European Investment Bank

Basic Infrastructure Investments in South-Eastern Europe

Regional Project Review

Regional Funding Conference for South-Eastern Europe
Brussels, 29-30 March 2000

European Investment Bank
Balkan Task Force
100, bd Konrad Adenauer, L-2950 Luxembourg
Tel: 352 43 79 6234; Fax: 352 43 79 6286
E-mail: BalkanTaskForce@eib.org

Table of contents

List of annexes

List of tables

This report was prepared under the guidance of Walter Cernoia, Director for Central and Eastern Europe and Massimo d'Eufemia, Co-ordinator of the European Investment Bank's Balkan Task Force. It was compiled by Axel Hörhager from the EIB Balkan Task Force and relies on contributions from Christopher Hurst, Kristian Uppenberg (economics), Philippe Ostenc (transport), Heiko Gebhardt and Josef Weltermann (energy), Mark Pevsner (telecommunications) and Jim Winpenny (water). Technical issues were co-ordinated under Caroline Reid, General Director, Peter Bond and Günter Westermann, Department Directors from the Bank's Projects Directorate. The report is in part based on two previous studies by the EIB's Balkan Task Force, entitled "Long-term development issues for South-Eastern Europe" (July 1999), and "Basic infrastructure investments in South-Eastern Europe" (September 1999). Valuable comments and inputs are acknowledged from the World Bank, in particular by Eva Molnar, Arntraud Hartmann, Rory O'Sullivan, Henk Busz, Iftikhar Khalil and Manuel Marino; from the European Commission by Ollivier Bodin, Josef W. Grüter, Ioannis Galanis, Nicholas Cendrowicz and Harry de Backer; and from the European Bank for Reconstruction and Development by Olivier Descamps, Ananda Covindassamy, Alexander Auboeck, Thomas Maier and Ken Lonnen. From the Stability Pact, Fabrizio Saccomanni, Ed Kronenburg and Johannes Sattler are thanked for their cooperation. Sharon Pierrard-Burnett and Pernilla Holgersson kindly assisted with the transcript.

EXECUTIVE SUMMARY

1. **In the context of assistance in the reconstruction of South-Eastern Europe, the European Investment Bank has been mandated by the High Level Steering Group and the Stability Pact to co-ordinate the sector review process and assess projects in basic infrastructure.**

2. **The European Investment Bank organised technical meetings with the European Commission, the European Bank for Reconstruction and Development and the World Bank in order to determine the criteria for selecting priority projects at a regional level. These criteria are essentially based on project maturity and standard evaluation aspects used by the international financial institutions, such as technical, economic, financial and environmental feasibility.**

3. **Sector considerations point to the necessity of an adequate institutional and competitive framework as condition for the meaningful implementation of investment projects. While considerable progress has been made on the path to sector reform in several countries of the region, continued efforts are required along the lines indicated in existing reform programmes. At the same time it is recognised that investments in basic infrastructure represent a key ingredient for economic growth.**

4. **The current list of regional projects is based on country submissions of projects considered to be of national and regional priority, as well as on information provided by the international financial institutions regarding selected projects for which they were approached or which they have started to prepare.**

5. **Project suggestions have been grouped into a Quick-Start Package of projects for which implementation is likely to start, or a tender will be awarded, during the next twelve months (up to 31 March 2001); a Near-Term Package of projects which appear prima facie economically justified and do not present major sector or project issues, thus for which preparation (including tendering) should be accelerated; and a Medium-Term Package of projects that require further investigation or analysis on specific issues which must first be solved.**

6. **The proposed Quick-Start Package consists of a total of 35 projects with an estimated cost of EUR 1131 million, and the Near-Term Package includes 50 projects costed at EUR 2735 million. Transport (roads, railways, ports and waterways, and airports) accounts for 91 % of Quick-Start projects and 62% of Near-Term projects, followed by energy projects accounting for 3% and 25% respectively. The countries particularly affected by the recent crises, namely Albania, Bosnia and Herzegovina and the FYR of Macedonia, account together for 35 % of all projects which should start between now and the near- term, while their population represents 20% of the region (excluding the FR of Yugoslavia).**

7. **To respond to the requirement of consistent regional investment planning and to advance work on the Medium-Term Package, several regional initiatives are proposed, as follows:**

TRANSPORT

- **A Transport Infrastructure Regional Study, to determine transport investment priorities on a regional scale, based on an extension of the Transport Integrated Needs Assessment (TINA) carried out in Central and Eastern European countries; to be supervised by the European Investment Bank.**
- **The Transport and Trade Facilitation Programme, focussing on cross-border improvements and technical assistance; under preparation by the World Bank.**
- **An Air Traffic Infrastructure Regional Study, to assess in particular issues of the optimal extension of airport capacity in the region; to be supervised by the European Investment Bank.**

ENERGY

- **A Regional Strategic Natural Gas Study and a Regional Oil Pipeline Network Study to assess priorities among suggested projects according to the conclusions of the February 2000 report of the European Commission's Balkan Interconnection Task Force; to be supervised by the European Commission in consultation with the European Investment Bank.**

WATER AND ENVIRONMENT

- **An Environmental Master Plan for the Adriatic Sea, proposed by Croatia.**

TELECOMMUNICATIONS

- **A Package of Technical Assistance to promote telecommunications access, regulatory reform, training and information society development; proposed by the European Commission and the European Bank for Reconstruction and Development.**

8. Serious implementation difficulties have faced on-going projects in a number of countries in the region, and particular attention will need to be paid to implementation issues (such as legal framework, institutional and public administration aspects) if the regional projects are to be successful.

9. Progress on setting up financial plans will necessarily have to be pursued on a project-related basis and take the existing procedures of international financing institutions and bilateral donors into account. Financing of the proposed packages will need to consist of a mix of long-term debt, grant finance, budgetary funds of recipient countries, bilateral concessional funds and, whenever feasible, private sector involvement.

INTRODUCTION

In the aftermath of the recent conflicts in South-Eastern Europe (SEE), the international community, together with the countries of the region, is seeking to prepare a regional programme which will help to lay the foundations for peace, security and stability in the region. The Stability Pact signed in June 1999 in Cologne, and reconfirmed during the summit of Heads of State in Sarajevo in July 1999, was given as one of its missions to define and support such a programme. For this purpose, the region covers Albania, Bosnia and Herzegovina, Croatia, the Federal Republic of Yugoslavia, the Former Yugoslav Republic of Macedonia, as well as Bulgaria and Romania (SEE-7 countries).

In this context, the European Investment Bank (EIB) was given a leading role by the High Level Steering Group and the Stability Pact in the elaboration and co-ordination of investment programmes for basic infrastructure projects in the region. In particular, the Stability Pact Working Table II on Economic Reconstruction mandated the EIB to co-ordinate the sector review process and develop and assess projects in infrastructure by gathering proposal and identifying, in collaboration with the European Commission (EC), the European Bank for Reconstruction and Development (EBRD) and the World Bank, priority projects at a regional level.

In the evaluation process, the EIB collected and discussed basic infrastructure projects with the countries of the region during field visits and through contacts via the Stability Pact Working Table II. The focus was on the transport, energy, water and telecommunications sectors. In order to sift through the many proposals received and assist in the preparation of regional operational programmes for investment in basic infrastructure, the Bank organised a series of technical meetings with representatives of the EC, the EBRD, and the World Bank to discuss the different issues related to basic infrastructure projects, and in particular to:

- elaborate criteria on which to assess basic infrastructure projects in order to ensure that such projects are technically, economically, environmentally and financially viable, and are consistent with regional economic development objectives;

- exchange information between the International Financial Institutions (IFIs) on the status of the respective operational project pipelines, especially as regards the opportunities for co-financing;

- review the project lists supplied by the countries concerned through the Stability Pact and devise an appropriate response as foreseen in the procedures of Stability Pact Working Table II; and

- exchange views on suitable ways of approaching the issue of an appropriate sector framework essential for sound project development and on the derived conditionality recommended for capacity building associated to project work.

The activities in the infrastructure sectors were carried out in parallel with the tasks undertaken by the World Bank to prepare an overall Regional Strategy for South-Eastern Europe . The objective of the overall regional exercise is to give strategic direction on how economic and social benefits could be achieved from inter- and intra-regional integration within SEE

countries and with the European Union. The results are also the fruit of close collaboration between the relevant international institutions, including the OECD and the Council of Europe. They provide an important complement to the present work in the infrastructure field, and there are numerous cross-links between the two.

Another companion work carried out in a similar framework is led by the European Bank for Reconstruction and Development and concerns the role of the private sector in the development of the South-East European region. Again there are important areas of common interest between this theme and basic infrastructure development and the presentations should be viewed as complementing each other.

The present paper is structured into a Part I subdivided into sections according to the infrastructure sub-sector considered, as follows: transport (roads, railways, ports and waterways, and airports); energy (mainly electricity, gas and oil); water and environment; and telecommunications. In each case, a sector presentation is made and the issues of sector strategy highlighted according to regional themes running across the countries considered. This lays the groundwork for the strategic considerations and selection criteria underlying the project and programme suggestions developed in Part II.

It should be stressed that the objective is to adequately reflect the proposals for sector reform usually already formulated in great detail by various institutions, in particular the World Bank, the International Monetary Fund, and the European Union, while taking the realities of the countries facing a difficult regional environment into account.

Project proposals necessarily reflect suggestions rather than fully-defined packages appraised according to every detail. There appear to be two broad types of project categories: on the one hand truly "regional" activities involving two or several countries concerning areas with a direct bearing in the area considered. The other category concerns projects with a primary national dimension, but with clear regional relevance and implications, such as development of certain transport axes, key enhancements to important infrastructure facilities with a high visibility in the region, or particular demonstration effect. The project summary tables highlight these features, indicating as well whether a project appears to warrant inclusion in a so-called Quick-Start Package, for which implementation is likely to start or a tender will be awarded during the next twelve months (up to 31 March 2001), or a Near-Term Package which appears prima facie economically justified and does not present major sector or project issues, thus for which preparation (including tendering) should be accelerated. Projects that require further investigation or analysis on specific issues which must first be solved are classified into a Medium-Term Package. The distinction is not hard and fast, but rather intended to be indicative and useful as a tool in pointing to priorities for action.

PART I – SECTOR REVIEWS

1. BACKGROUND

1.1 The origins of economic decline

The series of conflicts which plagued large parts of the Balkan region since the early 1990s have without doubt played a major role in the economic decline of many of the countries which make up former Yugoslavia. A key feature shared by the SEE-7 countries (Albania, Bosnia and Herzegovina, Croatia, the FR of Yugoslavia, the FYR of Macedonia, as well as Bulgaria and Romania) is the relatively low level of per capita income compared with Central and East European countries. The typical range for per capita income in the Balkan region is around USD 1,000 to 1,700, Croatia being the main exception with an income above USD 4,000 per inhabitant, similar to Hungary. The total population of the SEE-7 countries is around 55 million, or 15% of the EU population of 375 million. Since the region is Europe's poorest, its economic share is even more marginal. Total GDP in the SEE-7 stood at around EUR 100 billion in 1998, or 1.4% of total EU GDP. Prior to the conflicts, per capita income in the Federal Socialist Republic of Yugoslavia stood at some current USD 3,500 compared to less than half of that level at present. However, besides the costs of conflict, the lack of structural reforms can be identified as a key impediment to sound longer-term economic development in the region. At the same time, the lack of economic growth based on trade and specialisation has reinforced the informal sector and cemented traditional rural structures, which play the role of a social safety net of last resort for a population exposed to repeated hardships.

1.2 The challenge of redeveloping infrastructure

Infrastructure in many of the concerned countries has suffered gravely on a number of counts. There has been direct war damage, which has destroyed or rendered unserviceable large parts of important pieces of the infrastructure. In Bosnia and Herzegovina, for instance, the electric high voltage grid was destroyed as regards key links and transformer stations, including the central dispatch centre. Many power stations themselves were damaged, both thermal and hydro, suddenly diminishing generating capacity by half or more, turning a net exporting region into an importer. During the Kosovo conflict, many key bridges in the FR of Yugoslavia were severed, severely impeding traffic flows.

Possibly graver damage to the existing capital stock of infrastructure was caused by the indirect effects of the conflicts due to deteriorating incomes, since maintenance and renewal activities were severely curtailed, resulting in an accelerating run-down. This was compounded by the lack of reforms, which could have shifted the financial burden away from already impoverished state budgets for civil infrastructure towards user-based, cost-recovery mechanisms. The principle of payments for tolled motorways was not called into question, but the real value of these payments was strongly reduced by high inflation levels, and social criteria which prevailed in the setting of railway tariffs worsened the financial deficits of the companies providing rail services.

The fundamental shifts in traffic flows and the trends in the configuration and state of service of existing infrastructures probably warrant a complete reassessment of the needs that a renewed infrastructure system would have to provide in the short- to medium-term. Nevertheless, important fundamental factors remain which indicate that, in any hypothesis of renewed regional development, many components of the past infrastructure systems would in any case need to be re-implemented. The fundamental geo-strategic features of this part of Europe are such that the importance of many age-old trade routes is undiminished, as illustrated by the shortest corridor for north-west/south-east trade that follows the course of the Sava and Danube rivers. For land-based power exchanges to take place between Greece and the rest of the EU, the high tension grid as it existed before the conflicts is the mode of choice. Water supply and wastewater treatment infrastructures will remain to be dictated by the existing population centres. Likewise, the road, railway or electric power routes connecting Greece with the other EU Member States pass through the countries of the region under consideration, and are retained in the European Union's network of Pan-European Transport Corridors.

1.3 Conflict-related effects and present status of infrastructure

The various conflicts that erupted in large parts of former Yugoslavia resulted in considerable damage to the infrastructure. The principal territories involved follow the sequence of conflicts in the 1990s. Besides direct damages, the period of unrest and economic decline during the 1990s in much of the Balkan region caused equally severe indirect effects in terms of neglected periodic and current maintenance, which require progressively larger volumes of remedial work. In Bosnia and Herzegovina, hostilities lasting from 1992 to 1995 are estimated to have caused damages to 70 bridges, including 10 bridges connecting to Croatia, as well as damaging some 28% (3,000 km) of roads. The railway system and public transport in the whole of Bosnia and Herzegovina were also extensively damaged in general and effectively ceased to operate. The airports were directly hit by the conflict and sustained heavy damages still not totally remedied. Some 2,300 MWe of hydro and thermal electric generating capacity was knocked out, and 60% of all high voltage transmission lines and associated control devices became inoperable. District heating facilities in many towns were also severely damaged. Water supply and waste water treatment works also suffered. Some 30% of all telephone connections were rendered inoperable, including 90% of the international lines. Restoration is complicated both by the need for close co-operation between all communities within the country and by the presence of mines in many areas.

In Croatia, the war over Eastern Slavonia, which began in 1991, caused heavy damage to the region, including the infrastructure networks. Most notable among these is a former major node of the Yugoslav power grid, the Ernestinovo substation, which is still in its damaged state although of central importance to the region if long distance exchanges of electricity are to resume. In other parts of Croatia, damage to the infrastructure was severe, such as the severing of transport links along the route of the Adriatic coast or of railway lines in the Knin area formerly inhabited by a majority of Serbs. However, major cities such as Zagreb itself were not affected by any lasting damage.

In the FR of Yugoslavia, the recent Kosovo conflict, lasting from March to June 1999, brought about extensive damage in infrastructure, particularly in Serbia. Road and rail bridges were damaged or destroyed, of which some across major rivers (Danube and Sava). Railway stations and airports also suffered. Damage to the transport system in Kosovo was estimated at some EUR 90 m, including road bridges, the central railway station at Kosovo Polje and bus depots in Pristina. These estimates are being continuously updated and refined. The telecom sector suffered considerable damage to local, long-distance and international links. Reconstruction is proceeding in parallel with the need to develop an effective operating entity.

The geographical position of Serbia and its rather well developed transport infrastructure give it a key role in providing good connections inside the SEE and promoting regional integration. *The economic consequences of the sustained damages resulting in the interruption of key routes are severe and will be so until provisional structures or other arrangements (ferries) are put into place*. To gain an appreciation of possible orders of magnitude, the following calculation can be made. If it is assumed that average operational vehicle costs of EUR 0.20 per km for a detour of 100 km for 10 000 vehicles per day are incurred as a result of a lost structure, the resulting annual costs are some EUR 70 m, a considerable amount. It should also be noted that the economic consequences of deferred or interrupted maintenance and rehabilitation works could be considerable.

The losses from Danube shipping are also severe. It has been estimated by the port of Regensburg in Bavaria (Germany) that losses of some EUR 24 m p.a. are incurred and the economics of the recently built Rhine-Main-Danube canal are severely disrupted. Hungarian, Bulgarian and Romanian shippers also suffer considerable losses.

In the energy sector of the FR of Yugoslavia, some 14 power stations, the two major refineries, and many transmission facilities were damaged or destroyed, including 9 key oil storage depots. In the water sector, disruption occurred to networks in cities and pumping stations due to lack of electric power and bridge destruction (severing water supply lines in Novi Sad and Zemun). Pollution of the Danube and other water resources from chemical spills near refineries and plants at Pancevo and Novi Sad also took place. The telephone system suffered relatively less, although a number of exchanges were damaged.

A key element affecting all of the eleven countries in the Danube basin, of which four are in the region under consideration, is the *interruption of Danube shipping*. The destruction or damage of a series of major bridges over the river means that long distance shipping will not be able to resume until the waterway is cleared.

