numerous small-size ports belong now to Croatia (Sibenik, Split, Ploce and Dubrovnik), Montenegro (Kotor and Bar) and Albania (Durres). Due to a semi-continuous mountain range along the coast, their road and rail connections are rather limited. Their access to cargo is mainly in the niche markets (e.g., Ploce, for BiH) and local industries.

7.20 The main factor of development along this part of the Mediterranean basin can be the development of the Pan-European corridors, as they offer connections with the Central European markets, and a regional port reform based on commercialization of former SOEs and concessioning of the main facilities.

7.21 The **Danube** (Corridor VII in the Pan-European Network) is the longest navigable river of Europe and for nearly a decade has been connected via the Rhein-Main Canal to the Rhein. It offers unique transport opportunities between the Black sea and the Atlantic ports, but has been very under-utilized in the past, and is currently not navigable owing to

---

<sup>74</sup> Though Trieste is outside of the SEE territory, its significance for the Central European hinterland and its competitive services warrant its mentioning here.

the debris from the destruction of bridges in FRY during the recent Kosovo war. Re-opening the Danube to commercial navigation should receive high priority, as increased use of its waters for shipping could ease the pressure on the road network, and also because it is the most environmentally friendly mode of transport. Complementary progress in both regulatory and institutional reforms, as well as improvements in infrastructure (e.g., depth and width of the fairway, free height under bridges), are however necessary to the development of the sector. In turn, progress in these areas as well as a recovery of traffic will depend critically on the reintegration of FRY in the region. In fact, under the current circumstances, the Danube Commission established by the Belgrade Convention cannot fulfill its mission as far as facilitation of cooperation among the Danube states is concerned.

### **Civil Aviation**

**7.22 Airports.** There is an extensive air route network in the region, but its use decreased significantly in the past ten years. In 1998, the number of air passengers in all the South East European countries amounted to six million air passengers. In the CEE-5 the number of air passengers was 13.5 million.<sup>75</sup> In comparison, Marseille (a French airport) has around 5.5 million and Milane Linate (an Italian airport) has around 13.6 million passengers. The 20 major EU airports have 466 million passengers annually. In addition to air traffic directed to the region, there are increasing over-flight demands along the routes to the Middle East and beyond; the most economical (shortest) routes are, however, passing over FRY.

**7.23** The challenges facing civil aviation in the SEE region are not dissimilar from those facing the transport sector as a whole. Once again, improvements in policies and institutions should be given high priority, in order for investments to produce their potential benefits. An important example of the need for parallel progress in investments and regulatory reform is the improvement of Air Traffic Control (ATC) Systems, which is of high priority both for the region and for foreign airlines operating in or transiting through the region, and will need to be complemented by basic airport modernization in order to increase traffic safety and security.

**7.24** Progress toward European standards and progressive liberalization of the skies is also necessary. In this regard, a pan-European Air Services Agreement covering the EU, EEA and the Central and East European countries is under negotiation. The Agreement would substitute the current bilateral air transport agreements, would expand the EU air legislation, and would improve liberalized market access conditions. One of the greatest advantages of the proposed agreement is to simultaneously open up markets also among the East European countries and thus facilitate more intensive regional connections.

### **Logistic services**

**7.25** One of the greatest impediments to international rail, road and river transport is the long waiting time at the borders. This is primarily due to the border procedures and not to the lack of infrastructure. The World Bank Trade and Transport Facilitation

---

<sup>75</sup> In 1998.

**Box 7.1: Trade and Transport Facilitation Program for South Eastern Europe (TTFSE)**

**Background:** The collapse of the Soviet Union and the break-up of the Yugoslav Federation led to radical changes in the direction of traffic flows and the creation of new frontiers and customs services. Performance of the border control agencies has been unsatisfactory: traffic has been subject to long waiting times, raising the cost of transport services and making them unpredictable; customs revenue collection has fallen short; and smuggling and corruption have become widespread. These deficiencies amount to bottlenecks to trade, with macroeconomic effects similar to those of protectionist trade policies; they undermine incentives to improve competitiveness; and deter foreign direct investment. To address these problems, the EU has been advising Romania and Bulgaria on customs reform and computerization, as part of its pre-accession assistance, and Albania and FYR Macedonia, as part of the approximation process. In Bosnia and Herzegovina, it has provided substantial direct operational support to build up the customs administrations after the war and likewise in Albania after the civil unrest of 1995-97. The Southeast European Cooperative Initiative (SECI) has, in parallel, set up national “PRO” committees to mobilize public and private sectors to simplify procedures and otherwise facilitate trade. In this connection, the governments of Albania, Bosnia and Herzegovina, Bulgaria, Croatia, FYR Macedonia and Romania have each asked the Bank to finance improvements to border crossing points.

