

### 5.3 Transportation Network in the Region Present Situations and Future Plan

#### 5.3.1 Container Transport Network related to the Port

##### (1) Introduction

There are two main operations of active vessels in service at the Port of Constantza; tramper transportation, which transport bulk cargo with oil tankers or ore vessels and liner transportation. Tramper service is based on a direct contract between ship owners and a shipping company and is thus not regular. Therefore, a transport network is not always organized. On the other hand, liner freighter services operate regularly under a very fixed schedule in order to collect cargoes and deliver them to the destination point.

Typically, liner service involves the transport of containers, and a transport network is extended throughout the world. Sailing schedules are released up to two or three months in advance, so that customers can select delivery dates from the specified network and various schedules.

##### (2) Container Transportation Network in the Black Sea

There are currently approximately 10 Container Shipping Service Lines in service at the Port of Constantza. All are Feeder Service Lines around the Black Sea and they locate their Hub Ports in the Mediterranean Sea. The following Table 5.3.1 indicates the approximate proportion of transactions in each service line at the port of Constantza in 1999.

**Table 5.3.1 Proportion of Container Service Volume in Constantza Port by Line**

Shipping Line	Share (%)
ZIM Israel Navigation	21
Mediterranean Shipping Container (M.S.C.) Bulcon	21
CMA-CGM Line /Levant Maritime services	19
Maersk Sealand	11
Happag Lloyd	11
Blue Container Line (B.C.L) / Transatlantic	6
Evergreen	4
Cosco	3
DSR-Senator	3
Others	1
Total	100

Calling routes, standard calling schedules, allocation of vessels and types of the main Shipping Service Lines are described below. Those Service Lines allocate vessels for the

Port of Constantza on a weekly basis.

(3) Blue Container Line

Blue Container Line provides two service strings, Black Sea Services and Mediterranean Sea Services (Spain – Greece), using Piraeus as a main Hub Port. Four full container vessels are dedicated in service, with capacities ranging from 300 TEU to 500 TEU. Connecting to the main service lines for the other continents, Mediterranean Sea Services calls at five various ports: Naples and Gioia Tauro for the US and Western Europe, Valencia and Barcelona for West and North Africa and Gioia Tauro for Asia. Standard schedule and the main characteristics of the vessels dedicated to the services above are indicated in Tables 5.3.2 and 5.3.3.

**Table 5.3.2 Standard Schedule (Day)**

Port		Black Sea Service	Mediterranean Service
Barcelona	Spain		12
Naples	Italy		14
Gioia Tauro	Italy	0 /16	
Piraeus (Hub Port)*	Greece	4	0 /16
Thessaloniki	Greece		
Istanbul /Armaport	Turkey	5	2
Istanbul /Haydarpasa	Turkey		3
Odessa	Ukraine	7	
Constantza	Romania	8	
Thessaloniki	Greece		4
Izmir	Turkey		5
Piraeus (Hub Port)	Greece	11	6
Gioia Tauro	Italy	13	
Naples	Italy	14	8
Valencia	Spain		11

\* Hub Port

**Table 5.3.3 Main Characteristics of the Vessels**

Name of Vessels	Medbridge	Medspirit	Medglory	Medhope
Type of Vessels	Full con.	Full con.	Full con.	Full con.
Year built	1982	1978	1977	1976
GRT	5,354	3,141	3,855	4,790
DWT	7,512	4,600	4,800	6,691
TEU Capacity	500	320	300	370
Reefer Plugs	50	30	20	20
Remarks	Ocean	Ocean	Ocean	Ocean

(4) Mediterranean Shipping Company (MSC)

MSC provides five service strings for ports on the Black Sea; Russia-Georgia Service, Ukraine Service, Romania Service, Bulgaria Service and Thessaloniki-Gemlik Service. Those services also use Piraeus as Hub Port in order to run the services efficiently.

**Table 5.3.4 Service Frequency of each Service String**

Name of Service	Number of Vessels	Frequency (time/ week)	Calling Ports (* Hub Port)
Russia-Georgia	2	1	Piraeus*, Thessaloniki, Istanbul, Poti, Novorosiisk
Service, Ukraine Service	1	1	Piraeus*, Ilyichevsk, Gemlik
Romania Service	2	1	Piraeus*, Gemlik, Istanbul, Constantza, Izmir
Bulgaria Service	1	1	Piraeus*, Varna, Bourgas
Thessaloniki-Gemlik Service	1	2	Piraeus*, Thessaloniki, Gemlik

For Romania Service, MSC allocates two full container vessels of 1000TEU capacity on a weekly basis. Tables 5.3.5 and 36 indicate standard schedules and main characteristics of the vessels dedicated to the Romanian Service. Standard schedule and the main characteristics of the vessels dedicated to the services above are indicated in the Tables 5.3.5 and 36.