In assessing the needs for infrastructure reconstruction after the present conflicts, a factor to be taken into account is the shift in patterns of trade and traffic that has occurred in a number of areas, which may warrant the emphasis on new routes or types of investment. Newly independent countries have put higher priorities on some corridors, like the north-east/south-west corridor in Croatia, instead of the former “Trans-Yugoslav” north-west/south-east corridor.

1.4 Public investment budgets for infrastructure

Theoretical economic considerations point to the crucial role of infrastructure investments as pre-conditions for economic growth, as well as providing some pointers to the likely sources of financing for such investments. This appears particularly relevant for the region under discussion.

As confirmed by a survey of a number of countries, government investment expenditure in low and medium income countries tends to average around 4% of GDP. Other research suggests that roughly half of this, around 2% of GDP, represents public infrastructure, typically roads and buildings. Although the variations across countries can be substantial, these numbers can be seen as useful benchmarks for sustainable and suitable levels of public investment for developing economies. The countries in central, eastern and south-eastern Europe on the whole show values close to the sample mean. However, individual countries often deviate substantially, which is to be expected given the economic upheaval that many of these economies have experienced. At 3.7% and 3.5%, respectively, the public investment ratios in Romania and Croatia in 1991-98 were close to the sample average. In Albania, public investment averaged a much larger 6.0% of GDP between 1991 and 1998, accounting for as much as two thirds of aggregate investment in the economy. In Bulgaria, the ratio averaged only 1.8%.

The charts below show the distribution of investment and its financing in the South-Eastern European countries (SEE-7) as a share of GDP.

Figure 1 : Private and Public Investment in South-Eastern Europe

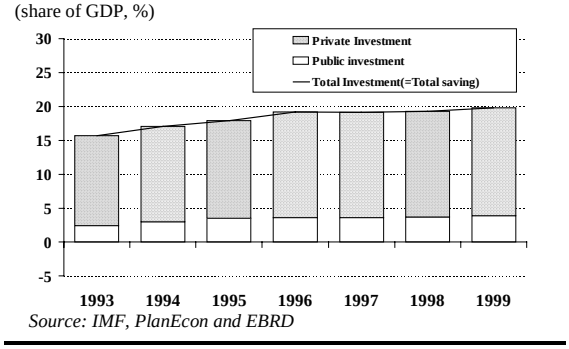

Figure 2 : Financing of Domestic Investment in South-Eastern Europe

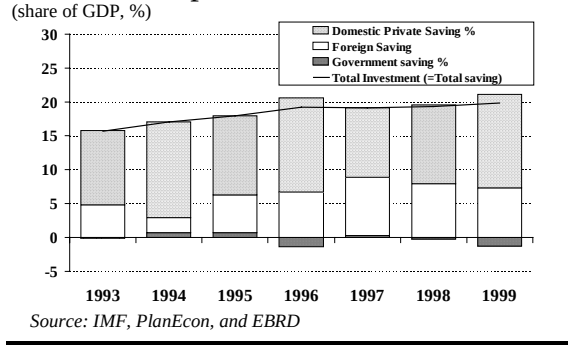

Figure 1 shows the distribution between private and public investment. Total fixed investment is still low by international standards, almost 10 percentage points below the more advanced CEECs as a share of GDP. The low total is mainly due to the low level of private investment, since public investment is estimated to be close to the world average of around 4% (however, it should be stressed that complete numbers on public investment are not available).

Figure 2 illustrates the financing of domestic investment. As defined in national income accounts, total investment must equal total saving, i.e. the sum of private saving, public saving and foreign saving. Foreign saving is equal to the current account deficit. The chart shows that foreign saving has been an important source of investment financing in the 1990s, a consequence of the region's low level of domestic saving. Public saving is equal to the government budget balance, plus government investment. Since government deficits have on the whole equalled public investment, the net government sector contribution to domestic saving is close to zero.

Infrastructure investment is important for economic growth. In developed economies, electricity, water and telecommunications are used in the production process of nearly every sector and transport is an input for nearly every commodity. However, the effectiveness of infrastructure investment on economic growth also depends on effective macroeconomic policies as well as the effectiveness of the implementation of infrastructure projects.

Seen from the point of view of infrastructure investment, the rate of return on investment and the government's ability to tax users or the public at large suggest how much the government can borrow. A common rule of thumb is that a government can borrow to finance public investment, but should finance current expenditures with taxes. The reason is that investment results in the build-up of the public capital stock, which increases economic growth. Assuming a 15% rate of return on public investment in SEE-7 countries, and that the resulting economic growth is subject to a 33% tax rate, then the government could sustainably finance all of this investment through borrowing if the real interest rate is 5% (=15% x 33%).

Assuming a ratio of 2% of GDP, infrastructure investment in the SEE-7 countries would amount to USD 14.4 bn in the 2000-2005 period, or USD 2.4 bn per year on average. The financing of this, together with other public investment, would require foreign borrowing of USD 30 bn, or USD 5 bn per year for the SEE-7 countries. This projection is intended to indicate possible orders of magnitude, rather than precise forecasts.

An important issue in the context of lending from international financial institutions concerns foreign debt ceilings, if any, fixed in the framework of macroeconomic stabilisation programmes, such as those of the International Monetary Fund. These debt ceilings can be extremely constraining, and, for certain types of projects that do not readily attract private financing, have the effect of seriously delaying them. The fact that external borrowing constraints are largely binding in SEE-7 and – at least on average – that public investment is close to the average for low to middle income countries suggests that there is limited scope for fiscal expansion. Public utilities should in principle be able to finance investment from their own fees or from borrowing backed by their own assets and revenue streams. This includes some of the sectors referred to below. However, weak balance sheets, a lack of cost recovery due to insufficient ability to pay of consumers, and insufficient independence means that many of these companies nevertheless rely on government guarantees and budgetary transfers, thus adding to the accumulation of public debt. For public utilities, progressive restructuring can therefore be a key element in raising the level of investment in South-Eastern Europe. On the other hand, for certain key investments in the infrastructure sector such as roads, the state will indirectly or directly continue to play a significant role, including in the provision of finance.

2. THE TRANSPORT SECTOR

2.1 Transport networks

Roads

There are extensive road networks in the SEE region, albeit of differing densities. Primary and secondary roads amount to some 57,000 km in the SEE-5 countries (Albania, Bosnia and Herzegovina, Croatia, the FR of Yugoslavia and the FYR of Macedonia), and another 86,000 km in Bulgaria and Romania. The tertiary network of local and unpaved roads, which is at least as significant in length, is not considered here. There are some 1,435 km of motorways (two-by-two lane divided highways), which are concentrated in the FR of Yugoslavia, Croatia, Bulgaria, the FYR of Macedonia and Romania (see). Although not reaching the typical levels of the EU, road network lengths are significant in the region and illustrate the considerable capital expenditure that has gone into building and preserving such networks over the years, often in difficult terrain.

Table 1 : Road Networks in South-Eastern Europe

Country	Area	Population (1998)	Length of Main Network				Network Density
			Motorway	Primary	Secondary	Total	
	000 Km2	million	Km	Km	Km	Km	Km per 1000 km2
Albania	29	3.4	0	3225	4300	7525	262
Bosnia and Herzegovina	51	3.4	0	3722	4104	7826	153
Croatia	57	4.6	330	7378	10193	17901	316
FR of Yugoslavia	102	10.6	545	5806	12860	19211	188
FYR of Macedonia	26	2.0	133	599	2952	3684	143
Bulgaria	111	8.3	314	3078	10055	13447	121
Romania	238	22.5	113	14570	58477	73160	307
Total	614	54.7	1435	38378	102941	142754	233

Source: IRF

The state of the network is very uneven, although there is a general trend toward lack of periodic and current maintenance. Most of the investment activity, especially in the high-standard roads, took place in the 1970s and 1980s and the backlog of maintenance is becoming particularly acute in certain cases. In the FR of Yugoslavia, for instance, it is estimated that only 30% of roads are in a satisfactory condition.

Regarding the Pan-European Transport Corridors, defined in 1994 at the conference in Crete and updated in Helsinki in 1997, the SEE region represents an area of high importance for the southeasterly direction. Of the ten Pan-European corridors, six involve the seven countries under consideration (see **map 1**). These are:

Corridor IV	**Berlin/Nürnberg-Prague-Budapest-Constanta/Thessaloniki/Istanbul (ROMANIA, BULGARIA)**
Corridor V	**Venice-Trieste/Koper-Ljubljana-Budapest-Uzgorod-Lvov**
Branch B	**Rijeka-Zagreb-Budapest**
Branch C	**Ploce-Sarajevo-Osjek-Budapest (CROATIA, BOSNIA & HERZEGOVINA)**
Corridor VII	**Danube river and ports (FR OF YUGOSLAVIA, BULGARIA, ROMANIA)**
Corridor VIII	**Durres-Tirana-Skopje-Sofia-Varna (ALBANIA, FYR OF MACEDONIA, BULGARIA)**
Corridor IX	**Helsinki-St.Petersburg-Moscow/Pskov-Kiev-Ljubasevka-Chisinau-Bucharest-Dimitrovgrad-Alexandroupoli (ROMANIA, BULGARIA)**
Corridor X	**Salzburg-Ljubljana-Zagreb-Beograd-Nis-Skopje-Veles-Thessaloniki**
Branch A	**Budapest-Novi Sad-Beograd**
Branch B	**Nis-Sofia on Corridor IV to Istanbul**
Branch C	**Veles-Bitola-Florina-Via Egnatia (CROATIA, FR OF YUGOSLAVIA, BULGARIA, FYR OF MACEDONIA)**

In general the corridors comprise roads and railways, and one corridor is exclusively for river transport. It can be noted that Corridor VIII, is exclusively in the territory of the region.

A formal inclusion of new corridors can be accomplished in the framework of Pan-European transport conferences. However, certain economic and environmental criteria must justify the inclusion of a priority corridor in the Pan-European network. In addition, for Bulgaria and Romania, there is the issue of its relationship to the more general Transport Infrastructure Needs Assessment (TINA) process (see **Box** in Part II, para. 2.1).

Regarding implementation, the criteria for priority development refer to:

- ***interconnection / interoperability***
  demonstrated significant international traffic potential (not less than 10% of total traffic).

- ***realistic timetable***
  implementation possible within 5-6 years.

- ***mode balance***
  contribution of project to a sustainable and balanced infrastructure system, with minimisation of negative environmental impacts.

The issue of competing routes arises to some degree in certain cases, such as between Corridor X and Corridor IV as major transit routes between Western Europe and the South-East toward Turkey. Physical characteristics such as route length, topography of alignment or physical obstacles, and existing capacities may clearly indicate an economically-preferred route (in this case, Corridor X). However, political circumstances or geo-strategic considerations may make the alternative corridor the only feasible route in terms of security in a medium-term perspective. In striking the appropriate balance, the role of already-made investments must of course be factored in.

Railways

Railway networks in the SEE region are comprised of some 25,000 km of route length, of which some 17 % are double-tracked and 41 % electrified. Network densities are low for certain countries such as Albania, Bosnia and Herzegovina, or the FYR of Macedonia, while closer to the EU average for the other systems (see **Table 2**). Railways are a significant mode of transport in the SEE region, despite the difficult terrain and relatively small system size. They also provide key connections to neighbouring countries, particularly towards the north-west.

Each country still runs its own system, which is generally owned and controlled by the state. Reforms of railway companies along the lines of EU Directive 91/440 separating infrastructure and operations have been implemented only partially. Certain countries, under the impulse of international financial institutions, have begun to implement reforms aimed at system rationalisation, reduction of excessive staffing levels, and line and station closures.

Table 2: Railways in South-Eastern Europe

Country	Area	Population 1998	Length of Network 1997					Track Density
			Double track	Single track	Total	of which Electrified		
	thousand km2	million	km	km	km	km	Perc	km/1000 km2
Albania	29	3.4	0	447	447	0	0%	16
Bosnia & Herzegovina	51	3.4	87	944	1031	776	75%	20
Croatia	57	4.6	248	2478	2726	983	36%	48
FR of Yugoslavia	102	10.6	277	3754	4031	1341	33%	39
FYR of Macedonia	26	2.0	0	699	699	233	33%	27
Bulgaria	111	8.3	969	3323	4292	2712	63%	39
Romania	238	22.5	2723	8657	11380	3943	35%	48
Total	614	54.7	4304	20302	24606	9988	41%	40
Memorandum Item EU								***56***

Source: UIC

An example is the Bulgarian Railway Company BDZ, which is pursuing an intensive renewal programme. The decline brought about by the break-up of the centrally-planned economy caused transport volumes to decline drastically, particularly for heavy bulk transport such as coal, ores and cement. This decline has deeply affected the railways, which at present handle only some 55% of the cargo carried a decade earlier. BDZ, assisted by external consultants, has developed a restructuring plan under the guidance of the World Bank, foreseeing a decrease in passenger traffic and a stabilisation in freight traffic. Productivity per employee would increase by 13%. Recently, a draft new railway law has been produced and the first steps towards creating the new structure it foresees are already in the process of being implemented. The most notable of these is the separation of infrastructure from railway operations. A new Republican Railway Infrastructure Company will be responsible for the network, which will become accessible to duly licensed railway operators.

In Romania and Croatia, railway restructuring has also gained some momentum under the aegis of the international financial institutions. In the FR of Yugoslavia or FYR of Macedonia, reforms have been hindered by a lack of outside assistance, the financial situation of the railway companies such as JZ or MK being very difficult, with large state subsidies required to offset losses. In Bosnia and Herzegovina, the first steps have recently been taken to unify the railway system, which had been separated according to political divisions in the country as a result of which it virtually ceased to function.

As a consequence of the poor physical and financial performance of the railway systems in the region, investment was heavily neglected, leading to a deteriorating infrastructure, outmoded rolling stock, and lack of technical innovation in signalling and telecommunications technologies. The effects of political regional fragmentation, economic regression of traditional heavy industries, and increasing use of private automobiles for passenger transport, and trucks for goods, have all been to the detriment of the railway as a transport mode. To stem the decline in performance of the railways, it appears essential that structural reform programmes be put in place, which will require new management and ownership frameworks. This should

be a condition for investments, which should also be designed to augment the railways' efficiency in a perspective of rendering this transport mode capable of making positive contribution to economic growth in the region.

The Pan-European Transport Corridor approach, described in the previous section for roads, is equally applicable to the railways. One of the rationales for proposing land transport corridors is to allow roads and railways to play complementary roles.

A particularly illustrative example is the Trans-Yugoslav Highway (TYH) and the Trans-Yugoslav Railway (TYR) which were supported by EIB and World Bank loans in the 1970s and 1980s, where highway and railway function as complementary modes, the railway helping to alleviate the number of heavy-goods vehicles. This route is at present interrupted for long-distance traffic.

Ports and Waterways

The SEE countries have outlets to the Adriatic Sea via major ports in Rijeka, Zadar, Split and Ploce in Croatia, Bar in the FR of Yugoslavia (Montenegro), and Durres in Albania. Outlets to the Black Sea are Burgas and Varna in Bulgaria, and Constanta in Romania. These ports are generally significant for hydrocarbons or other bulk commodities, although container traffic is gradually being developed. Several of these ports are end-points of Pan-European corridors. Outside the region, Thessaloniki, in Greece, is a natural import and export sea outlet for the land-locked FYR of Macedonia and Kosovo.

Maritime traffic has substantial annual variations. The country with the biggest commercial maritime traffic is Romania (about 40 million tons), followed by Croatia (also 40 million), and Bulgaria (20 million). The port with the largest capacity and development prospects is Constanta, which currently has a throughput of about 40 million tons but has already built a breakwater extension able to accommodate an additional 250 million tons. Traffic growth is linked to the re-opening of the Danube river transport blocked in Serbia, the development of Free Trade and Activity Zones in the vicinity of the port, and the utilisation of new export routes for oil produced in the independent Caspian states and seeking to bypass the Bosphorus Straights. The other ports playing an important regional role are Ploce, where Bosnia and Herzegovina has negotiated an agreement with Croatia so that its goods do not have to pass through Croatian customs, and Durres, which is a valid alternative sea outlet for the FYR of Macedonia.

The region's inland shipping is dominated by the Danube, which, with a total length of 2,857 km, was a key shipping artery - denoted Corridor VII - prior to its interruption. Traffic on the Danube has fallen sharply over the past decade as a result of the economic decline in Eastern Europe and the former Soviet Union, and the successive conflicts in the SEE. The volume of cargo transported shrunk from 140 million tons in 1989 to 35 million tons in 1994, with a partial recovery to 50 million tons in 1996 after the trade embargo on former Yugoslavia was lifted. This figure shows that *the Danube remains an essential transport link for Europe*. The largest users of this mode of transport are Romania (36%), followed by the FR of Yugoslavia (18%), Ukraine (17%), and Austria (15%).

The role of the Danube was enhanced by the recent construction, costing several billion euros, of the Rhine-Main-Danube canal, which offers a shipping link from the Black Sea at the port of

Constanta all the way to the North Sea at the port of Rotterdam through Romania/Bulgaria, Serbia, Hungary, Austria, Germany, and the Netherlands.

Over the years, much of the Western European and SEE industry has developed along its banks - steel mills, oil refineries, cement plants, and petrochemical installations - because the cost of shipping by barge is only one third to one half that of transporting by road or rail. Also, many bulky materials such as sand and cement are only competitive if they move by barge.

In April 1999, the destruction of key bridges during the Kosovo conflict severed navigation on the Danube from Novi Sad to Pancevo in Serbia. This is a key element affecting the transport links of the region as well as transit traffic.