**Objectives and Description:** The border crossing problem, by its nature, requires coordinated and mutually reinforcing action in many areas. The Program, therefore, aims to integrate the efforts of the EU, SECI and the World Bank Group for: (a) physical improvements to border crossings; (b) technical assistance to strengthen the customs administrations; (c) computerization of procedures at the border crossings and electronic filing of customs declarations; and (d) improved exchange of information between the border control agencies and the business community, through seminars, training and the development of Internet web sites (“trade facilitation”). At the regional (i.e., international) level a steering committee is to provide a forum for exchange of experience among the countries, the collective aligning of procedures on EU standards, and the coordination of operating practices at “twin” crossing points. Thereby the Program aims to reduce costs to trade and transport, at the same time reducing smuggling and corruption at border crossings, and strengthening regional partnerships and trade.

**Costs and Financing:** The total cost of the Program is estimated at US\$109 million equivalent. IBRD loans of US\$37 million and IDA credits of US\$30 million would finance about 61 percent of this total. The EU is providing grants of about US\$20 million equivalent, while the US government has been asked to provide grants of about US\$9 million. The recipient governments will finance the remaining US\$13 million, about 12 percent of total estimated cost.

**Implementation: who and how?:** The Program is conceived as six near-simultaneous country operations to be implemented over three years, starting in 2000. The borrower for each World Bank loan/IDA credit will be the government. The customs agencies will be responsible for implementing most components, though the border police will also be involved in some countries; and the trade facilitation activities will be hosted by the chambers of commerce in cooperation with the ministries of trade. The regional steering committee will be responsible for coordination across countries; each government will be represented by a high-level project coordinator authorized to speak on behalf of all border control agencies. To the extent possible the project implementation teams will be built around officials already managing the EU assistance and SECI coordinating functions. The donors will fund a secretariat for the regional steering committee and experts to assist each government in procurement and loan management.

Program for the SEE countries aims to give assistance to the improvement of road transport transactions (see Box 7.1). In the field of railways, rail operations need to be drastically reformed to enable the enterprises to improve their marketing and offer customer focused services. Pilot shuttle trains could pave the way for the extension of the *Trans-European Rail Freight Freeways* (TERFFs) to the SEE region, which soon then could be the engine of these reforms.

### Regional Approaches to Transport Sector Development

7.26 There are several areas in transport, where a **multi-country approach** could bring more benefits than the execution of individual projects:

- The Danube for example lends itself to a multi-sectoral regional development program. Progress has been made in the field of environment based on cooperation with the other international organizations. In the field of transport studies financed by the multi-country Phare have been prepared as a first stage to identify investment needs.
- The elimination of border crossing obstacles in land transport calls for harmonized regional investment and development programs, too. The TTFSE project under preparation by IBRD aims at offering solutions to the most acute problems (see Box 7.1 above). The project, which focuses on transport and trade facilitation, is designed in a way to build on and support the EU programs in the field of customs reforms.
- The improvement of and investment in upper airspace navigation control can be most cost effective, if it is done for many participating countries, similarly to Maastricht and to the planned investment program of the Central European Initiative.<sup>76</sup>
- The set up of regional traffic forecasting could help the SEE countries to prepare commercially footed investment projects, which take into account both the national and the regional trends. It could also promote the intellectual integration of transport in Europe, as new dimensions could be opened for the cooperation with Eurostat and other regional transport statistics centers (CETIR for the CEE countries).