**Table 5.3.5 Standard Schedule (Day)**

Port		Romania Service
Piraeus*	Greece	7
Trieste	Italy	9
Ravenna	Italy	10
Venice	Italy	13
Piraeus	Greece	0 / 14
Gemlik	Turkey	2
Istanbul	Turkey	3
Constantza	Romania	4
Izmir	Turkey	6

**Table 5.3.6 Main Characteristics of the Vessels dedicated to Romania Service**

Name of Vessels	MSC Romania	MSC Sariska
Type of Vessels	Full con.	Full con.
TEU Capacity	1,000	1,000
LOA (m)	157	183
Max Draft (m)	10.5	10.8
Remarks	Ocean	Ocean

(5) Maersk Sealand Services

Maersk Sealand commenced its services to Romania in 1998. It provides fixed weekly sailing to and from Constantza, connecting to the main line to the ports in Europe, North and South America, Middle East, Oceania and Africa via Gioia Tauro, Italy. Standard schedule and the main characteristics of the vessels dedicated to the services above are indicated in the Tables 5.3.7 and 5.3.8.

**Table 5.3.7 Standard Schedule (Day)**

Port		Black Sea Service
Gioia Tauro	Italy	0 /14
Ilyichevsk	Ukraine	5
Constantza	Romania	9
Thessaloniki	Greece	11

**Table 5.3.8 Main Characteristics of the Vessels**

Name of Vessels	Sea Adventure	Sea Pioneer
Type of Vessels	Full con.	Full con.
DWT	20,000	20,000
TEU Capacity	1,200	1,200
LOA (m)	202	202
Max Draft (m)	9.7	9.7
Breadth (m)	23.8	23.8
Remarks	Ocean	Ocean

(6) CMA-CGM Line

CMA-CGM Line provides the Feeder Service for major ports around coastal lines of the Black Sea with two full container vessels with capacities of approximately 500TEU to 600TEU; it uses Malta Port as its Hub Port. Malta Port is used for connection with a Main Line, and it connects for Europe, North America, Middle East and Asia. Standard schedule and the main characteristics of the vessels dedicated to the services above are indicated in the Tables 5.3.9 and 10.

**Table 5.3.9 Standard Schedule (Day)**

Port		Black Sea Service
Malta (Hub Port)		0 /15
Piraeus	Greece	4
Odessa	Ukraine	7
Constantza	Romania	9
Varna	Bulgaria	10
Piraeus	Greece	12
Gioia Tauro	Italy	14

**Table 5.3.10 Main Characteristics of the Vessels dedicated to Black Sea Service**

Name of Vessels	Wastertill	Wasterkade
Type of Vessels	Full con.	Full con.
Year Built	1986	2000
GRT	5,847	7,541
DWT	7,330	8,430
LOA (m)	120	127
Max Draft (m)	NA	NA
Breadth (m)	19.6	20.4
Remarks	Ocean	Ocean

(7) ZIM Israel Navigation

ZIM Israel Navigation uses Haifa Port as a Hub Port, allocating two full container vessels, of capacity 920TEU. Its services cover Black Sea and Aegean Sea Service. As stated above, it provides services for Port of Constantza on a weekly basis. The connection from/to the Main Line to the feeder services are done at various locations Haifa Port, and their service routes are Asia-Mediterranean Service, West Mediterranean Service, U.K.- Mediterranean Service and Europe West-coast Mediterranean Service. Calling ports of the above feeder vessels are indicated in the Table below.

Port		Black Sea & Aegean Service
Haifa	Israel	NA
Istanbul	Turkey	NA
Odessa	Ukraine	NA
Constantza	Romania	NA
Istanbul	Turkey	NA
Izmir	Turkey	NA

Na: Not available

Table 5.3.11 describes the summarized information described above.

**Table 5.3.11 Black Sea Container Transportation Network**

Shipping Line	Blue Container Line		MSC				Maersk Sealand Line	CMA-GCM Line	ZIM Israel Navigation
	Name of Service String	Black sea Service	Russia-Georgia Service	Ukraine Service	Romania Service	Burgalia Service			
<b>Hub Port</b>		Piraeus (Greece)		Piraeus (Greece)			Gioia Tauro (Italy)	Malta	Haifa (Israel)
<b>Ports on the Black sea</b>									
Turkey Istanbul									
Burgalia Bourgas									
: Varna									
Romania Constantza									
Ukraine Odessa									
: Ilychevsk									
Russia Novorossysk									
Georgia Poti									
<b>Service Frequency</b>		weekly	weekly	weekly	weekly	weekly	weekly	weekly	weekly
<b>Number of Vessel dedicated (TEU Capacity)</b>		2 300 ~ 500	2	1	2 1,000	1	2 1,200	2 500 ~ 600	2 920

### 5.3.2 Trans European Network and Development Plan

The ability of Constantza Port to act as an overland collection point for cargo to / from the landlocked economies of Central Europe, i.e. Austria, the Czech Republic, Hungary and the Slovak Republic, will largely be dependent upon the quality of hinterland links between these countries and the port. Recognising the significance of hinterland connections to trade facilitation, the European Union, in conjunction with multilateral agencies such as the European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD), is undertaking a large number of development and investment plans to upgrade the inland infrastructure in Central and Eastern European countries.