Airports

There is an extensive air route network in the region including international airports in each country. Aircraft movements in the region declined strongly in countries like Bulgaria and Romania after the economic upheaval earlier in the decade, when traditional traffic routes to former Comecon countries collapsed in importance, and heavily subsidised regional traffic shrunk to insignificant levels. The conflicts in former Yugoslavia also led to strong decreases. For instance, passengers at Zagreb airport decreased from 650,000 in 1991 to less than half in the following year. Sanctions against the FR of Yugoslavia also led to heavy decreases in air traffic.

By the mid-90s, as shown in **Table 3**, traffic had generally stabilised in the region and is now increasing again. 5-6 million passengers and 116-125,000 aircraft movements were registered in 1995-1996 in the region's capital city airports. By comparison with traffic in the rest of Europe (some 325 million passengers handled at 13 of Europe's busiest airports, some 130,000 aircraft movements p.a. at Athens airport alone), the traffic is still low.

Table 3 : International Airports in South-Eastern Europe

Country	Airport	Passengers (thousand) (1)		Aircraft Movements (thousand) (1)	
		1995	1996	1995	1996
Albania	***Tirana***	158	n.a.	n.a.	n.a.
Bosnia & Herzegovina	***Sarajevo***	n.a.	n.a.	n.a.	n.a.
Croatia	***Zagreb***	903	1009	21.3	23.8
FR of Yugoslavia	***Belgrade***	976	1191	16.3	17.9
FYR of Macedonia	***Skopje***	625	528	12.6	11.3
Bulgaria	***Sofia***	1213	1096	22.3	21.4
Romania	***Bucharest***	1623	2100	42.4	49.4
Total		5498	5924	114.9	123.8

(1) Commercial traffic
Source: ACI

The region plays a significant role in terms of overflights along routes to the Middle East and beyond, the most economical routes often once again passing over the FR of Yugoslavia. The tightening of sanctions and open conflicts severely disrupted this pattern, causing economic and financial costs in terms of airways congestion and increased fuel consumption as routes passing via Italy and Greece or via Hungary and Romania were used.

Regarding investments, Air Traffic Control (ATC) systems are thus of high priority from a European point of view. In the wake of reforms in Eastern Europe and the intensification of air communications across the continent, the issue of adapting the ATC systems in the region to the new requirements became acute. As a first step toward the modernisation of air traffic control in Eastern Europe, EIB/PHARE sponsored studies of the existing ATC situation and upgrading needs in East European countries, including Bulgaria and Romania, were undertaken by the International Civil Aviation Organisation (ICAO). In defining the individual ATC requirements for each country, a key consideration was the application of standards as defined by ICAO and the European Organisation for the Safety of Air Navigation (Eurocontrol) in order to ensure the harmonious integration of the country systems into the European airspace. This effort, the key aim of which is to improve traffic flow management at a European level, is formally the objective of the European Air Traffic Control Harmonisation and Integration Programme (EATCHIP), carried out in the framework of the European Civil Aviation Conference (ECAC), of which the East European countries are members. Bulgaria, Croatia, the FYR of Macedonia and Romania are by now full members of Eurocontrol.

Radar route coverage required at high traffic densities is not uniform. The current practices of air traffic control reflect the relatively low traffic densities on certain routes, while primary and secondary radar coverage already exists on other routes, particularly used by long-haul overflights. There is no complete coverage of airways by VOR/DME (radio beacons). At international hand-over points, ATC is procedural, i.e. based on voice operations. Regarding instrument landing systems (ILS), facilities are generally ILS categories I or II. Much of the communication and navigation equipment is ageing and in need of replacement. There is thus considerable scope for improving regional air traffic control.

Basic airport infrastructure modernisation needs to be carried out on the basis of safety-related considerations (runway, equipment). The split of the region into smaller countries has of course had the effect of reducing the possibilities of operating hub and spoke systems, thus causing a deterioration of airport economic and financial perspectives. Thus very few airports in the region reach the threshold of some 1.5 million passengers p.a. required to make such an operation self-financing. State support therefore remains essential, while, in the interests of more efficient management, the operational responsibilities ought to be taken by autonomous bodies unencumbered by state hierarchies. Upgrading of passenger facilities needs to be selected after demand analysis.

2.2 Institutional Issues

Sector Management

In view of the large improvement needs in the transport sector, public institutions have a key role to play. This includes planning and programming network rehabilitation and development, organising and supervising project implementation, and generally operating and maintaining the infrastructure. Public institutions also need either to set up an adequate framework for the

efficient use of the infrastructure by public or private operators, or, in the general case of railways, carry out themselves the transport activities. There is a need for an adequate legislation, properly organised institutions, and a competent, well-trained staff in order to allow the efficient management of the sector. Considerable efforts remain to be undertaken in all these aspects, particularly regarding railway institutions. An important element will also be the gradual adjustment towards the EU policies, regulations and standards, within the process of the "acquis communautaire" (Community legacy).

In several countries, project implementation is often substantially delayed by the lack of an appropriate land-expropriation mechanism and the related adequate compensation of owners. Efforts to involve the private sector in project financing and operations are also hampered by the absence of a transparent and reliable legal framework, which constitutes an essential pre-condition to attract serious interest from potential private promoters. Pending this framework, competition is insufficient and the expensive risk premium charged by tenderers makes this type of financing unattractive.

The return on public infrastructure investments depends crucially on sound macroeconomic policies, and structural and sector reforms, enabling the transport operators to make the best use of such investments. The activities of the transport and logistic services companies within the region are still hampered by the rigid sector regulations and their dependence on direct or indirect subsidies, resulting in limited international competitiveness. An adequate administrative framework is thus needed. There is also a need to encourage private investments and improve access to the EU markets. The importance of reforms to facilitate mobility and trade cannot be over-emphasised. Such measures must be supported by strong institutions able to enforce a transparent regulatory framework.

International borders can be an obstacle to trade and integration if they are associated with long and costly procedures when crossing the borders. The use of transit corridors may also be hampered by restrictive transit controls. These obstacles can only be removed by reaching international agreements on border crossing processes, the establishment of the necessary infrastructure at border transit points and the implementation of supportive and efficient customs administrations.

Public - Private Co-operation

Deficiencies in the transport infrastructure are generally severe in the Balkans, where under-funding over at least the last decade has created an enormous need for investments. The necessity to improve and develop a modern transport system with associated funding requirements gives an opening for the intervention of the private sector, regarding both its technical expertise and its ability to provide finance. On the other hand, Governments and their administrations have an equally important role in giving strategic guidance and providing the correct context for development.

How can the potential of the private sector, with its driving motive for profits, be best harnessed to the less flexible and resources-starved public sector to provide the most appropriate and durable transport system? A key contribution that the private sector can make is in the provision of infrastructure. This includes a wide spectrum of activities ranging from planning to design, construction, operations and maintenance. Lack of funds is often a constraint, and this is not only a problem for the major costs incurred in the construction phase, but also for the earlier feasibility and preparatory phases. One key issue is how to establish the

correct balance between control and regulation (by the authorities), and encouragement of innovation and best practice (by the private actors) without the risk of either excessive costs or inadequate quality being achieved. For example, a shift may be justified from the traditional consultant's design and contractor's construction to a design-and-construct approach for certain works (notably unusual structures or works in difficult contexts), as the latter may accrue significant advantages in terms of construction efficiency.

At the other end of the spectrum, the private sector could take full responsibility for the conception, design, construction, operation, management and complete funding of a transport facility over a number of years before returning the assets in good state to the public authorities. This "pure" non-recourse project finance case relies on the direct users paying entirely for the service through tolls or fares. *Regarding road projects, experience has shown that success in this situation is rather rare and depends on a strong revenue stream with high traffic levels and acceptability to pay, matched by an appropriate level of investment* (successful examples are bridge or tunnel crossings where the user benefits are very large).

Thus most road projects cannot be fully supported financially through user tolls providing the entire revenue to service the needs of private investors. A modest financial return does not mean that the project is not worth doing, just that the tolls which users are prepared or able to pay do not cover the full costs (including risk provision, profit margin, financing charges, etc.). However, the economic rate of return (which generally substantially exceeds the financial rate of return) could well show that the project is of high priority and justifies some public support, particularly in the wider developmental and regional interest.

Inducements may thus well be required from the public sector to make the operation interesting for the private sector. This leads to hybrid schemes, with public authorities combining their resources with those of the private sector in a variety of ways in order to implement justified and worthwhile projects. These can take many forms such as subsidies, grants, guarantees, tax breaks and allocation of existing assets.

The equitable and rational treatment of risk is crucial. The private sector can be expected to manage certain risks (e.g. construction-based), while others would need to be shared and a further category outside its control would be deemed unreasonable (and if insisted upon would carry a heavy premium). Risk definition, allocation and sharing is probably the key element when the public and private participants interface.

In the road sector, the idea that the traffic flow should be a private sector risk is often assumed. Future long-term traffic flows are notoriously difficult to predict, particularly in the context of the SEE economies just emerging from fundamental changes and adaptation to totally new market conditions. In most cases where there is no traffic congestion, traffic levels are influenced only in a minor way by the road's quality and alignment (those aspects under the control of the designer and contractor, i.e. the private sector participants), and much more directly by the local and regional development and the general prosperity, all of which are not under the influence of the private participants. The weight to be placed on traffic flows and toll collection as a performance criterion may need to be tempered by other criteria more under the control of the private investors (or by the use of more secure parameters such as "guaranteed" traffic and "shadow" tolls) to provide an equitable risk sharing in the wider interest of a project.

The maintenance problem

In many countries of the region, the dilapidated state of the infrastructure is more a consequence of lack of periodic and routine maintenance over past decades, than war damages (although in some regions such as Bosnia and Herzegovina and the FR of Yugoslavia, the latter are considerable, and compound the problem).

The maintenance of the existing capital thus takes on a dramatic importance and careful balance with investment in new facilities becomes a crucial issue.

As an example, the issue of road maintenance can be considered. **Table 4** shows the required theoretical budgets for road maintenance, i.e. what would roughly be necessary annually to maintain the main network in the region, and compares this with the actual maintenance budgets that have been made available.

Table 4 : Road Maintenance in South-Eastern Europe

Country	Estimated required road maintenance expenditure (1) M EUR	Percent of present Government Budget	Actual expenditure on road maintenance (2) M EUR	Percent of present Government Budget
Albania	100	15%	6	0.8%
Bosnia & Herzegovina	120	7%	0	0.0%
Croatia	270	3%	74	0.8%
FR of Yugoslavia	280	4%	191	2.5%
FYR of Macedonia	50	4%	13	1.0%
Bulgaria	180	4%	30	0.7%
Romania	800	6%	48	0.3%
Total	1800	4%	362	0.8%

(1) Based on an estimated 2% p.a. of new construction cost put at 3 M EUR/km for motorways, 1 M EUR/km for primary roads, and 0.5 M EUR/km for secondary roads

(2) Last available year, source IRF 1993-97 and national sources

Source: National

It should be noted that these estimates are for normal circumstances, when regular maintenance is applied every year, which does not prevail in most of the countries concerned. The gap between what would be required is large in nearly all cases, showing that most countries in the region spend wholly inadequate amounts on basic road maintenance. If this state of affairs persists over several years, an accelerating run-down of the existing capital stock is the consequence. While an average of 4% of the existing government budget would be required to maintain the primary and secondary networks in an adequate state, in actual fact less than 1% is spent. Only the FR of Yugoslavia spends a reasonable proportion, but the situation has probably been dramatically altered by the recent conflict.

The issue of funding maintenance is equally pressing in the other transport infrastructure subsectors, such as the railways. The steady deterioration of the existing capital assets, for example the permanent way, through lack of maintenance leads to the requirement of complete replacement, resulting in a more costly lifetime expenditure cycle. Furthermore, as long as maintenance of existing capital is seriously deficient, investments in new capacities become more and more questionable, being harder to justify in economic terms vis-à-vis maintenance activity.

The maintenance issue is thus one, which needs to be specifically addressed both from a sectoral point of view and as regards the implementation of new investments. The private sector is already playing a considerable role in becoming entrusted with maintenance operations, and this is likely to develop further in the future.

The productivity gap

In many Balkan economies, lack of competition, overstaffing, and insufficient modern working practices have led to a growing productivity gap between what can be obtained from infrastructure systems under tight management and what actual output is obtained. This is particularly true for railway companies, telephone operators, or electricity and water utilities. Modern management leading to increased output and reduced staffing levels need to be introduced.

This phenomenon is particularly striking in the railways, as illustrated in **Table 5** showing selected productivities of East European railway systems. It is apparent that, on standard productivity measures such as traffic units per staff and freight wagon productivity, the South-East European railways fare poorly.

Table 5 : Selected productivity measures for some European railway systems

	Data Year	Average Journey (km)	Average Haul (km)	Employee per route-km	Traffic-units per staff (000)	Traffic density TU per route-km (000)	Passenger car productivity pass-km per car (000)	Productivity tonne-km per wagon (000)
Albania	1993	56	108	7.8	53	411	121	25.4
Bosnia & Herzeg.	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Bulgaria	1995	80	261	14.3	233	3,340	1,511	221.5
Croatia	1996	59	155	8.9	125	1,107	157	429.3
FYR of M.	1996	77	151	6.2	90	561	387	111.5
FR of Y.	1993	93	235	10.6	114	1,209	20,320	106.8
Romania	1996	86	231	12.1	310	3,739	13,477	173.0
Hungary	1995	50	176	9.2	203	1,861	15,896	209.9
Poland	1995	55	309	10.0	371	3,717	2,726	710.8
Slovenia	1993	45	190	10.0	236	2,355	5,009	259.4
Belgium	1996	48	127	12.2	342	4,157	11,201	499.8

Source: UIC/EIB

Cost recovery

Closely linked to the challenge of securing adequate maintenance of existing capital is the issue of cost recovery and user charges. The extent to which such policies can be implemented varies according to the subsectors. Although most motorways in the region are subject to tolls, their level is relatively low and certainly insufficient to recover construction costs. Nevertheless, the setting up of road funds, as has been done in the FYR of Macedonia, has beneficial effects in terms of ear-marking sources of revenue from the road sector for the purposes of financing maintenance and construction.

The restructuring of utilities such as railway or public transport providers in the form of more autonomous corporate organisations is likely to be an important element in the promotion of cost recovery practices and the reduction of subsidies. The basic purpose is to give such utilities the chance to gain an increasing degree of independence from the state. An important short-term tool is the possibility of proceeding with tariff adjustments to increase revenues and profitability. Aiming to increase internal financing of infrastructure investment, this strategy would be similar to that being encouraged by the rest of the business sector.

It is thus apparent that cost recovery is intimately linked with the institutional structure of the subsector. For cost recovery to be taken seriously as a management objective, there needs to be in place a management which has both the freedom of action and the responsibility of taking the consequences of misguided decisions. In this matter, the relationship between an entity and the state authorities overseeing a subsector is crucial. Clear guidelines need to be set when there is a case for government to exercise a certain degree of influence or control. The example of the relationship of the railway companies with their governments illustrates this point, and experience in many European countries has shown that, as a first step towards improving management, fully specified contractual arrangements with government can be helpful.

3. THE ENERGY SECTOR

3.1 Energy resources and networks

Introduction

The South-East European region is quite well endowed with energy resources, having coal, a limited amount of petroleum and gas, and considerable hydropower reserves. The SEE countries are nevertheless net energy consumers, with energy imports from outside the region representing approximately 40% of total energy consumption. Both energy production and consumption have fallen during the last decade due to economic changes and the effects of conflict. However, energy consumption in the case of future economic growth is likely to increase, although certain energy-intensive industries may not be fully restarted. Per capita primary energy consumption in the region is about half of that in developed European countries, but consumption per unit of output (gross primary energy intensity) is 2-3 times the OECD-Europe average of some 0.6 toe/USD 1,000, illustrating the wasteful usage of energy in much of the region. Energy prices are generally well below economic levels, and tariff structures often inappropriate. Gas is an important source of energy for industry and heating in most of the region, the primary source being Russian supplies. Romania is able to satisfy its gas demand from domestic production.

As in other regions, the interdependence of energy forms such as electricity, oil, gas and coal is an important factor. For instance, policies on electricity generation will be strongly influenced by the competitive availability of certain primary fuels, which in turn is both a legacy of past investments (such as in coal mining) and of future strategic options (such as new gas pipelines). Rational investment decision making will require careful evaluation of various alternatives.

Electricity

The Balkan electricity sector may be considered as a segregated power system where central planning is carried out separately for each country in the region and power transactions take place on an ad hoc basis depending on the avoided cost and reliability requirements of each power system. Electric generating capacity has grown steadily over the years. Current installed capacity is put at some 40,000 MW of thermal plant (including three nuclear power stations), and some 20,000 MW of hydroelectric plant – see **Table 6**. In Albania, electricity generation originates mainly from hydro power plants, while in Bosnia and Herzegovina a mix of hydro and thermal plants (lignite and local coal) in the same portion is used. Nuclear production in the Balkans has been significant for the case of Bulgaria (some 3,800 MW at Kozloduy), and in Romania (Cernavoda nuclear power plant with 700 MW of CANDU 6 type) has started commercial operation in 1996. There is also a nuclear power plant at Krsko shared between Croatia and Slovenia. There is a reasonably dense high voltage transmission network consisting of 110 kV, 220 kV and 400 kV lines.