7.27 An important contribution to the preparation and institutional assessment of infrastructure investments is already being made by the Transport Infrastructure Needs Assessment (TINA) program. The TINA process has established a viable multi-country process for regional investments. As the TINA program do not include all the SEE countries, it is recommended to charge the TINA Secretariat to prepare an addendum to

---

<sup>76</sup> In the process of European integration, all SEE countries will have to consider their accession to the European international organizations, e.g., Eurocontrol, which plays an important role in European Air Traffic Management.

the TINA final report<sup>77</sup> using the same methodology as applied for the accession countries.

**7.28 Regional Transport Project Selection Criteria.** In addition to the overall selection criteria for regional infrastructure projects presented in the Annex, regional transport projects should be favored to the extent that they:

- Give priority to rehabilitation over new construction.
- Accelerate the development of legal and regulatory framework and institutional reforms: promote transparent relationship between state and infrastructure operators and service providers (e.g., internationally acceptable procurement practices); enforceable agreements on Public Service Obligations and compensations; and increased private participation in the provision of transport services, etc.
- Support national programs for traffic safety and environment protection.
- In the field of railways, restructure the railways enterprises to improve their efficiency and decrease their reliance on government subsidies, as well as to improve cross-border linkages.
- In the road subsector: increase capacity of the road administrations; promote sustainable road financing structures; give special attention to rehabilitation and maintenance; and lend more balanced support to rural roads.
- In inland navigation and maritime transport: restructure port operations according to market economy requirements.
- In aviation: support demonopolization and progressive liberalization.

## C. TELECOMMUNICATIONS

### Performance of the Sector and Key Issues

7.29 Telecommunications are an essential element in the infrastructure of modern economies, and are crucial in the development of both national and international trade. While traditional fixed networks exist throughout the region, the availability and quality of telecom in SEE countries vary widely; regulatory and institutional arrangements are also at different levels of development. In addition, the recent Kosovo conflict has destroyed some key elements of the long distance fiber optic routes.

7.30 **Fixed Networks.** There is a wide range of fixed telecom line densities in the SEE region, ranging from high (Croatia and Bulgaria, above 30 percent), medium (FRY, FYR Macedonia, Romania and Bosnia and Herzegovina, at 10 to 25 percent), to low (Albania, 2 percent) (see Table 7.2). It should be noted that penetration indicators may

---

<sup>77</sup> Published October 1999.

be misleading as several households may share a single mail line, or lines may be economically sub-optimal. In addition, as a result of low revenues—generally owing to low tariff rates and low collection rates—all countries except Croatia have experienced very low investment in recent years, which is likely to conceal poor quality equipment and obsolete technologies.

**Table 7.2: Telecommunications Systems**

<i>Country</i>	<i>Population</i> <i>1998</i>	<i>Fixed Lines</i> <i>1998</i>	<i>Mobile Lines</i> <i>1998</i>	<i>Total</i>	
	<i>million</i>	<i>thousand</i>	<i>Penetration</i> <i>lines/100</i>	<i>Penetration</i> <i>lines/100</i>	
Albania	3.4	118	3.5	6*	3.7
Bosnia and Herzegovina	4.2	337	8.0	26	8.6
Croatia	4.6	1594	34.9	213	39.5
FRY	10.6	2190	20.7	216	22.7
FYR Macedonia	2.0	453	22.7	35	24.4
Bulgaria	8.2	2715	33.1	131	34.7
Romania	22.5	4513	20.0	720	23.2
SEE Total lines and average penetration	55.5	11920	21.8	1346	24.3

\* As a result of recent up-grade in Albania the current number of mobile lines amounts to 20,000.

Source: ITU, national

**7.31 Mobile networks.** All countries now have digital GSM networks, with some in addition retaining parallel analogue NMT networks. Development of mobile networks broadly parallels that of fixed, with the highest penetration in Croatia (5 percent), medium levels in Romania, FYR Macedonia, FRY and Bulgaria, and almost no usage in Bosnia and Herzegovina and in Albania. This suggests that mobile networks are not substituting for lack of development of the fixed networks in countries such as Albania and Bosnia and Herzegovina and that their development is instead linked to the availability of investment funds and the number of users who can afford a service priced at market levels.