The backbone transport network of the fifteen Member States of the European Union and the ten Central and Eastern European countries have been defined at the ministerial level by the Pan-European Transport conference in Crete in 1994, and further modified in Helsinki in 1997. The conference identified ten major transport corridors, comprising road, rail and inland water transport (IWT), across the EU and Central and Eastern Europe.

The following Trans-European Network (TEN) corridors pass through Romania:

- Corridor IV – Road and rail corridor, oriented East – West  
*Constantza – Bucharest – Budapest – Bratislava – Prague – Berlin*
- Corridor VII – IWT corridor, oriented East – West  
*Constantza – Danube – Rhine Main-Danube Canal – Rhine – Rotterdam*
- Corridor IX – Road and rail corridor, oriented North – South  
*Alexandropolis – Bucharest – Chisinau – Kiev – Moscow – St. Petersburg*

A recent study funded by the EU, which was titled “*Transport Infrastructure Needs Assessment in Central and Eastern Europe*”, identified the investment requirements for augmentation of the ‘*backbone network*’ and ‘*additional network components*’ in these countries. The ‘*backbone network*’ comprises the Pan-European Transport corridors, whilst the ‘*additional network components*’ comprise secondary network components, which connect with the

*‘backbone network’.*

The requirements assessed for augmentation of the *‘backbone network’* in Romania were as follows:

*Corridor IV – Railway (total length 1,349km)*

- Curtici – Arad – Simeria – Vintu de Jos – Alba Iulia – Coslariu – Copsa Mica – Brasov – Ploiesti – Bucuresti – Fetesti – Medgidia – Constantza
- *link to Bulgaria:* Arad – Timisoara – Caransebes – Drobeta Turnu Severin – Strehaia – Craiova – Calafat

*Corridor IV – Road (total length 1,213km)*

- Nadlac – Timisoara – Lugoj – Deva – Sebes – Sibiu – Pitesti – Bucuresti – Lehliu – Fetesti – Cernavoda – Constantza – Agigea
- *link to Bulgaria:* Lugoj – Caransebes – Orsova – Drobeta Turnu Severin – Craiova – Calafat

*Corridor VII – Inland Water Transport (total length 1,167km)*

- Danube (Bazias – Cernavoda Port – Braila Port – Sulina Port)
- Danube Black Sea Canal (Cernavoda Port – Poarta Alba – Constantza Port)
- Poarta Alba – Midia – Navodari Canal Branch

*Corridor IX – Railway (total length 687km)*

- Ungheni – Cristesti Jijia – Iasi – Pascani – Bacau – Adjud – Marasesti – Focsani – Buzau – Ploiesti – Bucuresti – Videle – Giurgiu

*Corridor IX – Road (total length 418km)*

- Albita – Marasesti – Buzau – Bucuresti – Giurgiu

The total investment requirements for these improvements have been estimated at approximately €3.7 billion for the railway network, €4.9 billion for the road network and €260 million for the IWT network. Augmentation of the *‘additional network components’* is estimated to cost approximately €665 million for the railway network and €330 million for the road network.

From the foregoing it is clearly evident that the required augmentation of transport infrastructure in Romania will be an extremely capital-intensive exercise. Whilst the study has identified the overall needs at a macro-level, the EU is likely to prioritise, and only select a finite number of projects for implementation in the near to medium-term. This is predicated on the total investment requirement for augmenting infrastructure in the ten countries, which is estimated at nearly €90 billion.

Studies undertaken through the European Union's PHARE programme were primarily focussed on technical assistance, and were essentially intended for identification of potential priority projects. Drawing upon the conclusions of such studies, the European Union has created the ISPA (Instrument for Structural Policies for Pre-Accession) instrument to (partially) fund some of the projects identified. The ISPA instrument provides a sum of €1.04 billion per annum, over the period 2000 to 2006, to be equally divided between the ten applicant countries from Central and Eastern Europe. The EU has established a set of standards, for allocation of these funds between the countries, which are based upon criteria such as land area, population, GDP, etc. Based on these standards, Romania is the second largest recipient of funds, and it can expect to receive between €208 million to €270 million per annum. Additionally, the sums received are to be approximately equally divided between transport and environment projects, which would mean that approximately €104 million to €135 million per annum would be available for the transport sector. This figure would amount to between €728 million and €945 million over the seven year period.