Table 6 : Electricity Supply Systems in South-Eastern Europe in 1997

Country	Generating Capacity			Transmission Lines		
	Thermal MW	Hydro MW	Total MW	110 kV km	220 kV km	400 kV(1) km
Albania	213	1447	1660	1210	1100	120
Bosnia & Herzegovina	1317	2674	3991	1640	970	410
Croatia	2667	2984	5651			
FR of Yugoslavia	7966	3813	11779	6450	2200	1500
FYR of Macedonia	1010	393	1403	1588	165.3	256
Bulgaria	11031	2151	13182	8209	2296	1947
Romania	16112	6038	22150	17663	4425	3651
TOTAL	40316	19500	59816	36760	11156	7884

(1) incl. one 750 kV line linking Bulgaria and Romania to each other and to Ukraine

Source: National

During former Yugoslav times, there were regular flows of electric power transiting through the region, synchronised in the framework of a southern branch of the former UCPTE known as the SUDEL agreement. The new countries that have appeared are naturally anxious to reintegrate themselves with the European UCTE[1] systems, Bosnia and Herzegovina being the typical example of a country that has sizeable export capabilities of hydropower and therefore stands to benefit from the reopening of transmission capacities to the appropriate markets. At present, there are no long-term agreements for electric power exchanges among the SEE

[1] UTCE : Union for Co-ordination of Transmission of Electricity, essentially consisting of the West European integrated powergrid; the earlier arrangement included Production, giving rise to UCPTE.

countries due to the autonomous development and self-sufficiency policy, which traditionally characterised the operational systems of their electric utilities.

Average losses in electricity networks are higher than average and the potential for reduction of technical and non-technical losses therefore appears significant. This could be complemented by the improvement of load dispatch facilities.

Experience so far makes it likely that also in the future electricity exchanges among the countries of the region and their neighbours will continue to be performed on a temporary basis for reasons of emergency assistance, coverage of seasonal deficits, and economic system optimisation. Wider-ranging power exchanges, while economically attractive, will require several fundamental changes which, while being actively discussed, remain to be fully studied and agreed upon, as regards implementation pertaining notably to the structure of the electricity supply industries in the various countries and strategic orientations in energy policies.

Apart from pure electricity generation, combined heat and power schemes for district heating and industrial process steam purposes are also considered.

Coal

Coal (mainly lignite) is the main indigenous source of energy supply, even though the reserves are of low quality with high sulphur 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 may need to be closed. Use of indigenous lignite fuel for power generation in the region is made in Bulgaria, Romania and the FR of Yugoslavia, the lignite being extracted from open cast mines. Imported coal is used in small quantities for supplementing the occasionally low heating value of the lignite.

Natural Gas

As regards the gas industry, one of the important constraints is the significant dependence 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 SEE that does not have any natural gas interconnections. Underground gas storage capacity is limited and insufficient to support domestic or regional needs, and requires to be increased.

There is a need to optimise 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.

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 realised 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.

A critical problem in many SEE countries is the poor financial position of the gas operating companies resulting from low tariffs and sharp cost increases, resulting also from past cost underestimations.

Oil

The regional demand for crude oil cannot be satisfied by the region's own oil resources, with sizeable production only in Romania, Croatia, the FR of Yugoslavia and Albania. Also, in spite of the apparently 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 during the first years, there will be considerable modification in the product specifications with a larger demand for high-quality and light-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 SEE, will have a major impact on the future development of the transport infrastructure for crude oil and key products such as gasoline and diesel.

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 transit of crude oil from the Caspian to consumption markets, and in helping to reduce the environmental concerns associated with increased oil shipments through the Bosphorus, although in view of several mutually competitive projects the strategic option remains to be fully investigated.

3.2 Institutional issues

Energy pricing

Prices for energy are a key issue in the region, being generally too low by world market standards. For instance, electricity prices in countries such as Romania and the FR of Yugoslavia still stand at only around EUR 0.02/kWh, with industry tariffs cross-subsidising households. In Bulgaria the situation is slightly better, although, despite recent increases, electricity tariffs are still low. In 1998, they stood close to an average of some EUR 0.03/kWh (of which EUR 0.036/kWh for industry and municipalities, EUR 0.023/kWh for households, and EUR 0.026/kWh for exports), to be compared to typical values of EUR 0.07/kWh for industry and EUR 0.12/kWh for households in the European Union. In certain countries, of which Bulgaria is an example, there are active programmes in place setting a timetable for tariff increases. Thus it is foreseen in Bulgaria that electricity tariffs will rise to some EUR 0.04/kWh by early 2001, and beyond that it is expected that they will more or less gradually converge towards the long run marginal cost, estimated to be around EUR 0.08/kWh in this case. Tariffs for natural gas historically have been less than EUR 0.01/kWh in Bulgaria, Romania and Albania. This compares to an average of about EUR 0.01 to 0.034/kWh in the EU in 1998 for supplies to power plants and households.

Sector structure and regulation

Energy sector institutions are generally still state-owned, vertically-integrated entities. Institutional capacity is often limited, and companies often have weak management and insufficiently productive staff. Energy policies, legislation and standards differ substantially from Western norms and practices. *The SEE countries have embarked on market-oriented reforms but progress has been uneven and, in most cases, fragmentary and inadequate*. In fact, many existing players in the region (public electric utilities, public district heating utilities and national governments, but also small contractors unable to enter into projects featuring private-public partnerships or BOT schemes) see liberalisation as an axe hanging above the sector, rather than a welcome opportunity. Preparation for liberalisation is the justification of many projects, but it often remains difficult or impossible to define robust proposals for various liberalisation scenarios.

In Bulgaria, for instance, an action plan for electricity sector reform has been defined, and a new energy law was adopted by the Parliament in 1999 envisaging the restructuring of the power sector through a staged process of commercialisation, demonopolisation, introduction of market mechanism and privatisation. This reform programme should ultimately put the Bulgarian electricity sector in line with the relevant EU directives (unbundling of generation, transmission and distribution). The law aims at privatising progressively the generation (by plant) and the distribution segments (on a regional basis). The grid will be awarded to the National Transmission and Dispatch Company (Transco), which will remain state-owned and buy initially all the electricity produced in the country (single buyer model). At a later stage, third party access could be introduced as well. However, there remain serious doubts whether such a model is a viable proposition in a narrow market, dominated by a concentrated production structure likely to continue in the future on the basis of strategic government decisions. Thus policy on the nuclear facilities could completely dominate market evolution.

Liberalisation in the oil and oil products sectors is in a sense a more natural development. Largely unregulated markets exist in many Balkan regions, with imports and sales in the hands of smaller private operators, accompanied by an absence of the usual fuel taxes, as in Bosnia and Herzegovina or Kosovo. In attempting a controlled liberalisation, as in the FYR of Macedonia, foreign groups are generally involved, although once again the small size of the local markets makes it difficult to design systems that will ensure an adequate level of competition as long as cross-border relations are in effect tightly regulated.

The path of future energy sector reforms in SEE as a region is thus far from being well-defined. Western models in this respect will be easier to test in some of the larger sub-markets such as Croatia or Romania.

4. THE WATER SECTOR

4.1 System characteristics

The water sector comprises the natural resource and hydrological system, together with the infrastructure and facilities necessary for delivering services to users. The resource and the hydrology (e.g. river basins, catchments, drainage areas, and international rivers) are what lend a national or regional dimension to the sector. The actual infrastructure is usually designed on a

local scale to address local needs, although a project can acquire a national or regional importance for various reasons. Despite its more diffuse nature, *the water sector and its development in terms of infrastructure are a key ingredient of successful economic development policies*. Key objectives are to ensure an adequate quality of life to populations and preserving the environment both for its intrinsic value and the economic benefits of tourism, which is an important resource in the SEE area.

Many water supply enterprises in the region suffer from water shortages and poor water quality. The water utilities themselves are a major source of water pollution due to discharge of untreated wastewater. Existing institutions, legislation, and policies are not equipped to introduce modern principles of water resource management that would ensure cost-effective wastewater collection and treatment methods.

The overall availability of public water and wastewater services is indicated in **Table 7**.

Table 7 : Basic Water Sector Indicators in South-Eastern Europe

	Population 1998 Million	% pop. with public water supply	% pop. connected to sewer	% wastewater collected treated
Albania	3.4	n.a.	n.a.	0
Bosnia & Herzegovina	3.4	70	52	n.a.
Croatia	4.6	84	62	n.a.
Bulgaria	8.3	81	42	42
Romania	22.5	58	50	47
FR of Yugoslavia	10.6	76	52[2]	37
FYR of Macedonia	2.0	70	55	n.a.

Source: National

Nearly all the above countries have a public water supply coverage of 70% or more. The striking exception is Romania, a large country with a sizeable and dispersed rural population. Sewerage is available to 40-50% of the population in Bulgaria and Romania. Of the wastewater collected, the proportion subjected to treatment (in the few countries where information is available) falls in the range 35-50%, with the exception of Albania where none is treated. This implies that in all countries, most wastewater is released without adequate treatment. Croatia is an example of a country with good access to drinking water, but a large backlog in wastewater treatment, including inadequate sea outfall systems.

The majority of people have reasonably safe piped supplies of fresh water, though a minority of the population, typically rural, have other arrangements for supply, e.g. wells. The collection of wastewater in public sewers extends to most households in the larger towns and cities, though the condition of the sewer network is often poor. The situation in smaller settlements and in rural areas is more variable, and the use of septic tanks and other forms of individual sanitation is common. Wastewater treatment is generally underdeveloped: In most countries less than half of household wastewater is treated, and in some countries a great deal less than this. Even where WWTPs[3] exist, they are often ineffective because of mechanical problems or a shortage of chemicals and other recurrent supplies. Consequently, surface water pollution from municipal wastewater is widespread.

[2] Serbia only, 1988 est. Kosovo 29%.

[3] Waste Water Treatment Plants

Reliable information on the national situation in each country is very uneven. In Albania, practically all the population of Tirana is connected to public water supply, but until the new (Bovilla) bulk water supply scheme is completed service levels will be very poor, and most people can only expect a few hours of water per day. The sewerage system covers 70% of Tirana's population, but the sewage is released without any treatment. The remaining population uses cesspits, the septage from which is also released untreated into local water courses. The sewers are old, with a high leakage rate, and carry both wastewater and stormwater. They frequently flood into the streets. Outside the capital, the urban population is largely connected to fresh water supplies, and most towns have a sewerage system, but – as in Tirana – there is no wastewater treatment.

In Tirana the responsibility for freshwater and sewerage services is divided between two separate authorities. This weakens the institutional base of the sector and makes it impossible to cross-subsidise wastewater services from freshwater sales. The water tariff was capped until recently, and there is currently no sewerage charge. Only 8% of dwellings are metered. A water tariff regulatory commission has commenced work in June 1998.

In Bulgaria, 81% of the population have access to water from public networks. Water quality is generally good, though there is local contamination by heavy metals and nitrates. The national freshwater resource is reasonably adequate, and both industrial and domestic consumption have been declining for most of the last decade. There is no need for major investments in new water sources, though localised water quality problems need to be rectified. The supply networks are in need of some rehabilitation, since remedial and routine maintenance has been neglected.

The wastewater situation is much less satisfactory. Only 42% of the population is connected to piped sewerage, and only 42% of sewage collected is treated beyond primary levels. Thus less than one-fifth of the population receives nominal wastewater treatment services, and even these are not fully satisfactory. Consequently, most wastewater passes into rivers in a largely untreated state, which is of concern both to national downstream users and to neighbouring countries sharing the Black and Aegean Seas. The construction and upgrading of WWTPs will call for major investment, which in the past has been mainly provided by the government as a non-reimbursable grant to municipalities. Under national laws the cost of new investment has to be recovered from tariffs. Consumers have not yet been confronted with the sizeable increases which this will entail, if, as seems inevitable, a major part of the necessary funds are raised by loans.

Sofia is in the throes of privatising its water system, and other cities such as Varna and Shumen are also preparing for private sector participation. In the rest of the country water is in the hands of municipal undertakings. Although they have a comprehensive clientele, their revenue base has been shrinking with the decline and restructuring of the industrial sector and the reaction of domestic consumers to metering and recent tariff increases. Systems are generally old, with a high level of physical losses. Tariffs are governed by a national policy, requiring full recovery of all eligible costs, including capital charges. However, since nearly all investment so far has been by central government, little capital cost recovery has fallen on local utilities and, hence the average water bill is low (1% or less of average household incomes).

In the Kosovo region of the FR of Yugoslavia, most of the urban population has public water supplies. The five largest schemes serve a total population of 1 million, drawn from surface storage. The smaller systems, covering 200,000 inhabitants, draw water from boreholes and artesian springs. The latter provide good quality water, the former are more variable. Rural water supply is underdeveloped, with most householders using private wells or artesian springs. Well water is generally of poor quality. Most urban areas have wastewater collectors but they tend to be in very poor condition and have not been extended recently to include new buildings. There is no treatment of household wastewater.

To aggravate pre-existing problems, Kosovo's water sector was badly affected by recent hostilities and the subsequent withdrawal of Serbian personnel. Apart from the physical damage, the sector has been left depleted of equipment, supplies, skills and finance.

In Romania, 62% of the population is connected to a piped public supply. This average conceals a sharp disparity between urban areas, where 80% of the population is connected, and rural settlements, where only 20% are in this position. The quality of freshwater is highly variable, particularly in rural areas, where nitrate contamination is widespread.

The freshwater resource is generally adequate. Because industrial and domestic consumption has been declining recently, plenty of water is potentially available, indeed many installations are now oversized. However, the treatment and distribution network is generally old and there is a severe backlog of maintenance and replacement. Symptomatic of this is the heavy unaccounted-for-water level in all networks, much of which is due to physical losses. Even in cities and towns, water supply is unreliable and frequently interrupted. Outside the larger towns, there are localised problems with water quality.

The wastewater situation is more serious. Practically all urban settlements have sewerage, but this accounts for only circa 40% of the population. Most wastewater (75%) collected receives some treatment, though this is usually rudimentary. Just as for freshwater, the wastewater collection and treatment facilities are generally old and in urgent need of repair and major rehabilitation. The WWTPs are almost universally in need of major investment in modernisation and upgrading. In rural areas and villages, there is little sewerage and treatment.

In the past, central government undertook and financed capital investment in this sector. Following recent reforms, responsibility for water, sewerage and wastewater treatment has been delegated to municipal and regional governments, but without a commensurate transfer of financial and human resources. Hence local institutions lack the skills and funds to carry out their new duties. Central government retains the power to approve tariff changes approved by local authorities. Most apartment blocks in Bucharest and the other large cities have meters, but individual apartments do not. There is little metering outside the larger settlements. The poor macroeconomic performance of the country and widespread socio-economic distress is an unpromising background for increased cost recovery from this sector.

The Bucharest water and wastewater system is being privatised under the overall guidance and advice of the IFC. The intention is to offer a private concession for the system as a whole, which would cover the major investment requirements in freshwater treatment, distribution and wastewater treatment.

4.2 Institutional issues

The institutional base of water services is generally weak. Some reforms have been made, and progress registered, in Bulgaria, Croatia, the FYR of Macedonia and Romania, but less progress has been made in Albania and Bosnia and Herzegovina, where systems continue to deteriorate. There are many interrelated aspects to the problem. Most authorities lack autonomy and commercial objectives. They have been delegated service responsibilities, without a commensurate transfer of powers and resources. Many are indebted and insolvent, without the capacity to generate resources for new investment, or even to maintain and repair their existing assets. Systems tend to be old and dilapidated, with a high rate of losses.

Weak institutions

In some countries there has been a move to decentralise powers and responsibilities but without an equivalent delegation of funds and human resources. As a result, many water authorities are unequal to their new tasks. In some countries legal and institutional reforms are incomplete, or the new structures are untried. Under-funding is a universal problem, leading to a deficit in spending on maintenance and repair of ageing assets. Commercialising water authorities is an urgent need, whether or not the further step of privatisation is involved. Project management and implementation may need to be set up in some countries, supported either from grant funds or from eventual loans. Adequate studies tend to be in short supply. There is growing interest in privatisation, though few actual cases, and little experience of regulation and monitoring. There is a great need for help in institutional reform and strengthening, through studies and technical assistance.

Financial viability, cost recovery & affordability

One symptom of institutional weakness is the poor financial state of most water utilities in the region. A vicious circle is at work, involving falling water consumption, higher unit costs, rises in tariffs, and consumer reaction. The closure and restructuring of heavy industry, formerly a major water user, has eroded the consumer base. Another factor is the recent introduction of household metering and increases in water charges in several countries, which have triggered a reaction from consumers. The decline in the revenues of water undertakings aggravate the problem of covering overheads and finding funds for essential maintenance and modernisation.

The majority of countries have a policy of cost recovery through tariffs, and metering is quite widespread in towns, though it tends to be applied collectively in apartment blocks, which reduces the impact on individual households. However, average tariffs are very low, partly because the wastewater element is very minor, but more importantly because in the past the cost of investment was met by central government, hence very few tariffs contain a realistic element for depreciation. In most countries municipalities are now expected to raise some or all of the funds for modernisation and recover costs through tariff increases. Affordability is a universal issue: current water bills account for 1% or less of average household incomes, whereas full cost recovery on a rehabilitation project would commonly take this to 3% or more, the range where the issue becomes a sensitive one. In most countries the prices of other basic items (food, transport, rents, and power) are being liberalised, hence water tariffs cannot be viewed in isolation. Moreover, many family incomes are under pressure from job restructuring, unemployment and the weakening of previous social security systems.