### Regional Approaches to Telecom Development

**7.32** For the SEE countries to leap frog to a new stage of telecom development, top priority should be given to the establishment of a legal and regulatory framework which encourages and provides long-term support for investment. The high quality, low cost telecoms infrastructure that provides the backbone of today's "web economy" is normally provided by private investment in a competitive environment; regulatory reform is thus needed to provide the necessary security for investment and structural reform, essentially market opening, is required to provide opportunities for private investment. There are trade considerations associated with both aspects of reform, most notably with the WTO and EU linkages, which spill over onto any foreign ownership restrictions and even taxation matters. As it has been observed for a different set of countries, "Without

government commitment to regulatory stability, frequent changes in the regulatory regime can have the same effect as outright expropriation of sunk investments”.<sup>78</sup>

7.33 It will be advantageous for the SEE countries to adopt closely aligned frameworks for the development of the telecom sector. Institutional and regulatory reforms of the telecom sector are crucial for future development of the region. The instruments of policy reform include the progressive opening of different segments of the telecom market, facilitating private investment and privatizing the state monopoly operator. There are three key decision areas: what market segments to open; when to open them; and whether to privatize the state operator. For SEE countries, there are advantages in aligning as closely as possible what market segments to open and when to open them. It should be noted that in Romania the state operator has already been privatized, and that in Bulgaria the process has been initiated but awaits completion. In both instances, extensive exclusive rights have been granted until 2003. A full audit of all policies is required for SEE members.

7.34 Regulatory reform is needed to support the implementation of policy reforms and ensure the transition to, and orderly functioning of, market relations. In this respect, the Regulatory Reference Paper of the WTO is a relatively low hurdle in comparison to the European Directives and the *acquis communautaire* and can be implemented in the short term. However, in the medium term it will be advantageous for SEE to implement the EU framework. The key features of both frameworks are independent National Regulatory Authorities, transparent licensing regimes, controls on “dominant or major suppliers”, competitively neutral Universal Service Obligations and cost oriented interconnection. These elements should form the basis of the regulatory framework for SEE constituents.

7.35 A program of regulatory reform to provide an environment in which private investment can flourish and in which cross border cooperation and market integration can take place will include the following recommendations for actions. First, reforms among SEE countries will need to be coordinated, and consensus built on policies, regulatory framework, and timing. Second, once the overall regulatory framework has been established, regulatory capacity building will need to be emphasized. Finally, the establishment of “clubs” of mutual interest should be facilitated. The SEE region presents in fact a fragmented market, and this may act as a handicap for development in the telecom sector. While not all SEE countries may wish to integrate their markets in the short run, in the long term the EU aspirations of the constituents will ensure that the SEE region becomes an integrated market. It is possible for those wishing to achieve a degree of integration to establish sub-regional “clubs” in the short term. The alignment of policy reform and regulatory frameworks will facilitate such “clubs” of mutual interest, which could take the form of the mutual recognition of certain classes of license. In addition, “clubs” may wish to cooperate in the area of numbering to facilitate cross border service provision or to ensure that a cross border call within the “club” is not treated as an international call.

---

<sup>78</sup> See “Overcoming Obstacles to Liberalization of the Telecom Sector in Estonia, Poland, the Czech Republic, Slovenia and Hungary”, World Bank Technical paper No. 440.

7.36 One essential element of reform in the telecom sector—necessary both to provide low cost, high quality services and also to pave the way to the privatization of the sector—is the commercialization of existing operators and separation of services aimed at reducing cross-subsidization. In turn, tariff reform is a key element of regulatory reform and an element of privatization policies. Where such reform could lead to a significant reduction in the customer base, it may be necessary to design ‘low user schemes’ to ensure continued access. In addition, alternative options to the traditional privatization model—to bring a strategic partner to the incumbent operator—could be considered in a number of countries, and in general where it is unlikely that there will candidates for the post of strategic partners.