The foregoing figure clearly falls short of the total estimated requirement, for Romania, of €10 billion stipulated earlier, which would be required to fully develop all the network components over a period of 15 to 20 years. However, it is noted that full development of all the network components may not be required, since the full development of certain network components may not prove to be necessary or feasible. Additionally, considering the traffic demand and its implied impact on feasibility on the one hand, and the relatively limited availability of financing sources on the other hand, developing network components that are considered marginally feasible will not necessarily involve new construction, but will be accomplished through rehabilitation of these components. It is further noted that ISPA only represents one of the possible financing instruments, and that other financing instruments from a number of multilateral agencies such as the World Bank (IBRD) and the European Investment Bank (EIB) could potentially be tapped to source funds for these projects.

Nevertheless, funds from these sources are likely to be scarce as well, purely due to the fact that a large number of projects are in competition for such funds and, consequently, the demand for these funds significantly outweighs the amounts that these institutions are able to raise. Furthermore, due to the scarcity of funds, these institutions' policies dictate that the allocation of such funds are assessed on a competitive basis, whereby measures of feasibility, such as financial and economic internal rates of return, are the governing factors.

As part of the application procedure for ISPA funds, the Romanian Government, through the Ministry of Transport, has prepared a document titled "National ISPA Strategy: Transport Sector", which has been submitted to the European Union. The document essentially presents a list of projects, which were drawn from the conclusion of a number of transportation studies that were carried out in Romania, and that the Romanian Ministry of Transport would like to have funded through ISPA. Based on the projected traffic volumes, the investment requirements and the number of nodes that will be linked, the augmentation of Corridor IV has a high priority in this document. Further, in terms of hinterland access to the land-locked economies mentioned earlier, the development of this corridor is of critical importance.

Besides developments in Romania, the ability of Constantza Port to effectively access these land-locked countries will also depend on the development of Corridor IV in these countries. Although completion of the required developments will depend on the ability and speed with which financing for these developments can be concluded, it is anticipated that such development works are not likely to be completed before 2004. Consequently, it has been concluded that effective service of transit traffic between Constantza and these countries is only likely to be possible after 2004.

The foregoing discussion focuses upon the significance of Corridor IV, as a critical deep hinterland access node, for the Port of Constantza. However, it is the Consultants' opinion that the development of Corridor VII, i.e., the Danube river, could prove to be more significant in the medium to longer term. This premise is predicated on the fact that connectivity with the Danube river is a unique competitive advantage of the Port of Constantza. The port is often referred to as the '*Rotterdam of the east*', however, the validity of this claim merits further scrutiny. The Port of Rotterdam has developed into a major hub, serving a very deep hinterland that extends all the way up to Austria, due to a variety of reasons, which are outlined hereafter.

Recognising the potential of Rotterdam as a significant hub at a very early juncture, the Government of The Netherlands has pursued a co-ordinated and purposeful strategy of exploiting the location's unique competitive advantages. The Port of Rotterdam has developed to its present status as a result of the foregoing, combined with the involvement of a strong, capable and aggressive private sector. Although the development of the port has not necessarily been devoid of problems, mitigating measures have generally been implemented well in advance of such problems eroding the port's competitive advantages. One of the most significant strategies in this regard has been the port's exploitation of the potential of the Rhine river, as a hinterland linkage with a tremendous cargo carrying capacity, combined with the cost-effectiveness that inland water transport (IWT) provides.

The Rhine river initially provided access into Germany, and during the early stage of development the port transhipped bulk cargoes for Germany's Ruhr industrial area. However, as container transport started to rapidly develop, the port's other modes of hinterland access, i.e. road and rail, started to become increasingly congested. These problems were further exacerbated by the fact that road transport in Europe is generally very competitive with rail transport, which led to increasingly larger traffic volumes entering and exiting the port by this mode, which in turn led to increased congestion on highways that were connected to the port. In order to counter these developments, the Port Authority and the Government of The Netherlands embarked on a strategy to promote the shift of cargoes from road to the river. The strategy involved the development of terminals at numerous inland locations and the introduction of scheduled, i.e., fixed-day time-definite sailings, such as those provided by mainline container carriers, barge services to these locations. This approach has resulted in a dramatic shift from the road to the river, with IWT presently accounting for between 30% to 35% of the containers handled through the port. This volume of container transport is in addition to the volumes of bulk cargo that are still transported by IWT.

Whilst recognising that a variety of factors have hampered IWT developing to its full potential, it is the Consultants opinion that the Port of Constanza should mirror the Port of Rotterdam's strategy, and exploit every opportunity to leverage the competitive advantages that it derives from its connection to the Danube river via the Danube – Black Sea Canal. However, a number of other issues still need to be resolved, and in

this regard, it is considered unfortunate that the Romanian Government's application for ISPA funds does not include requests for IWT development.