Operational and planning problems

Systems tend to be over-designed and in poor condition, partly a legacy of Soviet-style planning and construction, and partly due to the use of low quality materials and equipment. The backlog of maintenance and periodic repair results in a high rate of leakage and malfunctions, which cause service problems and raise recurrent costs. The accurate measurement of water production, flows and consumption is poor in most systems. This often results in inflated estimates of per capita consumption, which is then used as the basis of exaggerated design standards for future systems. Typically up to half of all water entering public systems is unmetered and "unaccounted for", partly going into civic use and public institutions, and partly disappearing in physical and "commercial" losses (illegal connections, defective meters. fraud, etc).

5. THE TELECOMMUNICATIONS SECTOR

5.1 Performance of the sector

Fixed networks

Telecommunications are an essential element in the infrastructure of modern economies and are crucial in the development of both national and international trade.

Traditional fixed networks exist throughout the region. These can potentially provide modern services including high speed data and internet access. The recent conflicts have destroyed some key elements such as long distance microwaves routes. The switching equipment in some areas is old and based on obsolete technologies.

There is a wide discrepancy of fixed telecommunications line densities, ranging from high (Croatia, Bulgaria, above 30%), medium (the FR of Yugoslavia, the FRY of Macedonia, Romania, Bosnia and Herzegovina, all 10-25%) to low (Albania, 2%) (see **Table 8**). Bosnia and Herzegovina, in particular, saw a sharp decline in the numbers of lines between 1993 and 1995 due to war damage. However numbers of lines can be misleading as indicators: the data give no indication of service quality, figures sometimes includes party lines, and lines may currently serve economically sub-optimal users while new businesses remain unserved. It is possible that Kosovo has penetration somewhere between the FR of Yugoslavia and Albania. 'Penetration' must be seen as only a basic indicator, since sometimes several households share a single main line (Bulgaria), and concentration of lines in urban areas mean rural populations have poor accessibility to telecommunications services.

Table 8 : Telecommunications Systems in South-Eastern Europe

Country	Population 1998	Telephone Lines 1998			
		Fixed lines	Fixed density lines/	Mobile lines	Total density lines/
	Million	thousand	100 inhab.	thousand	100 inhab.
Albania	3.4	118	3.5	6	3.7
Bosnia & Herzegovina	3.4	337	9.9	26	10.7
Croatia	4.6	1594	34.9	213	39.5
FR of Yugoslavia	10.6	2190	20.7	216	22.7
FYR of Macedonia	2.0	453	22.7	35	24.4
Bulgaria	8.3	2715	32.9	131	34.5
Romania	22.5	4513	20.0	720	23.2
Total	54.7	11920	21.8	1346	24.3

Source: ITU, national statistics, EIB estimates

Mobile networks

All countries have digital GSM networks, with some in addition retaining parallel analogue networks. Development of mobile networks broadly reflects that of fixed, with the highest penetration in Croatia (5 percent), medium levels in Romania, the FYR of Macedonia, the FR of Yugoslavia and Bulgaria, and almost no usage in Bosnia and Herzegovina and Albania. Take-up continues to be rapid, but is variable: in 1999 Bulgaria and Bosnia and Herzegovina have continued to show annualised growth rates of more than 100%, while growth in Romania has slowed from 100% in 1998 to 60% in 1999. Mobile networks may be partly compensating for continued underdevelopment of fixed networks or for war damage in countries such as Bosnia and Herzegovina or Serbia, but appear to be more complementary to wider economic development in other countries such as Romania. This would be in line with experience elsewhere, where mobile capacity often permits rapid access to telecommunications for new business activities. Factors affecting the rate of development are linked to the availability of investment funds and the number of users who can afford a service priced at market levels. Although costs of GSM equipment are falling, average recurring revenue per subscriber (ARPU) will typically need to be around EUR 360-600 per year to support a network - a large percentage of the average GDP per capita in these countries. As a result, mobile adopters have to be amongst the highest income members of the population, and the more developed the economy, the larger the potential pool of users. Such systems are already integrated into the global telecommunications network and GSM users can have full access to all other users. Restrictions may be placed on full access either by the wishes of the network operator or by failure between operators to negotiate interconnection agreements. Commercial considerations usually play the major role in determining the degree of access possible. Other issues involve the allocation of the subscriber number and access codes. Such matters are often decided by national regulators who are not fully independent from the Government in some SEE countries.

5.2 Institutional issues

Unclear institutional and regulatory structure slowing transition

The telecommunications sector shows a diversity of institutional frameworks, ranging from those preparing for accession to the EU in the short- to medium-term, via those beginning the process, to those like the FR of Yugoslavia where the process has not yet begun. Political influence remains significant in some countries in determining both initial entry conditions for new operators and ongoing operating framework. While the 'acquis communautaire' provides a roadmap for most countries, its rate of adoption varies. Where it has been adopted, the lack of experience with putting in place wider legal and administrative infrastructure can create gaps between the '*de jure*' legal position and the practical position of potential new entrants. In particular, it is expected that the concept of independent regulation will take time to be separated from the former national incumbent.

Significant practical problems may remain in adapting the sector for liberalisation, not least the need for the incumbent operator to prepare for competition. This transition is complicated by the low levels of provision in many countries which will require moves to increase accessibility at the same time as tariffs are rebalanced to match charges more closely to costs.

As in the EU, Governments face a conflict in the early stages of liberalisation between maximising receipts from privatisation of incumbents and rights to offer mobile services and encouraging competition. This has led to long transition periods in some countries, potentially delaying the entry of new operators with competitive services.

Low and uneven telecommunications provision

Levels of telecommunication provision vary widely between countries. Bosnia and Herzegovina, and the FR of Yugoslavia, have seen significant declines in numbers of lines in service as a result of war damage. Provision is also unevenly distributed geographically, with most lines concentrated in urban areas. This creates accessibility issues in many unserved rural areas, as lack of telecommunications infrastructure make it increasingly difficult to integrate with wider national and international markets. Provision may also not always have adjusted to economic demand: new businesses may have difficulty obtaining service, while many lines serve low revenue households or businesses in the 'old' economy. There are also wide variations in the quality and condition of equipment, with significant maintenance backlogs in part of the network. Some areas can benefit from relatively high capacity and quality equipment installed within the last few years, but many areas retain older equipment unable to offer the capacity and quality required for newer data services.

Mobile telecommunications appear to be complementary to, rather than competitive with, fixed networks, and take-up directly reflects wider economic success. GSM permits rapid access to telecommunications for new business activities where this cannot be obtained quickly from the incumbent. However, mass-market development will inevitably reflect the number of users who can afford a service priced at market levels.

Inadequate revenue base to meet investment needs

Revenues per line are low across the region with the exception of Croatia, reflecting a combination of highly unbalanced tariffs and poor collection. Historically high charges for

long-distance and international calls have been used to cross-subsidise local calls. Local call charges are below long run incremental costs in most countries and many residential lines (which make mainly local calls) are cross-subsidised by business users making longer distance calls. This creates powerful political pressures against tariff rebalancing. Where tariff rebalancing occurs, fixed charges and local call costs tend to rise, making telecommunications less accessible to lower income groups and so potentially running counter to objectives of increasing accessibility of telecommunications to lower income groups.

Attempts at tariff rebalancing maybe made more difficult by wider fiscal difficulties. The real value of tariffs will fall rapidly in countries suffering from high inflation, while many costs remain linked to international rather than domestic prices. Especially where price increases have to be approved by Government, high inflation and falling exchange rates can wipe out the impact of price rises in a short period. Romanian and Bulgarian local tariffs have fallen significantly in USD terms as a result of inflation, although Croatia seems to have made some progress.

Low, unbalanced tariffs subject to political pressure have two main effects: they reduce telecommunications investments, and they diminish the attractiveness of the sector for new operators where permitted. As a result, *telecommunications investment in the region has generally remained below the levels required to maintain and expand the network*. This situation also seriously threatens moves to general broad band services and consequently slows the introduction of internet-based technologies.

With the exception of Croatia, investment in fixed networks appears to have been extremely low relative to GDP (while it may be high relative to collected revenues), although the position seems to have stabilised and may be improving in most countries. A history of low investment means that even high teledensities may conceal a significant backlog of poor quality equipment. Taken with a possible collection problem, operators may face considerable cashflow difficulties (note that Bosnia and Herzegovina, the FYR of Macedonia and the FR of Yugoslavia do not report/collect significant amounts of revenue).

Data from mobile networks is also shown in **Table 8**. All countries now have digital GSM networks with some in addition retaining parallel analogue NMT. GSM networks have experienced less difficulty in attracting funding both because there are fewer constraints on pricing and because they are currently primarily investing to meet new demand, rather than maintaining an existing network.

PART II – REGIONAL PROGRAMMES AND PROJECTS

1. INTRODUCTION

1.1 General objectives

In the context of the EIB's role in the elaboration and co-ordination of investment programmes for basic infrastructure projects in the region, the Bank was mandated to co-ordinate the sector review process and develop and assess projects in infrastructure by gathering proposals and identifying, in collaboration with other International Financial Institutions, priority projects at a regional level.

In this process, the EIB collected and discussed basic infrastructure projects with the countries of the region during field visits and through contacts via the Stability Pact Working Table II. The focus was on the transport, energy, water and telecommunications sectors. In order to sift through the many proposals received and assist in the preparation of regional operational programmes for investment in basic infrastructure, the Bank organised a series of technical meetings with representatives of the EC, the EBRD, and the World Bank to discuss the different issues related to basic infrastructure projects, and in particular to:

- ***Elaborate criteria on which to assess basic infrastructure projects in order to ensure that they are technically, economically, environmentally and financially viable, and consistent with regional economic development objectives.***

- ***Exchange information between the International Financial Institutions on the status of the respective operational project pipelines, especially as regards the opportunities for co-financing.***

- ***Review the project lists supplied by the countries concerned through the Stability Pact and devise an appropriate response as foreseen in the procedures of the Stability Pact Working Table II.***

- ***Exchange views on suitable ways of approaching the issue of an appropriate sector framework, essential for sound project development, and on the derived conditionality recommended for building into project work.***

One of the purposes of this exercise was to establish a tentative list of projects for short-and medium-term implementation. The inputs to such a programme of projects originated from two sources: (i) the submissions by beneficiary countries of regional and national projects that they consider of priority in order to foster the Stability Pact; and (ii) the information provided by the European Commission and the other International Financial Institutions (the World Bank and the European Bank for Reconstruction and Development), and collected by the European Investment Bank, regarding projects for which an approach has been made or for which a review and sometimes preparations have already started. This produced a total of close to 140 distinct projects for an estimated investment cost of about EUR 11 billion, clearly ambitious for the implementing capacities of recipient countries. This list has been divided into three groups:

The first group, called **Quick-Start Projects**, includes those projects for which implementation is scheduled to start, or at least a tender is likely to be awarded, in the next twelve months, that is by 31 March 2001.

The second group, called **Near-Term Projects,** covers those projects for which:

- (i) there seems to be an obvious need and hence clear priority and apparently satisfactory economic and technical justification; and

- (ii) there appear to be no unusual difficulties as regards project implementation and operation.

These projects may be at a very early or more advanced stage of preparation, and thus their implementation will not start in the coming twelve months, but their preparation should be accelerated and potential donors sought.

The third group, called **Medium-Term Projects,** includes the other projects, for which more identification work remains to be carried out and/or some general issues need to be resolved before active preparation can be launched. These projects:

- either belong to a sector where drastic reforms are mandatory before the sustainability of projects can be ensured;
- or are competing projects for which regional studies still need to be carried out in order to make a rational selection (this is the case for some international power transmission lines, and major road and railway links);
- or are linked to broader international projects of still uncertain future (oil or gas pipelines for example);
- or present specific issues to be resolved first (i.e. alignment, procurement, etc.).

After discussion, it has also been decided to exclude those projects which are either ambitious programmes for which a proper justification and implementation into distinct phases remains to be established (an example is the Adriatic Highway), or raise critical issues which can only be solved in the light of comprehensive regional studies (this is the case of electricity generation projects).

The concept of "project" is to be taken in the broad sense of also encompassing preparatory and study-type activities, which could concern both a specific investment or cover a range of issues, particularly from a regional perspective. In order to help define phased construction for some projects and establish priorities in particular sectors, some IFIs are proposing the carrying out of several project identification studies for which grant financing is envisaged.

1.2 Project selection criteria

The various approaches put forward at discussions among experts at the International Financial Institutions showed a large measure of consensus on the content and substance of criteria deemed suitable for the screening and selection of regional infrastructure investment projects. It should be noted that the activities and projects to be screened refer to additional or new items, rather than to activities or projects already financed and well under way or even completed. As detailed below, four major categories of criteria were identified.

Project Criteria

These relate to the actual project and its immediate environment.
They may be subdivided into criteria related to:

- ***Project maturity – availability and quality of information, availability of feasibility studies, availability of a financing plan, readiness of a promoter to proceed.***
- ***Standard criteria used by the IFIs related to the technical, economic, institutional, environmental and financial feasibility of projects.***

Sector Criteria

These relate to the sector environment in which the project is to be inserted, and the degree to which certain reforms must be accomplished in order for the project to have a reasonable chance of succeeding. They relate to areas such as:

- ***The institutional framework.***
- ***The regulatory and competitive framework.***
- ***The price incentive framework.***
- ***Priority within the sector.***
- ***Sectoral reform.***

Country Criteria

These relate to the overall economic development strategy of the country. They are basically:

- ***Priority of the sector.***
- ***Macroeconomic impact.***
- ***Compatibility with macroeconomic guidelines.***

Regional Criteria

These cover the specific aspects giving the projects concerned a regional dimension, such as:

- ***Involvement of, and effects on, two or more countries.***
- ***Contribution to enhanced regional trade, and communication.***
- ***Advancement of integration of the area with Europe as a whole, or the EU pre-accession processes ("common interest").***
- ***High demonstration value from a regional perspective of several countries.***

An attempt to summarise the way some of these criteria might be applied using a matrix form is shown in **Table 9**. Possible distinguishing elements are based on whether a project is either fully regional, or concerns two or more countries, or is essentially of national character but has certain features that characterise it as having a broader regional significance. Another crucial factor is the time horizon of a project, and the stage, which the project cycle has reached. Depending on the situation, different actions need to be envisaged, such as, for already prepared projects meeting feasibility criteria, a move toward implementation, or, in other cases, the launching of the required initial investigative or preparatory studies. It should be pointed out that a set of criteria need not constitute a rigid framework, but should rather form the basis for a *pragmatic approach* by the institutions called upon to prepare, finance and implement projects, in which decisions are reached by mutual understanding and consensus. The possible application of previously defined criteria, such as those included in the procedure for selecting transport projects in the TINA framework (see 2.1 below), is also a possibility, that is specifically envisaged as one of the proposed regional studies.

Table 9: SELECTION CRITERIA MATRIX FOR REGIONAL INFRASTRUCTURE PORJECTS IN SOUTH-EASTERN EUROPE

	Regionally Joint Project	**Multi-country project**	**National/Bilateral project with regional impact**
Agreement among SEE countries, most concerned	On location, ownership, project implementation, operation	On co-operation, mutual control of supervision, peer pressure	Commitment of the project government to share information with other countries in the region
Sectoral policy / institutional reforms	The project fits into the national sectoral policy acceptable to IFIs		
	• Introduction of European/ international standards • Economies of scale	• Regional and European legal harmonisation • Efficiency improvement • Synergy effect	• Ambitious sector restructuring/policy reforms to be set as an example to others • Pilot character • Efficiency increase • European/international standards • European integration: EU compatible institutions
Emergency character			
Bankability criteria	•Financially, economically justified •Environment and social assessment •Readiness for implementation		
IFI focus:			
World Bank	Poverty reduction and economic development		
EIB, EU	European integration		
EBRD	Transition		
Other	Project conditions on a case by case basis		
	• At least 2 countries • Joint investment	• At least 3 countries • Synergy from the harmonisation of several national projects	• Sectoral reform with regionally demonstrative impact and/or part of a regional/Trans-European network

Source: World Bank

2. REGIONAL TRANSPORT PROJECTS

2.1 Context for Projects

Current IFI involvement

All of the international financial institutions have financed a significant number of transport projects in the region. Loans from the European Investment Bank and the World Bank to the transport sector in former Yugoslavia date back to over three decades, and covered in particular the main transport axis running from the north-west to the south-east along what is now known as Corridor X as described in the sector review. Loans were given to the road and railway organisations toward construction and rehabilitation of the Trans-Yugoslav Highway and Trans-Yugoslav Railway, to which the EIB contributed some EUR 550 m in the period from 1977 to 1990. This relationship was interrupted by the conflicts in the 1990s and significant parts of the infrastructure was destroyed in the recent war.

During the last decade, transport projects currently under implementation or, in certain cases, recently completed, were financed by the IFIs for a total amount of some EUR 3.1 bn, of which some 1.4 bn was provided by the EIB, as shown in **Table 10**. Most of these loans were provided on a sovereign basis. Many concern co-financed projects, sometimes with bilateral agencies.