## D. ENERGY

### Performance of the Sector and Key Issues

7.37 The SEE countries are net energy consumers, with energy imports from outside the region representing approximately 40 percent of total energy consumption. Both energy production and consumption have fallen during the last decade due to major economic adjustments and/or war. However, energy consumption is likely to increase as economies recover, although several of the current energy-intensive industries may no longer be competitive and therefore exit the market. Per capita primary energy consumption in the region is about half of that in developed European countries. Consumption per unit of output is two to three times the OECD-Europe average, which illustrates the inefficient production, supply and use of energy in much of the region. Prevailing high-energy intensities constitute economic and environmental liabilities. Heavily polluting coal accounts for 85 percent of electricity generation in FYR Macedonia, and one-third or more in Bulgaria, Romania and Bosnia and Herzegovina. Increasing energy prices may also be contributing to over-cutting of forests for fuel-wood which has especially taken place in lower income countries such as Albania.

7.38 While the need to improve overall energy conservation and efficiency is well recognized in the region, and all governments have embarked on market-oriented reforms, progress has been uneven. Energy prices are, on the whole, well below economic levels, and pricing/tariff structures are inappropriate. Energy trade is hampered by poor infrastructure and the rupture of traditional transport interconnections, as well as by the political and social legacy of the conflicts in the region. Energy sector institutions are generally still state-owned vertically integrated entities. Institutional capacity is often limited. Energy policies, legislation and standards differ substantially from European norms and practices. The region is not yet equipped to address its increasing importance in transiting supplies of oil and gas. In general, the policy and institutional framework required to encourage private sector investment does not yet exist.

7.39 **Electricity.** The development of the electricity generation and transmission systems in each country has been based on autonomous expansion plans, without taking into consideration the opportunities offered by exchanges with other countries, except for ad hoc exchanges. However, considering the generation mix of hydro and thermal

production and the seasonal demand characteristics, a number of opportunities would appear to exist for mutually beneficial exchanges. This is applicable to the region as a whole, but particularly for the countries that previously were republics within the former Yugoslavia, as generation and transmission infrastructure was based on significant exchanges between the republics. A regional approach should, therefore, provide significant potential for benefits in the form of future investment savings, increased reliability and quality of supply, reduced environmental damage and opportunities for electricity trade.

**Table 7.3: Energy Use (1995)**

Country	GDP per unit of energy use (US\$ per kg oil equivalent)	Sources of electricity (%)					Consumption per capita kwh (US\$)	Transmission and distribution losses (% of output)
		Hydro- power	Coal	Oil	Gas	Nuclear power		
Albania	1.8	95.2	0.0	4.8	0.0	n.a.	623	51
BiH	n.a.	64.5	35.5	0.0	n.a.	n.a.	n.a.	23
Bulgaria	1.0	3.1	43.1	3.6	7.9	42.4	3,415	13
Croatia	2.8	59.4	2.7	27.7	10.1	n.a.	2,074	19
FYROM	n.a.	13.1	86.3	0.6	n.a.	n.a.	2,443	12
Romania	0.7	28.2	35.1	9.8	26.9	2.3 <sup>a</sup>	1,603	11
FRY	n.a.	30.2	25.0	2.4	3.7	69 <sup>b</sup>	2,921	30

a. In 1996.

b. Thermal power.

Source: World Bank, "World Development Indicators", 1999 and OCHA Belgrade (United Nations Office for the Coordination of Humanitarian Affairs). "Electricity and Heating in the Federal Republic of Yugoslavia: Executive Summary of Predicted Winter Shortages and Recommended Humanitarian Measures". September 1999.

7.40 Current installed capacity in South Eastern Europe is about 40,000 MW of thermal generation (including about 5,000 MW from three nuclear power plants) and about 18,000 MW of hydro generation. Because of the overall fall in demand, installed capacity in the region is generally adequate. However, the power industry in the region is characterized by polluting, inefficient and aging capacity. Environmental and safety considerations may necessitate restrictions on the operation and development of nuclear and solid fossil fuel-fired plants, and this could considerably change the current supply-demand situation as well as operational practices and expansion plans. Thus significant refurbishment and augmentation of this capacity may be required in the coming years. Another important consideration could be the high demand projections for Turkey, which could result in a need for increased electricity imports from South Eastern Europe—but this may not be a long-term opportunity and investments to meet this demand may not be justified.