The PHARE financed study, titled "*Study to Improve Navigation on the Danube in Bulgaria and Romania*", concluded that a number of bottlenecks to navigation exist on the stretches of the Danube river that traverse the Romanian and Bulgarian territory. Consultants recognise that these navigation bottlenecks are only a part of the problem, and that the bridges destroyed during NATO's bombing of Serbia, as well as navigation bottlenecks in Hungary, need to be addressed as well. One of the conclusions the aforementioned report arrived at, was the fact that the resolution of navigation bottlenecks on the Romanian and Bulgarian stretches of the Danube river was both technically and economically feasible.

However, more critically, the report concluded that the primary reason that these navigation bottlenecks continue to exist, is the fact that the Romanian and Bulgarian Governments seem to be unable to reach agreement on how elimination of these navigation bottlenecks should be achieved. With the political climate in the Yugoslav Federation being more favourable, and with the EU having committed funds to remove the debris of destroyed bridges from the Danube in Serbia, it is considered vital that a co-ordinated approach is adopted by the Romanian, Bulgarian and Hungarian Governments, in order to resolve the navigation bottlenecks that exist in these countries as soon as possible. Such an effort should aim to ensure access throughout the year up to Austria, and be combined with the introduction of regular services between Constantza and the population centres that exist along the Danube. The foregoing is not only predicated on the inherent environmental and transportation cost advantages that IWT provides, but on the fact that, in comparison with the development of Corridor IV, the development of Corridor VII is likely to be a less costly, a less time-consuming and a more economically and environmentally feasible process.



### 5.3.3 Transport Corridor Europe Caucasus Asia (Traceca)

#### (1) Background

The Traceca Program was launched at a conference in Brussels in May 1993 which brought together trade and transport ministers from the original eight TRACECA countries (five Central Asian republics and three Caucasian republics), where it was agreed to implement a program of European Union (EU) funded technical assistance (TA) to develop a transport corridor on a west - east axis from Europe, across the Black Sea, through the Caucasus and the Caspian Sea to Central Asia.

Traceca has the following objectives:

- 1) To support the political and economic independence of the republics by enhancing their capacity to access European and World markets through alternative transport routes
- 2) To encourage further regional co-operation among the partner states
- 3) To increasingly use TRACECA as a catalyst to attract the support of International Financial Institutions (IFIs) and private investors
- 4) To link the TRACECA route with the Trans - European Networks (TENs)

To date the TRACECA program has financed 25 Technical Assistance projects (EUR 35 million) and 11 investment projects for the rehabilitation of infrastructure (EUR 47 million). The leaders of the partner states consider that the Traceca route is of strategic importance, by assuring them of an alternative transport link to Europe. Traceca stimulates competition between and with their previously exclusive route to the north, and newer alternative routes to the south. Furthermore, it is seen as complementary to their renewed commercial exchanges with the Far East, evoking the possibility of the ancient Silk Route becoming once again a major trade corridor.

The Traceca program has resulted in closer co-operation and dialogue among government authorities, which has led to agreements to keep transit fees at competitive levels, and efforts to simplify border crossing formalities. There have also been agreements to ship large volumes of cargo along the Traceca corridor, recognizing that this route is the shortest and potentially the fastest and cheapest route from Central Asia to deep-water ports linked with world markets.

The technical assistance provided through Traceca has helped to attract large investments from the International Financial Institutions as follows:

International Financial Institution	Project
European Bank for Reconstruction and Development (EBRD)	Capital projects on ports, railways and roads along the TRACECA route
World Bank (WB)	Capital projects on roads in Armenia and Georgia
Asian Development Bank (ADB)	Road and railway improvements

The east-west corridor from Central Asia through the Caucasus into the Black Sea, and their linking with the TENs and other world-wide destinations, is a physically functioning reality, carrying substantial cargo. The integration and harmonization of the regions transport regulatory environment with European and international norms is an on-going process. Traceca is the principal vector of the European, and indeed of other international agencies, for the introduction of practices to reduce non-physical barriers to the movement of goods. UN-ECE and UN-ESCAP are looking to the Traceca projects to carry their message and introduce their working practices.

## **(2) History of Traceca**

The milestones of the Traceca program are:

- 1) This conference identified a number of problems and deficiencies in the region's trade and transport systems that were translated into project proposals for the TRACECA program. An initial EUR 15 million was allocated to implement projects that were aimed to improve and develop trade and transport within the region. These projects were essential for the diversification of the traditional Moscow-centered trade and transport flows and to open up trade routes to the West.
- 2) Traceca Working Groups, 1995-1999. The program plan was developed through four sectorial working groups (Trade Facilitation, Road, Rail and Maritime Transport) with representatives from all the participating states taking an active part. These working groups were responsible for project identification and for the endorsement of projects proposed for EC financing.