Table 10 : Transport Projects under implementation financed by International Financial Institutions

Financing in M EUR	Albania	Bosnia and Herzegovina	Bulgaria	Croatia	FYR of Macedonia	Romania	TOTAL
PHARE(1)	130	38	191		12	142	513
EBRD (2)		31	83	88	22	225	449
EIB(2)	51		381		130	845	1407
World Bank (3)	57	78	92	250	27	270	774
Total	**238**	**147**	**747**	**338**	**191**	**1482**	**3143**

(1) 1990-1997 Includes transport, energy and telcommunications

(2) 1990-1999

(3) Projects currently under implementation

Project Potential for the Region

Transport infrastructure investments are a key element to support economic growth and foster regional integration. However, adequate project selection is not an easy task, particularly in view of the numerous events which have occurred in the last ten years. During this decade, new countries have become independent in the Balkans and new borders drawn, creating new traffic patterns and new national priorities. Meanwhile, the state of the infrastructure has substantially deteriorated because of lack of not only routine and periodic maintenance, but also renewal or replacement of assets reaching the end of their useful economic life. In addition, considerable economic change,

regarding particularly the activity of heavy industries, has taken place. The move towards transport deregulation and increased reliance on market forces has induced a substantial shift from rail to road, compounding the financial problems of the railways. Assessing the overall transport infrastructure needs and the level of investment required, as well as investment priorities in each country, is thus a difficult but an essential task. To cope with this issue, it is proposed to launch a Transport Infrastructure Regional Study (see section below) which would, for the region as a whole, define the most appropriate multi-modal transport network to accompany the economic development in a dynamic regional perspective, while remaining financially manageable and sustainable.

As a consequence of the situation described in the review of the transport sector, there are considerable needs for investment in the region, in terms of both rehabilitation of existing networks and upgrading or new construction. In the road subsector, in particular, such investments are needed in all categories of roads (regional, primary and secondary). In railways, the situation calls for an increased concentration on main lines with sufficient traffic levels. All subsectors need a substantial measure of institutional reform. In the railway subsector, this is likely to be especially complex since it involves downsizing existing labour forces and facilities with painful social side-effects. Progress of countries in the reform process is necessarily different in pace.

In the various countries, there is also a different degree of preparation and planning as regards the national transport networks. Bulgaria and Romania have been incorporated into the EU's Transport Integrated Needs Assessment (TINA) process, which covered pre-accession countries in Central and Eastern Europe. Hence fairly comprehensive estimates of network investments up to the 2015 horizon could be derived for these countries, amounting for the road and railway networks respectively to some EUR 2.3 bn and EUR 2.1 bn for the case of Bulgaria, and to EUR 5.1 bn and EUR 5.2 bn for the case of Romania (see **Table 11**). However, it must be emphasised that these are estimates based on standardised costs rather than on specific technical studies.

Table 11 : Proposed Transport Network Investment by TINA up to 2015

	Population	GDP per cap.	GDP	Rail Network		Road Network		Other Modes	Total Network
	1995, Million	1995, EUR	(1995, M EUR)	km	M EUR	km	M EUR	M EUR	M EUR
Bulgaria	8.4	1,200	10.1	2,095	2,130	2,025	2,263	885	5,278
Cyprus	0.4	10,570	6.8	0	0	425	528	527	1,055
Czech Republic	10.3	3,490	35.9	2,341	3,711	1,842	5,829	662	10,202
Estonia	1.5	1,850	2.8	657	259	1,000	290	79	628
Hungary	10.2	3,340	34.1	2,727	4,030	1,448	4,632	1,504	10,166
Latvia	2.5	1,370	3.4	1,343	942	1,520	376	672	1990
Lithuania	3.7	1,225	4.6	1,100	1,317	1,617	517	488	2,322
Poland	38.6	2,360	91.1	5,529	14,612	4,723	17,550	4,261	36,423
Romania	22.7	1,200	27.2	3,163	5,192	2,524	5,139	880	11,211
Slovak Republic	5.4	2,470	13.3	1,400	1,914	949	4,603	26	6,543
Slovenia	2.0	7,240	14.5	569	3,011	565	2,576	187	5,774
Tina Countries	**105.7**	**2,300**	**243.8**	**20,924**	**37,118**	**18,638**	**44,303**	**10,171**	**91,592**

Source : TINA Secretariat, Vienna

Transport Infrastructure Needs Assessment (TINA)

In its Agenda 2000, the European Commission identified the importance of transport for the pre-accession strategy of the associated countries candidate for European Union (EU) membership. The first Structured Dialogue between the Transport Council of the EU and the Transport Ministers of the associated countries recommended, in September 1995, a Transport Infrastructure Needs Assessment (TINA), consisting of the identification of network components for a future multi-modal Trans-European Transport Network in eleven East-European and Mediterranean countries (Bulgaria, Cyprus, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. The work was carried out by the TINA Secretariat located in Vienna (Austria) and comprising five professionals, assisted by consultants, and supervised by the TINA Senior Officials Group (chaired by the Commission and comprising representatives of all EU Member States and candidate countries) and three regional TINA subgroups (Baltic, Central Europe and South Central Europe). Financing came partly from the PHARE Multi-Country Transport Programme.

TINA was carried out in two stages: first, the definition of the network; second, the identification of investment measures by which the selected network would be brought up to a desired quality level. The work was based on a certain number of assumptions:

- the network should be consistent with criteria laid down in the EU Guidelines for the Development of the TEN's (Trans-European Networks within the EU);
- the technical standards of the future infrastructure should ensure consistency between the capacity of the network components and their expected traffic;
- The time horizon for the completion of the network should be 2015; and
- The cost of the network improvement should be consistent with realistic forecasts of financial resources, so that average outlays should not exceed 1.5% of each country's annual GDP over the period up to 2015.

The selected network comprises two parts: a backbone of ten multi-modal Pan-European Transport corridors, and additional components which complete the network in order to ensure an adequate access to all main centres of economic activity. It totals 20,900 km of railway lines, 18,700 km of roads, 86 trans-shipment terminals, 4,000 km of inland waterways, 58 river ports, 20 maritime ports, and 40 airports. Each interested country defined the network improvements that it considers justified and prepared its related cost estimation, which was compared by the TINA Secretariat with a specific PHARE-financed study on construction unit costs. In fact, construction costs may be lower than those estimated by the countries. The proposed investments total EUR 91 billion, divided into EUR 37 billion for railways, 44 billion for roads, 1.0 billion for trans-shipment terminals, 1.5 billion for inland waterways, 0.3 billion for river ports, 3 billion for maritime ports and 4.5 billion for airports.

In order to achieve the necessary coherence of traffic forecast over the TINA network in the candidate countries, PHARE financed a specific regional traffic study. The first step was to create a data base for current passenger and freight flows, including the origin and destination, and the type of goods (freight) or the purpose of the trip (passengers). Then several scenarios were selected, containing descriptions of socio-economic development, integration process in Central Europe and the improvement of infrastructure. The forecasting techniques used growth models based partly on transport time and cost and partly on the impact of transport market harmonisation within Europe. Freight tonnage's and passenger volumes were converted into flows of cars and trucks (roads) and number of trains (rail), and then assigned to the network. Three growth scenarios were considered (low, moderate and high), as well as three infrastructure development scenarios (existing network, partial network upgrading, and full upgrading). The effect of transport market harmonisation on modal split was also modelled. The results were established for years 2005, 2010 and 2015 and considered the main following thresholds for infrastructure congestion:

- for rail, 80 trains per day (the limit between single-, and double-, track railway lines); and
- for roads 15,000 and 20,000 average daily passengers car equivalent (the limits between two-, three-, and four-, lanes roads respectively).

The TINA network is described in a specific database, the TINA Information System (TIS) specially designed and developed for the TINA process. It uses a Geographic Information System (GIS) and will be utilised by all the accession countries in the future. TIS provides access to a number of services, such as data management, mapping, analysis of a transport link load compared to its capacity, and reporting of results in a large variety of formats.

The conclusions of the assessment are that:

- it should be financially possible to implement the network developments proposed by the countries within the period considered (in fact, the implementation period varies from 7 to 29 years depending upon the country, with an average of 15 years);
- however, the proposed network is not really adapted to traffic requirements: a few sections present insufficient capacity (bottlenecks), while many others seem to provide excess capacity and should not be developed as fast as proposed; and
- it is thus necessary to carry out for each proposed investment a socio-economic cost/benefit analysis in order to refine the screening process and provide the justification generally required by International Financial Institutions.

In order to harmonise this project analysis, TINA has prepared a paper (Socio-Economic Cost Benefit Analysis, October 1999) aimed at providing a modular assessment methodology for publicly funded projects.

Regarding river transport, there is tremendous pressure from European business interests to re-open the Danube to traffic. East European shipping companies, which operate the biggest river fleets and handle most cargoes transported between the Black Sea and central Europe, are hardest hit. Romania has the largest river merchant fleet of riparian states, with a transport capacity of 1.4 million tonnes, three-quarters of which is used for international operations. About 250 Romanian, Bulgarian and Ukrainian vessels are stranded upstream of Novi Sad. Many navigation companies have had to lay off staff and are on the verge of bankruptcy. The Serbian government, after vowing that it would not clear the Danube, or allow the Europeans to do so, until the international community rebuilds every one of the bridges destroyed during the war, seems now oriented towards accepting minimum measures to allow the resumption of traffic. Indeed, during the Extraordinary Session of the Danube Commission on 25 January 2000, a political agreement was reached by the eleven member states of the Danube Commission, including the Federal Republic of Yugoslavia, on a technical project addressing the clearance works only. On the basis of this project, the Danube Commission is expecting a financial contribution for the carrying out of the works from the European Union.

2.2 Regional Programmes/Projects

Regional Studies/Programmes

In this category, three activities are proposed: a study to identify land transport investment priorities on a regional scale based on a process partly similar to TINA; the Trade and Transport Facilitation Project prepared by the World Bank; and an Air Traffic Regional Infrastructure Study.

- ***Transport Infrastructure Regional Study (TIRS) (European Investment Bank)***

This study would, for the region as a whole, define which transport network is appropriate to accompany the economic development in a dynamic regional perspective, while remaining financially manageable and sustainable. It is proposed as a priority activity under management of the European Investment Bank, and would include the following basic tasks:

- Review all recent and on-going transport studies in the region and its periphery;
- Define a primary multimodal network (covering roads, rail, inland waterways, and maritime ports) serving all major activities centres in the region and its periphery,
- Estimate current and long-term (year 2015 horizon) traffic flows on this network based on various economic development assumptions (such as optimistic, realistic and pessimistic);
- Assess the current state of the infrastructure and estimate the nature and costs of the investments required to serve the forecast traffic with an acceptable level of service;
- Make a simple benefit/cost analysis for each individual investment in order to determine its economic interest; and
- Propose for each country an Investment Programme based on the above results but also taking into account the existing financial constraints.

It is recognised that the dominant transport mode has progressively become road transport, and this is expected to remain so for the foreseeable future. Other modes all have an important

contribution to make and should be appropriately encouraged, especially if they provide more economic or less environmentally intrusive solutions. On the axes with the most traffic, the study should pay particular attention to the aspect of traffic assignment between competing modes (such as road and rail), and its potential long-term impact on the environment

One example of the kind of issues to be solved as part of the longer-term planning process is that of the Adriatic-Ionic Highway project. This 1,150 km-long highway would run along the Adriatic coast all the way from Trieste in Italy to Igoumenitsa in Greece through Slovenia (40 km), Croatia (570 km) Bosnia-Herzegovina (30 km), Montenegro (120 km), and Albania (370 km). The terrain is mainly hilly to mountainous and the high density of activities taking place along the coast as well as land scarcity makes it an environmentally difficult and economically costly project (about USD 10 million per km for full motorway standards). Obviously, such a very large scheme requires careful assessment through a specific feasibility study and cautious step by step implementation, and is not suitable for direct inclusion in a package of projects to be started at relatively short notice.

The TIRS would follow the example of the TINA (Transport Infrastructure Needs Assessment) exercise completed for Central Europe in October 1999, although with a somewhat more ambitious objective of designing a long-term network adapted to traffic needs, and it would aim at providing concrete results for prioritising implementation of the required investments. The study's cost is estimated at about EUR 5 million and it should take one and a half years to complete.

- ***Trade and Transport Facilitation in Southeast Europe (TTFSE) Programme (World Bank)***

The Trade and Transport Facilitation in Southeast Europe (TTFSE) Program is a regional programme under preparation by the World Bank and composed of six projects in the following countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, the FYR of Macedonia, and Romania, as well as Turkey which is joining the programme in the framework of an on-going IBRD loan.

The fundamental shifts in trade and traffic patterns in all of Eastern Europe and the conflicts and border issues in SEE have combined to produce new challenges. There are typically long waiting times at border crossings, high costs to trade, smuggling and corruption opportunities, and unreliability and unpredictability of transport services. These problems have prevented local producers from becoming active in cross-border trade. All these deficiencies amount to: (i) bottlenecks to trade, with macro-economic effects similar to those of protectionist trade policies; (ii) a lack of incentives to improve competitiveness; and (iii) constraints on development prospects.

The EU mobilised financial resources to solve the border-crossing problem in the framework of the PHARE cross-border programmes. Its experience highlights that, to ensure smooth border crossing, infrastructure or facilities improvement need to be complemented by the following: (i) improved human resource management of border posts; (ii) service conditions synchronised on both sides of the border; (iii) proper use of existing facilities; (iv) inter-agency and cross border co-operation; (v) introduction of risk analysis and selectivity techniques; and (vi) co-operation between the public sector and the trading and transport community. Therefore, in the project countries, the EU has launched long-term assistance programmes in

the framework of bilateral and multilateral PHARE to accelerate the implementation of the needed customs policy and institutional reforms.

The objectives of the World Bank's programme are to: (i) reduce costs to trade and transport; (ii) reduce smuggling and corruption at border crossings; and (iii) strengthen regional partnerships, and expand regional trade. Its total cost, including physical and price contingencies, is estimated at USD 86 million, of which about 70 percent (about USD 60 million) are estimated foreign costs. IBRD loans of USD 38 million and IDA credits of USD 30 million finance about 79 percent of the estimated total cost of the projects. The Governments would finance the remaining USD 18 million, corresponding to about 21 percent of the estimated total cost.

The World Bank has designed the programme to be compatible and complementary with current EU and donor programmes on cross-border issues. The regional dimension of the programme is reflected in similar loan/credit agreements for each project. In addition, the participating countries have signed a Memorandum of Understanding to facilitate trade and transport operations. The programme is conceived as several roughly simultaneous country operations expected to be implemented over a 3-year period. The borrowers are the governments of each country, and customs agencies are responsible for implementation of each project. International organisations and donors are co-financing, and assisting in the implementation of the projects.

- ***Air Traffic Regional Infrastructure Study (European Investment Bank)***

Several airport investments have been proposed in the region, raising issues of the proposed form of project financing (in particular the way in which proposed concessional schemes can be harmonised with the international bidding requirements of multilateral financing institutions). Also, fundamental issues of planning additional airport infrastructure capacity on a regional scale are raised by the proposed expansion plans, and of the way air traffic control investments should be co-ordinated. To consider these issues, a regional study focusing on the SEE countries appears recommended, and certain international bilateral donors have expressed a provisional interest (NORAD). The main items to be covered by such a study would be the following:

- Long Term Strategy - The likely long term requirements for the whole region in say 10 to 15 years time needs to be understood, when hopefully civil aviation in the area can operate on a near free-market basis. Thus investment in capacity increases should be prudent and tempered by the probable long term needs increase.
- Air Traffic Management - En-route traffic (i.e. overflying traffic) would probably be best served by one, or at most two, en-route control centres with terminal area and approach control linked to the airports. While this could be the long-term strategy for en-route control, it is likely to be some time before the countries of the region will be ready to yield national sovereignty over any of their air space. Given the relatively small size of the countries with modest traffic levels even in the long term, it may be best to link terminal area to approach control and the airport in order to ensure a competent level of management.
- Airports - The resident populations may not be sufficient, even in the long term, at say Pristina, Sarajevo and Tirana to justify much more than peak hour airports such as in the small Baltic countries. These could feed into Belgrade, Zagreb or even Rome. While it is

justifiable to provide international levels of service and safety, excessive capacity is unnecessary and to be avoided. It would seem that at most of these airports the runways are in reasonable order thanks to earlier investments or subsequent repairs for the military. It should be envisaged, as a first step, to make an inventory of each airport's needs both airside and landside, first in terms of meeting international safety and security levels (without an economic justification) and second in terms of providing international levels of service. Particular attention should be paid to the role and mode of private sector participation in the investment process, and airport management should be advised on procurement rules of IFIs related to concessions.

- Project Development - A competent aviation/project management consultant is required to make a preliminary assessment of the stage of institutional development at each of the airports that may interest international financial institutions. There appears to be a reasonable institutional capacity at Skopje, less so at Tirana and rather little at Pristina, so the approach would have to be tailored to the needs of each. The consultant would also have to prepare a programme for defining and developing appropriate projects for each airport and for its terminal area and approach control systems in relation to its level of institutional development.
- Project Implementation - A full-time project manager would be required at each airport to supervise the preparation of the tender documents and the tendering procedure as well as the construction, staff recruitment, training and entry in service.

Priority Package

As a result of the selection process, a total of **53** transport projects were identified, of which **23** belonging to the Quick-Start Package and **30** to the Near-Term Package. Project costs are EUR **1,029** million and EUR **1,689** million respectively. The main sub-sector is roads, accounting for some **68**% of all project number and **66**% of investments, followed by railways, amounting to **13**% by number and **19**% by amount. The high proportion of roads is explained by the role that this mode of communication plays in regional exchanges, the relatively straightforward nature of many such projects, and the possibility of phased implementation of sections, assuming that the basic framework of a road directorate or its equivalent exists.