7.41 The majority of the SEE countries are not interconnected with the West European UCTE (Union for the Coordination of Transmission of Electricity) integrated system. Prior to the conflicts in the region, some of these countries were interconnected to the UCTE system. Restoring the interconnection for these countries and extending the network to others will contribute to overall stability of the transmission network and facilitate increased power transactions.

7.42 **Coal** (mainly lignite) is the main indigenous source of energy supply, even though the reserves are of low quality with high sulfur and ash content. It is particularly dominant in the electricity-generating sector. Although it will remain an important source of energy in the region despite its environmental drawbacks, its share of the total energy market is likely to fall over time. Some of the mines are uneconomic and should be closed.

7.43 **Gas.** One of the important constraints for the gas industry is significant dependency on external gas supply sources, notably from Russia (Gazprom). Natural gas from Russia is transported to the region using two networks: (i) the pipeline system linking Russia to the former Yugoslav Republics through Hungary; and (ii) the North-South trunk line crossing Romania and Bulgaria into Turkey. Albania is the only country in the SEE region that does not have any natural gas interconnections. Underground gas storage capacity is limited and insufficient to support domestic or regional needs, and needs to be increased.

7.44 There is a need to optimize gas imports and to diversify the gas sources, but the near to medium-term diversification options are limited. Given Gazprom's interest in developing markets in the region and its need to transit certain SEE countries to access key larger markets (e.g., Turkey and Greece), a regional approach to negotiating with Gazprom warrants consideration.

7.45 Natural gas demand is expected to increase as countries respond to environmental problems, but this may be offset to some extent by the impact of pricing at international parity levels and of payment discipline. Furthermore, the increase in gas demand will depend on the rate of expansion and interconnection of the natural gas grid system in the region. Except for Romania, these systems are not well developed and integrated. The full market potential for gas can only be realized with the construction of new gas transport pipelines, the further development of gas distribution infrastructure and greater integration of the gas markets in the region.

7.46 **Oil.** The regional demand for crude oil cannot be satisfied by the region's own oil resources. Only Romania, Croatia, FRY and Albania have sizable oil production. In spite of the high nominal refining capacity, the actual available capacity is not sufficient to provide the required product mix. Furthermore, it is expected that, although the demand increase for crude oil and refined products will be moderate, there will be considerable modification in the product specifications with a greater increase in the demand for high-quality and lighter products, thereby placing greater pressure on the need to modify the output and technological processes of existing refineries. A critical decision to be taken in the affected countries will be to choose between costly upgrades of existing refineries and increased product imports. Such decisions, together with

demand growth both in the region and in other regions to be supplied through South Eastern Europe, will have a major impact on the future development of the transport infrastructure for crude oil and key products such as gasoline and diesel.

7.47 The increasing volumes of crude oil that will enter the Black Sea market provide an opportunity to the region to take advantage of the competition between supplies from both the east and the west. The region can also play a key role in getting crude oil from the Caspian to market and in helping to reduce the environmental concerns associated with increased oil shipments through the Bosphorus.

### **Regional Approach to Energy Sector Development**

7.48 **Benefits of regional approach.** The availability of reliable, low-cost and environment-friendly sources of energy will be a critical input for the rapid and sustainable economic development of South Eastern Europe. A regional approach to energy supply will offer significant advantages both in terms of improved utilization of existing supply/production capacities as well as in optimizing future investments. As stated earlier, considering the generation mix of hydro and thermal electricity production and the seasonal demand characteristics, a regional approach will provide significant benefits in the form of future investment savings, increased reliability and quality of supply, reduced environmental damage and opportunities for electricity trade. Similarly, a coordinated regional approach for gas (both in terms of negotiations with Gazprom and construction of new gas transport pipelines), as well as oil will enable optimized investment decisions to be made.

7.49 **Energy sector study for the region.** Region-wide analytical work needs to be carried out on energy balances and associated issues to justify decisions related both to increased supply and to transmission interconnections, while also taking into account the large energy sectors of Turkey and Greece and the issue of transit of gas to Western Europe. This will be a major undertaking and will include a detailed review of all recent studies (including the work done by SECI and the Balkan Energy Interconnection Task Force), analysis of energy balances and associated issues, development of an appropriate energy strategy for the region and identification of specific energy infrastructure investment needs. A major focus of the study will be to review the current pace of sector reforms in different SEE countries and make recommendations on the measures to be taken to achieve rapid and compatible reforms, so that an environment conducive to attracting private sector investment is created. The identification of specific projects itself could also help attract private sector investment.