During these meetings the participating states arrived at a common agreement on one specific route on which Traceca should focus its actions. For all sections of the route each delegation made recommendations in areas which required action in Trade Facilitation, Maintenance and Operations, Rehabilitation and Modernization. It was also agreed that any project outside this route should only be financed through the National EC programs or by other donors. It may be noted however that much of the focus of Traceca technical assistance is on institutional or management issues. The beneficial effects of such actions are not limited to any single route.

The concept of Traceca as a multi-modal transport route was further developed and all ongoing projects were fully evaluated. The participating states agreed that Ukraine, Moldova and Mongolia would become full beneficiaries of the Traceca program. They also reiterated the necessity of linking Traceca route to the Crete Corridors that link the Black Sea region with the TENs.

- 3) Traceca - BSEC Conference. In Tbilisi in April 1997 a joint Traceca - BSEC Conference was organized by the EU in order to examine the possibilities of linking the Traceca route with the Black Sea region and the TENs. This Ministerial Transport Conference brought

around the table all BSEC (Black Sea Economic Co-operation) countries and Newly Independent States involved in the Traceca program.

The Ministers of the 16 participating countries expressed the wish to integrate Traceca and the Black Sea countries within the Trans European Networks. It was agreed that Traceca and BSEC would co-operate closely to develop this idea by concrete actions and projects. Several countries (Bulgaria, Romania and Ukraine) used the occasion to declare their intention to join the Sarakhs Agreement concluded between Georgia, Azerbaijan, Turkmenistan and Uzbekistan, which aims at establishing a common policy on transport. The Conference resulted in the establishment of a Ministerial Committee for the development of concrete projects and also served as a platform of 16 countries for the Pan European Transport Conference in Helsinki in June 1997. As a result the Helsinki Conference identified the Black Sea Region as a Pan European Transport Area (PETRA) which will further develop the TENs to the East.

In order to give substance to the idea of the Black Sea Region as a Pan European Transport Area, the EU agreed to finance the rehabilitation of the Ro-Ro ferry terminal in the port of Ilyichevsk (Ukraine) and the construction of such a terminal in the port of Poti (Georgia). These projects (15 million euros) were implemented in 1998 and were be finalized at the beginning of 2000.

- 4) "Traceca – Restoration of the Historic Silk Route" Conference. In September 1997 there was a welcome initiative by Presidents Aliyev of Azerbaijan and Shevardnadze of Georgia who jointly proposed to host a Presidential Conference in the Caucasus in 1998, that could lead to the adoption of the Multilateral Agreement on Transport initiated within the TRACECA program. This Agreement would open the existing four-country Sarakhs Agreement to other members and further develop its dispositions. With the support of the TRACECA program, this initiative has resulted in the international Conference "TRACECA – Restoration of the Historic Silk Route" that was held on 8 September 1998 in Baku (Azerbaijan).

The important achievement of the conference was the signing of the "Basic Multilateral Agreement on International Transport for the Development of the Transport Corridor Europe-Caucasus-Asia" and its Technical Annexes on international rail and road transport, international commercial maritime navigation, customs procedures and documentation handling.

The objectives of the Basic Agreement and its Technical Annexes are as follows:

- assisting in the development of economic relations, trade and transport communication in Europe, Black Sea region, Caucasus, Caspian Sea region and Asia
- ensuring access to the world market of road, rail transport and commercial navigation
- ensuring traffic security, cargo safety and environment protection
- harmonization of transport policy and legal structure in the field of transport

- creation of equal conditions of competition for transport operations

### (3) Main projects of Traceca

The European Bank for Reconstruction and Development (EBRD) has made a number of commitments for capital projects on ports, railways and roads along the TRACECA route totaling \$300 million, and the World Bank (WB) has made commitments for new capital projects on roads in Armenia and Georgia totaling some \$40 million.

- 1) Railways. On the basis of Traceca projects the EBRD has extended loans for rehabilitation of the railways as follows:

International Financial Institution	Project
European Bank for Reconstruction and Development (EBRD)	Rehabilitation of the railways to Kazakhstan
European Bank for Reconstruction and Development (EBRD)	Rehabilitation of the railways to Uzbekistan
European Bank for Reconstruction and Development (EBRD)	Rehabilitation of the railways to Azerbaijan
European Bank for Reconstruction and Development (EBRD)	Rehabilitation of the railways to Georgia

These loans are conditional upon the restructuring of the railways. The restructuring plans have been prepared by Traceca projects. Likewise, the Japanese Overseas Economic Co-operation Fund (OECF) has shown interest in awarding a loan to the Turkmen Government for railway infrastructure rehabilitation.