Road and railway projects generally follow the main Pan-European corridors, although there are some additional proposals such as in Albania, where the local North-South axis is not an official Helsinki corridor but nevertheless deemed to be of sufficient regional relevance. Railway projects included in the Quick-Start and Near-Term Packages focus on rehabilitation and maintenance of existing major corridors, such as the North-South Corridor X in the FYR of Macedonia, rather than new construction. One new Danube rail/road crossing between Romania and Bulgaria has been included. Three port projects, in Durres, Rijeka, and Constanta, have been listed as part of the Near-Term Package. The first one is a follow-up of on-going projects financed by the World Bank (USD 21.5 m) and the EIB/EC (EUR 7.5 m), which cover only the most urgent needs, and further investments appear to be required. The Sofia airport project preparation is well advanced and thus listed as a Quick-Start. Two other airport projects in Tirana and Skopje are viewed as Near-Term, and further Medium-Term projects should be identified in the perspective of the proposed consultancy on the regional study of air traffic infrastructure. Waterway improvement features in the country submissions, particularly from Romania, but the information available is extremely limited and further feasibility studies are probably required.

Regarding the Danube, three bridges were destroyed in Novi Sad, and two were damaged in Belgrade. Traffic down the Danube is blocked by debris, possibly unexploded ordnance, and a temporary pontoon bridge installed to link the two parts of Novi Sad which stand astride the river. Long-distance shipping has stopped, and the economic consequences resulting from the interruption of key routes are severe. As indicated in Part II, para. 2.1, a political agreement has been reached to clear the Danube, with financing coming mainly from the European Commission.

3. REGIONAL ENERGY PROJECTS

3.1 Context for Projects

Current IFI involvement

The energy sector in South-Eastern Europe has been the subject of considerable efforts by all of the international financial institutions and many bilateral donors. At a planning level the programmes of the European Commission in the context of the SYNERGY programme running over multi-year periods have been particularly significant, in terms of both resources and depth of results achieved.

On the lending side, all major multilateral banks have made loans to the region. The European Investment Bank has in the 1990s lent EUR 12 m toward the energy sector in Albania, EUR 45 m in Bulgaria, and EUR 174 m in Romania. In certain cases, environmental objectives such as flue gas cleaning or promotion of district heating were included in the projects. The European Bank for Reconstruction and Development has lent EUR 14 m to Bosnia and Herzegovina, EUR 24 m to the FYR of Macedonia and EUR 120 m to Romania for energy-related projects. The World Bank has been actively involved in the energy sector in all of the countries of South-Eastern Europe, and has successfully completed a number of projects. The current portfolio includes eight energy projects for which the World Bank is providing USD 543 m out of the total cost of USD 1.28 bn. In addition, there are a number of projects in the pipeline for all the international financial institutions. However, it is noteworthy that many projects in the sector face considerable implementation difficulties, possibly more so than in the transport field. This is often due to a very difficult institutional situation, as in Albania, or a lack of implementation capabilities of existing companies. As previously described, the conflicts in the region have also further complicated relationships and structures, rendering the operational environment for energy projects even more complex.

Project Potential for the Region

A comprehensive evaluation of the energy needs and possibilities in the region was carried out in the framework of the European Union SYNERGY Programme, which includes a Balkan Interconnection Task Force which produced a basic report in 1997 and is supplying a continuous stream of reports, the most recent of which is an Electricity Market Study[4]. Most energy sub-sectors were covered in this study, and a comprehensive review of all available project suggestions was carried out. In general, the maturity of the electricity projects is higher than that of the oil and gas sector projects proposed by the countries. Almost all regional investments in the electricity sub-sector are motivated by the need of interconnection with the

[4] PHARE Multi-Country Programme, "Study on the development of a competitive Balkan Electricity Market", Final Report, November 1999

Western European UCTE (Union for the Co-ordination of Transmission of Electricity) integrated system. Among the reasons are stability improvements, sharing of spinning reserve, prospects for export and import and cost savings. At present, each electrical system regulates load and frequency within its own area. In order to consolidate this mode of operation and to align with the guidelines of UCTE, agreements will have to be made among the countries concerned as to who will undertake central load-frequency control and the accounting of energy exchanges by the establishment of an area accounting centre. Investments in country load dispatch centres are thus essential to complement existing and future infrastructure.

The most recent report is the SYNERGY report on "Energy Interconnections in South Eastern Europe", Final Report, February 2000, which contains proposals for next steps on advancing co-operation and projects.

While the need for a long-term perspective is evident, careful analysis is required on the specific project levels to fully justify the proposed investments. Preparation for liberalisation is the justification of many projects, but it often remains difficult or impossible to define robust proposals for various liberalisation scenarios. Given the general over-capacities in generation in nearly all of Europe, it is understandable that countries attempt to tap export markets, but the overall market is increasingly restricted, and the result is fierce competition among producers feeding the UCTE system.

Regarding oil and gas interconnection, there has been continuing follow-up with programmes such as SYNERGY, PHARE, TACIS as well as the European-driven INOGATE (Interstate Oil and Gas Transport to Europe) initiative and SECI (Southeast European Co-operation Initiative), as well as various U.S.-inspired actions. As is inevitable with such a plethora of initiatives, there is a degree of overlap. The proposed Adriatic crossings to import gas to the SEE region from Italy are an example. These proposals would have a low priority in the list of projects agreed under the Balkan Energy Interconnection Task Force, but are judged by the Black Sea Regional Energy Centre to become potentially viable when integrated in a supply scenario for Caspian gas to Western Europe. It appears that the Caspian solution is distant, and an integrated 'onshore' approach might better suit network integration in the SEE.

3.2 Regional Programme/Projects

Regional Studies/Programmes

Regarding electricity infrastructure, and in particular institutional development on a regional scale, there are, as has been described previously, a large number of initiatives in progress with a continuing stream of outputs. An example is the recently presented final report of the PHARE multi-country study on the development of a competitive Balkan electricity market. Some key features of this study include:

- an extensive review of issues of private/competitive sector development, with a good compilation of best practices well-known in the field;
- an identification of transmission, distribution and generation investments;
- demand forecasts and estimates of short-term generation shortfalls; and
- discussion of the integration and interconnection process already in progress.

The study developed a list of recommendations that should gradually broaden electricity trade and markets, relating to data on short-term and long-term needs and the exchange of information thereon, the definition of the commercial aspects including taxation, pricing, and cost accounting, and regulatory aspects. A Ministerial Declaration of Intent was signed by Albania, Bosnia and Herzegovina, Bulgaria, Greece, Romania, the FYR of Macedonia and the European Commission at Thessaloniki in September 1999 towards creating a Regional Electricity Market under a Regional Market Co-ordinator. The study therefore represents a very complete inventory of necessary steps. A drawback, dictated by recent circumstances, is the lack of inclusion of a still significant co-ordinator of electricity interchanges in the region, the Electricity Co-ordinating Centre in the FR of Yugoslavia.

In view of the existing, recent studies of electricity market development it is thus recommended that these be fully exploited and detailed further steps and recommendations worked out as appropriate by the involved countries and institutions. In particular the following recommendations were made in the most recently issued studies:

PHARE multicountry study energy programme

"Study on the Development of a Competitive Balkan Electricity Market" (November 1999)

- The power companies of the beneficiary Balkan countries have separate Studies' Departments for performing load-flow studies, protection and co-operation studies, and these should form a common Study Group, to study all the grids as one and propose solutions to different problems, would be of significant assistance to the development of a regional energy market.

More specifically, the minimum technical infrastructure required for the operation of the Regional electricity market at the very early stage, includes the following:

- The installation of modern National Dispatching Centres (NDC) with the appropriate software, in those of the participating countries that do not have such a kind of facilities (Albania, the Former Yugoslav Republic of Macedonia) and the upgrading of others.
- The development of a high speed and capacity telecommunication network between the National Dispatching Centres of all countries participating in the Regional electricity market. The network should be capable to serve the high volume data transfer that the operation of the market will require in the future.

Synergy

The final report on "Energy Interconnections in South Eastern Europe" (February 2000), recommended that:

- The European Commission carefully reviews the final reports on the present projects and the Phare MEP study in order to identify which aspects needs more in-depth attention;
- The Commission utilises the time until the upcoming Synergy Conference, to be held in Athens 1-2 June 2000, to clarify the level of interest among West European electricity and gas companies and utility organisations to participate if needed in a **"Balkan Energy Co-operation Study"**.

Depending on the outcomes of the deliberations on the above, it may thus be recommended to undertake a Balkan Electricity Co-operation Study which would include a technically full simulation of the region's network. This is estimated to some EUR 8 million, and should be done in phases.

In Albania and the FYR of Macedonia, a formal national electricity generation and transmission master planning process would appear indicated, and the issue of primary fuel supplies should also be addressed (hydro-power versus gas-fired capacity). For Bosnia-Herzegovina and Croatia issues of interconnection to UCTE need to be specifically assessed.

- ***Regional Strategic Natural Gas Study and Regional Oil Pipeline Network Study (European Commission in consultation with European Investment Bank)***

These studies are conceived as a follow-up to the range of studies already undertaken by the Balkan Energy Interconnection Task Force regarding electricity, oil and gas, as well as the AMBO study for a potential crude oil pipeline linking the Black Sea to the Adriatic and other energy studies by private operators. Further region-wide analytical work needs to be carried out to justify decisions related to transmission interconnections, storage issues and the rehabilitation of existing oil and gas installations. This could include:

- A detailed review and update of all recent studies, of energy balances and associated issues, and of an appropriate energy strategy for the region resulting in the identification of specific energy infrastructure investment needs. It is recommended that the updates take into account basic macro-economic and project assumptions made.

- Integrated evaluation of the maturity of the various projects, their priority ranking in terms of the regional and/or local importance, as well as their technical, financial and economic justification. The particular political complexity of the region which adds significant uncertainty to medium and long-term planning and project evaluation should be taken into due account.

- Recommendations on the measures to be taken to achieve sector reforms required for the successful implementation and operation of the projects proposed.

- The gas sector review should incorporate the medium and long-term gas storage requirements in the area as well as the identification of potential rehabilitation or de-bottlenecking measures in the existing gas transmission and distribution system.

- The supply of crude oil review should include the larger context of Caspian oil exports via the currently discussed transport routes in the Balkans. Several (competing) projects are at present discussed for bringing the Caspian oil either from Black Sea ports or from the Turkish port of Ceyhan to the Balkan and to European markets while avoiding the Bosphorus Straits. One is the AMBO pipeline from Burgas in Bulgaria to Vlore in Albania. A feasibility study for the AMBO project was completed in 1995, and is now considered for updating and supplementing with the support from the U.S. Trade and Development Agency (TDA). Other projects to be considered are the Burgas - Alexandroupolis pipeline through Bulgaria and Greece (currently under study), the pipeline from the Romanian port of Constanta to Trieste in Italy (through Hungary, Slovenia and Croatia), and the Baku-

Ceyhan (Turkey) pipeline, which may become the main export route for Caspian oil due to recent strong backing. The study for the Constanta-Trieste project, also financed by TDA, assessed demand potential for Caspian crude in Central Europe (higher quality of the Caspian crude compared to Russian export blend in the long-term).

Recent developments must be fully considered, including intensified promotion of the Baku-Ceyhan pipeline by BP Amoco, the largest shareholder in the Azerbaijan International Operating Company (AIOC), and the consequently increased feasibility of the pipeline from Constanta to Trieste as a complementary investment. The latter would represent the shortest connection for the Caspian oil to Western European markets via the Black Sea, while other markets (e.g. US, Balkans) could be supplied from the export terminal at Ceyhan. In Romania some transport and storage capacity might be available from the existing large system, thus potentially not requiring a complete new oil pipeline and new import facilities.

Revision of the perspective for the AMBO and Burgas-Alexandroupolis pipelines, given that Romania and Bulgaria could receive Caspian oil through their existing Black Sea ports, while Albania would be served from its Durres port on the Adriatic Sea, and the FRY of Macedonia would be supplied by a pipeline from Thessaloniki following the sale of the Skopje refinery. Croatia, the FR of Yugoslavia and Bosnia and Herzegovina could be supplied from existing pipelines routes through Hungary and Italy. Sufficient diversification of oil imports could become an important issue for the region.

Identification of potential requirements for replacement of obsolete existing installations, since upgrading or replacement (which might be necessary anyhow) might be more favourable to the region than constructing an entirely new regional transport pipeline for Caspian crude oil.

Assessment of the proper exploitation of local oil and gas reserves in countries such as Albania, which experienced a decline in domestic oil and gas production due to poor technology and obsolete equipment.

Priority Package

As a result of the selection process, a total of **38** energy projects with various degrees of implementation feasibility (noting the presence of potentially competitive projects) were identified, of which **8** were classified as Quick-Start Projects and **9** as Priority Projects. The corresponding project costs for the latter projects are EUR **39** m and EUR **695** m respectively. The main sub-sector is electricity, which accounts for EUR **731** m worth of potential investments as part of the Quick-Start and Near-Term packages. Outside studies, no gas or oil projects are included in the priority package.

The current large Third Electric Power Project in Bosnia and Herzegovina being defined by the World Bank has been included as two tranches, one in the Quick-Start and one in the Near-Term packages, the financial plan remaining to be completed. The high-tension link between the FYR of Macedonia and Bulgaria has also been included in the Near-Term package, since the connection appears relatively robust to various supply scenarios, although there is still considerable work to be done in terms of quantifying the economics for possible options for the connecting points. The reconstruction of the destroyed Ernestinovo substation (Croatia) has also been included, since this substation and the associated grid connection are essential for the reconnection of the SUDEL area in general of the UCTE, and for the exports of hydro-electric power from Bosnia and Herzegovina. In general, however, most of the inter-country grid

connections in the region remain in need of further study (with uncertain outcomes as to feasibility), warranting their listing in the Medium-Term package. Among these lines is a connection between northern Albania and Montenegro, as part of the Adriatic route.

The construction of the crude oil pipeline from Thessaloniki to Skopje has been included in the Medium-Term package, although agreement with private Greek investors is well advanced, because the involvement of international financing agencies is likely to be conditional on the positive outcome of a further market study. One district heating scheme in Bosnia and Herzegovina is listed as Medium-Term project because, although its urgency is probably unquestioned, the institutional issues often raised by district heating schemes need resolution before implementation.

4. REGIONAL WATER PROJECTS

4.1 Context for Projects

Current IFI involvement

The European Investment Bank has in the 1990s lent EUR 53 m toward the water and environment sector in Bulgaria (the Maritsa Basin Wastewater project and the Danube river bank and coastline protection project). The European Bank for Reconstruction and Development has lent EUR 103 m towards municipal services (including waste management) in Croatia, and EUR 112 m toward municipal and environmental projects in Romania. The World Bank has made loans of USD 57 m to Bulgaria and USD 25 m to Romania in the water sector, and has a diversified portfolio of environmental projects in the region. This includes IDA forestry loans of USD 7 m to Bosnia and Herzegovina and USD 8 m to Albania, and Global Environmental Facility grants of some USD 25 m going towards nature and biodiversity conservation in Romania (Danube Delta), Albania and the FYR of Macedonia (Lake Ochrid), and Bulgaria (Ozone Depleting Substance Phase-out). Bulgaria and Croatia have also received environmental remediation loans of USD 16 m and USD 42 m respectively. In all, World Bank loans and grants towards water and environment thus total some USD 180 m in the region, a sizeable amount given the well-known difficulties of implementing projects in this sector.

Project Potential for the Region

Although water projects by their nature usually address local needs and are based on locally available supplies, there may be a larger, regional dimension, for instance due to scale as in a major project in the capital city or an important provincial centre. It may have an important "demonstration effect", e.g. as an exemplary approach, a pilot project, or an innovative or path-breaking venture. Water projects may also have an impact on other countries through a border location, a shared water body or catchment, or a discharge into rivers entering other countries. Another aspect is that it may contribute to integration with the EU if its standards comply with EU directives, and advance the conditions for EU Accession. This is why only a few proposed projects are included in this regional programme, since most of them are more justified in a national development programme.

Due to the dispersed nature of water projects, there is often insufficient information available on needs and the content, viability and sustainability of projects to allow the assessment of their merits. There are larger municipal water schemes with an emphasis on upgrading existing systems, sometimes with a proposal for private sector participation, particularly for the large cities. Another project type are systems in smaller towns and settlements, where there are frequently additional needs in terms of local technical expertise to plan and implement such schemes for which local municipalities may be ill-equipped. Finally there are environmental schemes with a regional dimension.

In Bulgaria, the EIB and the EC are providing rehabilitation of the water systems of four towns (Stara, Zagora, Haskovo and Dimitrovgrad), and Sofia's water system will be privatised in the near future with the help of the EBRD, resulting in certain financing needs. Future investment is likely to be in the following priority areas: urgent repairs and rehabilitation to existing networks, including leakage control; purification of freshwater supplies in localities with most serious contamination; completion of sewerage networks for larger towns; construction and upgrading of WWTPs for larger towns and pollution black spots; and specific water supply projects with a strong local rationale (e.g. Plovdiv). There is an international dimension to works reducing pollution of the Maritsa river, which drains into Greece and the Aegean Sea. Regarding the financial implications of the application of EU standards, the 1997 EU Approximations Study[5] estimated that full compliance would require investments of EUR 4.9 bn, of which EUR 870 m would accrue in the first five years. The investments would be split between water supply (36%), sewerage (24%), and wastewater treatment (40%). The EU's pre-accession assistance programme ISPA has allocated an annual sum of EUR 53 m of grants for environmental, mainly water, and projects. It is envisaged that the projects selected for subsidy would mostly be co-financed by other agencies and lenders. At a recent meeting of the Project Preparation Committee, Bulgaria presented three WWTP projects, in Troyan, Sevlievo and Gornja Oriahovitsa. Denmark expressed an interest in financing the first and third of these.