7.50 **Implementation of projects.** Concurrently, certain projects can be taken up for immediate implementation provided they meet the criteria of improving regional or intra-regional cooperation and the project justification is sufficiently well-established to warrant proceeding prior to the completion of the comprehensive energy sector study mentioned above. These will include projects such as the reconstruction of the high voltage power transmission networks in Bosnia and Herzegovina and Croatia, which would facilitate reconnection of the power systems of the SEE countries to the UCTE.

7.51 **EU-accession issues.** In the context of the eventual integration of SEE countries in the European Union, attention has to be given to the wide range of accession requirements related to the energy sector. One critical requirement relates to the implementation of Community Directive 96/92/EC, which created a single EU market for electricity and has required progressive liberalization of national markets. The Directive's basic objectives are increased competitiveness through better service for energy consumers, improved environmental protection, and greater security of energy supplies, while ensuring the continued meeting of basic public service requirements. To these ends, the Directive sets out the minimum conditions under which competition can develop in a fair and transparent manner, but does not impose a rigid single market structure. While many SEE countries have already been moving towards the liberalisation of their electricity sectors, the development of a competitive electricity market is a complex task, requiring considerable sector restructuring and legal development. Development and implementation of technical assistance plans, tailored to the specific requirements and needs of each country, is therefore an important input. Such technical assistance is already being provided in the case of several SEE countries, but any additional requirements should be assessed and financing provided.

#### E. CONCLUSION

7.52 This Chapter identifies a number of important issues for infrastructure development that would yield significant benefits to the SEE countries if addressed within a regional approach, instead than on a national level. These include not only the design and financing of investments in regional infrastructure proper—for example the major transport corridors, or the connection with the European (UCTE) integrated electricity system—but also regulatory improvements to take advantage of potential economies of scale—for example through improving airspace navigation control, facilitating energy trade, or promoting integrated telecom systems. In addition, a regional approach to infrastructure development would be necessary to reduce transaction costs associated with the creation of new nation states with international borders, facilitate the strengthening of institutional arrangements through the region, and assist the SEE countries in adopting EU standards for infrastructure development and regulation, with a view to future integration.

**TABLE 7.4: SELECTION CRITERIA MATRIX FOR SEE REGIONAL INFRASTRUCTURE PROJECTS**

	<b>Regionally Joint Project</b>	<b>Multi-country Project</b>	<b>National/Bilateral Project with Regional Impact</b>
<i>Agreement among SEE countries, most concerned</i>	On location, ownership, project implementation, operation.	On cooperation, mutual control of supervision, peer pressure.	Commitment of the project government to share information with other countries in the region
<i>Sectoral policy/institutional reforms</i>	The project fits into the national sectoral policy acceptable to IFIs		
	<ul style="list-style-type: none"> <li>• Introduction of European/international standards</li> <li>• Economies of scale</li> </ul>	<ul style="list-style-type: none"> <li>• Regional and European legal harmonization</li> <li>• Efficiency improvement</li> <li>• Synergy effect</li> </ul>	<ul style="list-style-type: none"> <li>• Ambitious sector restructuring/policy reforms to be set as an example to others</li> <li>• Pilot character</li> <li>• Efficiency increase</li> <li>• European/international standards</li> <li>• European integration: EU compatible institutions</li> </ul>
<i>Emergency character</i>			
<i>Bankability criteria</i>	<ul style="list-style-type: none"> <li>• Financially, economically justified</li> <li>• Environment and social assessment</li> <li>• Readiness for implementation</li> </ul>		
<i>Other</i>	Project conditions on a case by case basis		
	<ul style="list-style-type: none"> <li>• <b>At least two countries</b></li> <li>• <b>Joint investment</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>At least three countries</b></li> <li>• <b>Synergy from the harmonization of several national projects</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Sectoral reform with regionally demonstrative impact and/or part of a regional/Trans-European network</b></li> </ul>