- 2) Ports. One of the prime objectives of the Traceca program is to promote the maritime connections in the Caspian Sea, including network alternatives and wider competitiveness. This important part of the Traceca route has also attracted the attention of the EBRD.

International Financial Institution	Project
European Bank for Reconstruction and Development (EBRD)	Rehabilitation of the port of Turkmenbashi
European Bank for Reconstruction and Development (EBRD)	Rehabilitation of the port of Baku
European Bank for Reconstruction and Development (EBRD)	Container terminal equipment and spare parts for the Caspian Sea ferries

Investigations for possible Traceca intervention in the port of Aktau in support to \$54 million EBRD loan are underway, including re-opening of road and rail Ro-Ro services to the port. An important TRACECA technical assistance and investment package has also been provided to the port of Poti. A strategic plan for development of the port has been

prepared as well as feasibility studies for the port, the ferry and the container terminals in view of future financing by the EBRD, other IFIs or private investors and an extension has been approved for the privatization of the port. In order to attract financing from IFIs and other investors a 3.4 million euros investment project to construct the ferry terminal has been realized.

- 3) Roads. In the framework of TRACECA projects technical assistance packages have been provided:

International Financial Institution	Project
EBRD and WB	Road rehabilitation project in Armenia
WB	Road rehabilitation project in Georgia Road rehabilitation in Azerbaijan
EBRD	Rehabilitation of the Mary-Tedjen road in Turkmenistan
Asian Development Bank (ADB)	Rehabilitation of the Almaty - Bishkek road
ADB	Investment in railways in Uzbekistan and the roads sector throughout the region
Overseas Economic Co-operation Fund Japan and the Islamic Development Bank	Technical assistance project planned for 1999-2001 to provide an updated traffic database and forecasts

#### **(4) The European gauge ferry loading bridge in Georgia project**

##### **1) Present situation**

Due to the long distances involved, transport costs are high for the cargo traffic to and from the Caspian Sea region. The TRACECA route from Central Asia to deep sea shipping in the Black Sea is considerably shorter and has the potential to be faster and cheaper than the alternative routes, once the full effect of TRACECA has been felt. In the same time, the railways in the area are not yet able to offer a quality of service in terms of reliability and price that competes effectively with the road transport while border crossing delays are lengthy.

Given the existing “railway border” between the European railway gauge system (1,435 mm) and the Russian one (1,520 mm) in ports such as Poti (Georgia), Burgas (Bulgaria) and Odessa (Ukraine), the European Union is currently running in Poti port an *European gauge ferry loading bridge in Georgia* project. The project, within the TRACECA program, has an aim at facilitating the ferry traffic between these ports and the European ones, Constanta included.

##### **2) The project**

At present, all railway gauges in the former CIS countries, Georgia included, are the Russian type ones. Therefore, the only railway ferry transportation by freight wagons is

performed between Batumi (Georgia) and Ilyichevsk (Ukraine) and Varna (Bulgaria) where Russian-type gauge terminals are installed.

The project mainly consists in:

- converting the Russian gauge system of the Poti port so as to allow less time and effort consuming loading/discharging and transshipment of the cargo to/from Europe.
- Eliminating the legal and administrative discrepancies between the CIM/COTIF agreement that governs the railways using the European gauge and the OSJD cooperation agreement of those using the Russian gauge. Regarding the common specific agreement to be accepted by both sides, the European Union considers that the most suitable administration to take responsibility for the management of documentation processing, invoicing at the border between systems is the Romanian railway company (CFR).

The ferry boats most likely to be used, since the very beginning, are the two vessels now serving the Constanta –Samsun ferry line. According to the project above, the route is to be further on extended to Georgia, once the conversion of the gauge systems is completed.

This ferry line is expected to increase the lorry and wagon traffic between the port of Constanta and the Georgian and Ukrainian ports, as it will represent a cheaper transport alternative along with significant save in as distance and transport duration as compared to the actual railway route.

### **3) Conclusions - Effects of the completion of the Traceca Program on the activities in the port of Constanta**

It is important to understand the effects of the completion of the Traceca Program on the activities in the port of Constanta by dividing them into long-term and short-term effects.

The long-term effect is that the rehabilitation of the transport infrastructure over the whole Caucasus area and Central Asian countries will improve the transportation route on which the cargo exported to and imported from the European countries will go via the Black Sea without passing Russia. As a result, the cargo flow in the Black Sea is expected to increase, therefore the cargo traffic via the port of Constanta is also expected to see an important boost.

The short-term effect is that the completion of the European gauge ferry loading bridge in Georgia in the port of Poti, to be developed with a EU financial support, as part of the Traceca program, will result in the realization of the railway ferry transportation by the European gauge between Poti, Constanta and Samsun (Turkey) ports. The direct railway transport between Georgia to Europe via the Black Sea – Constanta port will become possible.