Romania has a potentially huge need for investment in both fresh water and wastewater, estimated by the EU Approximations Study to be EUR 10.13 bn, of which EUR 4.31 bn would be urgent measures for the first five years. The development of bankable projects has gone furthest in Bucharest and several other regional cities and towns, either involving major institutional support (from IFC, EBRD and PHARE) or depending on private initiatives. The relatively large ISPA programme (EUR 122 m annually in grants) will generate opportunities for co-financing in the regions and provincial towns, but a formidable effort of project identification and institutional support will be required, which will take time. Funding for feasibility studies and for the creation of Project Implementation Units will be essential, and full advantage should be taken of the ISPA facility for this. EBRD has indicated interest in several water projects, namely Constanta, Ploesti, Timisoara, Brasov and Pitesti.

Implementing these schemes will depend on tackling the above-mentioned constraints. The UK Know-How Fund may provide technical assistance to the Sibiu project. Romania presented several water projects to a recent meeting of the PPC, namely WWTPs for Constanta, Sibiu, Lugoj, Dorohoi and TG Jiu. There is a possibility of German involvement in Lugoj and of the Netherlands in Constanta. The International Association of Waterworks in the Danube Catchment Area, with strong Austrian support, has also identified a programme to improve the water supply in ten towns close to, and drawing water from, the Danube River.

[5] *Compliance costing for approximation of EU environmental legislation in the CEEC*, May 1997.

In Albania, following its Water Supply Urgent Rehabilitation Project, the World Bank plans a follow-up Municipal Water and Wastewater Project (for which co-financing is being sought) that will include a management contract for four cities (Durres, Fier, Lezhe and Saranda). The Japanese JICA should continue its earlier support for the Tirana sewerage and wastewater project. For Kosovo a Medium-Term Investment Programme has been drawn up which, for water and sewerage, contains proposals for a minimum programme costing EUR 33 m, and for a "normal" programme costing EUR 150 m. Croatia is planning to use an integrated river basin management approach for the water resources of the Sava River. This is a regional programme *par excellence*, offering a useful framework for assessing projects. The World Bank is planning a Municipal Water and a Sava River project in 2002 and 2003, respectively. The Vukovar and Sibenik WWTPs, and the Regional Water Supply System for Eastern Slavonia have also been suggested as projects, and EBRD is programming assistance to Dubrovnik Municipal Services, Zagreb WWTP, Rijeka Sewerage, and possibly Osijek and Karlovac.

In the FYR of Macedonia the World Bank is planning a water utility improvement project for the year 2000 which will assist the utilities in Skopje, Bitola and Prilep to function more efficiently. As part of the project preparation, feasibility study and preliminary design, wastewater treatment plants were considered in Prilep (costing around USD 5.7 m) and Bitola (USD 8.7 m). The Government is currently seeking grant financing for the construction of these wastewater treatment plants. Given the environmental benefits of cleaner rivers and agricultural benefits in the Pelagonia region through the potential use of river water, the government efforts to seek donor financing should be supported. A Master Plan for Integral Development and Water Resources Management has been prepared with Japanese assistance, and two of the largest projects in the Master Plan have a regional dimension. They are the completion of the Lisice Dam, a multipurpose scheme on the River Topolka, and environmental protection of the Ohrid Lake, which borders Albania and is thus one of the potential areas for genuine cross-border water projects. For Ohrid Lake, financing of some DM 21 m from the Kreditanstalt für Wiederaufbau (KfW) of Germany has been concluded in February 2000 for sewerage collection and treatment works in Ohrid and Struga towns. This is paralleled by similar investments financed by some DM 22.4 m accorded by KfW on the Albanian side of Lake Ohrid, including the town of Pogradec. Revitalisation of the Dojran lake via injection from wells at Gjavato village is also listed as an urgent project, although co-operation with Greece on the priorities is a pre-requisite. There are many smaller water schemes identified as part of the same Master Plan.

For Bosnia and Herzegovina, the World Bank is planning a Mostar water project, mainly investments into interceptors and wastewater treatment, estimated around USD 26 m and which co-financing is being sought. The protection of the Neretva Water Basin is a project of joint interest with Croatia.

4.2 Regional Programme/Projects

Regional Studies

- ***Environmental Master Plan for the Adriatic Sea (Croatia)***

The Croatian authorities, in their submission to the Stability Pact, have proposed to elaborate a sustainable development programme for the Adriatic Sea, which in effect would amount to working out key recommendations on the foundation of a kind of Environmental Master Plan which would be agreed to by the riparian countries. Among the tasks required to be undertaken would be the establishment of the present state of natural resources, and a determination of the measures and methods for undertaking co-ordinated actions in solving the environmental problems that are identified. While the scope of such a study appears ambitious, it does respond to an urgent need. The existing framework of collaboration of international institutions in the METAP Programme (Mediterranean Environmental Technical Assistance Programme) could possibly provide support both technically and financially, and this should be further investigated. The proposed initial cost of the above study has been set at EUR 0.5 million.

Priority Package

A total of **12** water and environmental sector projects with a marked regional character were selected, of which **4** were classified as Quick-Start and **8** as Near-Term projects. The corresponding project costs of the latter are EUR **63** m and EUR **339** m respectively. Among the municipal water supply systems proposed are Durres, Fier, Lehze, Vlore, Saranda and Gjirokaster in Albania; Sofia, Stara Zagora, Haskovo and Dimitrovgrad in Bulgaria; Rijeka and Dubrovnik in Croatia; Lysice and various other municipalities in the FYR of Macedonia; and Bucharest in Romania. Sewerage treatment is included on a selective basis, depending on project maturity. It is to be noted that relatively few larger water and wastewater schemes have been included in the Stability Pact submission. Rather than a dearth of projects, this reflects the need to be selective in the regional context as previously discussed. This ensures that the retained schemes do effectively meet the criterion of having a regional replication potential or exemplary nature. In this context, the presence of international consultant advice and other support mechanism such as twinning arrangements with European water authorities can exert a welcome influence.

Also retained in the Near-Term package is the Romanian proposal for modernisation of monitoring systems in the Danube and the study of complex water management issues in the lower Danube. Such a scheme is undoubtedly of importance in the regional, post-conflict context, and has high trans-boundary backward and forward linkages. These measures would also be a necessary preparation for the environmental rehabilitation of natural areas in the lower Danube. No costs are as yet available for these measures, which need to be further defined.

5. REGIONAL TELECOMMUNICATIONS PROJECTS

5.1 Context for Projects

Current IFI involvement

In many countries, where per capita incomes remain among the lowest in Europe, revenue levels are still insufficient to ensure profitability, but some fundamental changes are now being made to attract investment in telecommunications. The biggest change involves the willingness of national governments to privatise service providers and open the door to foreign investors. Through their past activities and investments in the telecommunications sector within the Stability Pact region, the IFIs and the European Union have made important contributions to the transition process with the objective of establishing a fully liberalised, market-led, financially self-sufficient sector. In countries receiving technical assistance, such as PHARE, TACIS, OBNOVA, etc., the IFIs including the EC have pursued the following transition-related objectives:

- promoting sustainable network expansion, increasing the density of telephones and improving the quality of service;
- fostering emergence of innovative and advanced communications services crucial for overall competitiveness of businesses within the country;
- assisting the government in accelerating liberalisation;
- assisting incumbent operators in coping with economic and legal changes;
- developing appropriate regulatory and legal frameworks; and
- extending development of the sector beyond basic telephone services, such as media promoting access to communications and information.

This is achieved through a number of steps, including establishment of a regulatory framework, promoting sound corporate governance and responsible market behaviour by borrowers, promoting competition by encouraging introduction of mobile operators, second operators and advanced service providers, improving the efficiency of the incumbent operators and, in many cases, fostering their privatisation.

As examples, the European Investment Bank has awarded loans toward the telecommunications sectors in Bulgaria of EUR 70 m and in Romania of EUR 120 m to support modernisation of incumbent carrier networks. The EBRD has arranged finance worth USD 290 m toward mobile telecommunications in Romania. PHARE and various EU Member States have financed studies and technical assistance worth several million EUR in the region.

Historically, IFI telecommunications financing to countries in the Stability Pact region was characterised by sovereign-guaranteed loans to the national operator (intended to enhance telecommunications development and, at the same time, stimulate liberalisation of the sector), followed by non-guaranteed loans to facilitate privatisation of the national operator and, more recently, lending to independent mobile operators. According to this approach, future financing requirements and opportunities lie almost entirely with the private sector. They are also a function of government policy/regulatory regime. As a complementary line of action, a regional assessment of baseline accessibility is also advocated in some quarters. The policy of the European Union towards telecommunications in the Stability Pact Region has the medium-term objectives of: (i) implementing the ‘acquis communautaire’; (ii) liberalising

telecommunication services, (iii) establishing an independent regulator, and (iv) standardising and accrediting telecom equipment. As such, the European Union, in agreement with the IFIs, has only granted funding for preliminary studies, the establishment of independent regulators, technical and legal training, the setting-up of testing and accreditation agencies, etc. The conditionality associated with past IFI lending has encouraged a predictable, transparent and equitable legal regime for the sector as a precondition of effective competition. In many cases, in parallel with project financing, the IFIs have initiated and managed donor-funded technical co-operation projects to assist in the restructuring of the sector, preparing a modern telecommunications law, awarding licences, laying interconnection principles, and establishing an independent regulator.

Project Potential for the Region

Future lending under the Stability Pact should aim primarily to support regional economic development and integration, with a secondary objective of improving accessibility to efficient telecommunications both for new businesses (particularly SME's) and for individuals. However, in this respect, in telecommunications, unlike other infrastructure sectors, intra-regional capacity does not need to be provided directly between countries. As long as each region has access to the international telecommunications network, inter-regional communications can be technically established.

Another aspect is the development of the new telecommunications- and computer-based technologies and their social repercussions on the way modern societies function. Information society is based upon communications, swift distribution of data and can not exist without an efficient underlying telecommunications network.

The dual role of telecommunications, as both a traded service and a vehicle for trade in other sectors, means that price reductions, improvements in the level of investment, and service and infrastructure development will also impact positively other sectors of the economy.

It is in the interest of the telecommunications sector in the Stability Pact Region to initiate the liberalisation of, or further liberalise the sector with the aim of attracting investors from the private sector with the ultimate objective of improving quality of service, reducing the cost of communication and offering advanced telecommunications services.

EIB has estimated the potential medium-term investment needs of the sector, divided between the 'carrier network' of fixed infrastructure[6] and mobile services, and between investments required to maintain provision to existing users and to serve potential new users.

However, it should be emphasized that this assessment needs to be more firmly grounded in a consistent concept for telecommunications development of the region as a whole. These amounts are summarised in **Table 12**, and show a potential expansion requirement of up to EUR 10.8 bn over the next five years. Much of the funding requirement for mobile operations can be generated by the private sector, and the corresponding projects are thus not included in the proposed packages. However, the carrier network is likely to require a wider range of resources, particularly in the lead-up to privatisation.

[6] The 'carrier network' telecommunications infrastructure used to provide fixed service, plus elements used by mobile operators such as leased lines.

Table 12: Telecommunications funding requirements in South-Eastern Europe

EUR Billion	**Existing Network**	**Expansion**
Carrier networks	8.5	*up to* 8.5
Mobile networks	0.8	*up to* 2.3
Total	9.3	*up to* 10.8

Three main factors will influence the pattern of lending:

- the speed of transition of individual countries towards EU membership;
- the degree of sector liberalisation and development of specific markets; and
- the extent of support required to achieve Universal Service

5.2 Regional Programmes/Projects

The objectives of donor financing for the sector can be summarised by:

- Support to information society projects
- Support to access through a Universal Service Fund
- Support to regulatory framework, particularly by training
- Support to institution building, and the ability of institutions to tackle issues such as tariff policy, possibly including a regional conceptual study
- Selective support to national operators.

A programme of investments geared towards the needs of capacity building in the telecommunications sector has been included in the Near-Term package:

- National and Regional Training programmes in the technical as well as the economic and regulatory sector and for SMEs :EUR 10 m; and
- Institution Building (Standards and Accreditation Agency, Regional Regulatory Agency, preparatory studies, etc.): EUR 2 m,

while two other much larger initiatives:

- Contribution to a regional Universal Service Fund :EUR 100 m; and
- Stability Pact Region Information Society programme: EUR 50 m

are part of the Medium-Term projects.

6. REGIONAL PROGRAMME/PROJECTS SUMMARY

6.1 Project packages

The EIB has established a list of projects for short- and medium-term implementation. This list originates from two sources: (i) submissions by beneficiary countries of regional and national projects that they consider of priority in order to foster the Balkan Stability Pact; and (ii) information provided by the International Financial Institutions, namely the European Commission, the European Bank for Reconstruction and Development, the European Investment Bank, and the World Bank, regarding selected projects for which they have been approached or which they have already started to review or prepare. This list as it currently stands comprises a total of nearly **140** projects for the 7-country South-East European region, with an approximate investment cost of some EUR **11** billion. It has been divided into three groups:

The group of so-called **Quick-Start** projects consists of a total of **35** projects with a total estimated cost of EUR **1131** million. Implementation of these projects is likely to start or a tender will be awarded during the next twelve months (up to 31 March 2001).

The group of so-called **Near-Term** projects consists of a total of **50** projects with a total estimated cost of EUR **2735** million. These are projects which appear prima facie economically justified, do not present major sector or project issues, and thus for which preparation (including tendering) should be accelerated.

The last group, called **Medium-Term** projects, consists of the remaining projects that require further investigation or analysis on specific issues, which must first be solved.

The **lists by country** are reproduced in **Annex 1** and **by sector** in **Annex 2.** Summary diagrams illustrating the **shares of countries and sectors** are shown in **Annex 3** and **Annex 4** respectively. Transport projects (roads, railways, ports and waterways, and airports) dominate the selection, accounting for **91**% of the Quick-Start projects, and **62**% of the Near-Term projects. The role of transport in regional projects is not surprising given the intrinsically regional nature of transport links and the still relatively sparse infrastructure in the region. The other large sector is electricity projects, which account for **3**% of Quick-Start projects and **25**% of the Near-Term projects.

An important feature of the selection process are the activities on a regional scale. A total of six such activities are proposed for the Quick-Start package, two for the Near-Term package, and two for the Medium-Term package. In transport, ***investment identification and priority determination is recommended for land transport and for air traffic infrastructure*** and a ***multi-country trade and transport facilitation program*** is being put into implementation.

For the energy sector, ***certain national electric power sector studies, a regional strategic natural gas study, and a regional oil pipeline network study*** are proposed. Also proposed is a ***telecom capacity building package*** consisting of regulatory training and institution building. Finally, for water and the environment, an ***environmental master plan for the Adriatic Sea*** is proposed by Croatia.

The general principles underlying the regional studies are that a consistent project identification and priority selection process is required as a basis for sound regional planning.

These studies should be robust under the most likely planning scenarios and thus able to be implemented without risking later planning inconsistencies, an assumption which will need to be verified on a continuous basis.

While an attempt has been made to keep a certain balance between the countries of the region, the proposed outcome of the selection process is primarily the result of project-related considerations. The relatively large shares for Albania, Bosnia and Herzegovina, and the FYR of Macedonia reflect the fragile nature of these economies and their proximity to sources of the recent crises. For Romania and Bulgaria, mainstream projects are essentially assumed to be considered outside the Stability Pact structures, since the European Union's pre-accession process will be the dominant feature regarding many aspects of outside assistance. The information existing or provided on various infrastructure projects in Montenegro and Kosovo has only allowed inclusion of these projectson a tentative basis.

6.2 Financing Issues

When such information is available, the tables presented give indications as to likely sources of finance (which may be limited to expressions of interest). It is expected that as the process moves forward, it will become possible to identify sources of finance with increasing detail and reliability as distinct commitments are made by bilateral and multilateral institutions. In practice, it will be necessary to follow up and keep track of individual projects, since each will generate a specific timetable and have specific requirements. It should also not be forgotten that the regional co-ordination process does not obviate the need for individual financial institutions to follow their respective approval and commitment procedures, with their specific timing and information requirements. In this respect, it is helpful if financial packages for projects can be structured so as to enable the participating institutions to proceed at their own pace without endangering overall project progress, i.e. using the technique of parallel financing. A crucial factor will be the mobilisation of grant funds to enable the economically sound but financially weaker projects to move ahead.

6.3 Implementation Issues

One of the critical bottlenecks is the implementation capacity of countries and institutions. This is well recognised, as is shown by the frequent creation of project implementation structures specific to a project. However, this is no guarantee that implementation and project ownership are satisfactorily resolved. Also, for a sustainable effect, the capacities put into place in the context of a project should transfer themselves on a permanent basis to the recipient countries and institutions. In certain countries of the region, the implementation bottleneck is an actual threat to the chances of success of any more ambitious type of programme, however well intentioned and designed. Examples of obstacles to implementation arise particularly in the legal and public administrations. Likewise, inability to handle issues such as bilateral agreements, land acquisition, consultant supervision or tendering procedures can call into question the key objectives of an assistance programme. A concerted effort to bring the right amount of technical assistance to bear on projects is thus essential if these pitfalls are to be avoided or at least minimised.