Following is a tentative list of national priority projects which may become object for further consideration for Constanta port :

- participate in tenders for contracting jobs with multinational financing or on a concession basis for the construction or upgrading of designated portions of motorways or railways along the agreed European transport corridors in the territory of Romania;
- capitalize on the advantages offered by the free zones in Constantza and along the course of the Danube;
- use of the Black Sea-Danube canal for the cost effective shipment of liquid or dry cargo downstream and upstream all the way to Rotterdam;
- develop the existing pipeline transit capability with possible extensions to the Balkan area and to the west via Hungary;
- take a stake in the accelerated privatization of Romanian refineries, petrochemical units and related industries;
- examine the economic wisdom and technical feasibility of developing new environment-friendly and export-oriented energy generating capabilities using petroleum heavy fractions for fuel;
- assist the development of Romania's considerable farming potential in relation to the projected absorption capacity of the Caucasus and Central Asia markets in particular;
- study the rationality of building a gas plant in the vicinity of Constantza in relation to the prospect of a liquefaction plant being installed on the eastern coast of the Black Sea, the transit to be serviced by LNG/LPG tankers;
- involve Romanian companies as suppliers or subcontractors in on-going and future projects in the Caucasus-Central Asia region.

## 5.4 Major Competitive Ports

The ability of Constantza Port to effectively serve the aforementioned neighbouring economies will largely be dependent on its competitive positioning with respect to other ports vying to capture a share of these countries' trade. In broad terms, the competitive position of a port is defined by the status of available facilities and by the level of service provided (both in terms of price and quality). Additionally, the competitive positioning of a port, which aims to attract transit or transshipment traffic, will be dependent upon its ability to effectively handle such trades. In other words, such a port will necessarily need to have, amongst others, top-notch harbour facilities, excellent infrastructure connectivity (road / rail / IWT / pipeline), efficient and competitive operations (both in terms of price and quality), and efficient systems and procedures geared towards processing such cargoes (customs). In light of the foregoing, it is necessary to examine the status of competing ports in the region vis-à-vis the Port of Constantza. Further, in this regard, reference is made to the earlier work carried out by the Consultants, i.e., the study for the Container Terminal at Pier IIS in Constantza, wherein the issue of competition, in the container market, has been addressed in detail.

### 5.4.1 Black Sea Ports

The following ports, which can potentially be considered competitors to the Port of Constantza, are located on the Black Sea coast:

- Bourgas and Varna (Bulgaria);
- Ilyichevsk and Odessa (Ukraine)
- Novorossiysk (Russia); and
- Poti and Batumi (Georgia).

The following provides a broad overview of cargo handling facilities at these ports, and the proposed future plans of these ports.

#### (1) Bourgas

Located on the western shores of the Black Sea, or on the eastern coast of Bulgaria, the Port of Bourgas is Bulgaria's largest port. Facilities within the port comprise of four harbours, namely the West Harbour, the East Harbour, the Merchant Harbour and the Oil Harbour. The first three harbours are located in a single area, whilst the Oil harbour is a separate location, some 20 kilometres south of the aforementioned facilities. Facilities within the Merchant Harbour comprise 25 berths, with available water depths varying from –7 to –11 metres, and the ability to handle (partly-laden) vessels up to 60,000 DWT. Similarly, the facilities in the Oil Harbour comprise three berths, with available water depths up to –13.6 metres, and the ability to handle (partly-laden) vessels up to 100,000 DWT.

The port is primarily an import gateway, with the foregoing accounting for nearly 70% of the traffic handled, whilst exports account for 30% of the traffic handled. Transit, or

transshipment, traffic is non-existent at the port, which can be attributed to the fact that the port mainly serves national needs, as well as the fact that connections, between the port and a potential deeper hinterland, are considered to be of poor quality. Hence, although the Port of Bourgas could potentially serve much of the same secondary hinterland as the Port of Constantza, this is considered unlikely in the near to medium term. Furthermore, the Port of Constantza possesses an unique advantage over the Port of Bourgas, in terms of deep hinterland access, namely its linkage to the Danube River.

Total throughput handled at the port in the recent past has amounted to approximately 20 million tonnes per annum, with crude oil imports representing 50% of this volume. Besides crude oil, other significant imports are coal and iron ore, whilst exports primarily consist of general cargoes. Following the collapse of the Soviet Union, the facilities have slowly deteriorated and are in a very poor state of upkeep, whilst most of the cargo handling equipment is considered to be beyond its economic life and inadequate for efficient operations.

The Port of Bourgas considers itself to be strategically located, since it is the first significant port of call from the Bosphorus straits. Based on this locational advantage, the port has ambitious plans to act a hub for Black Sea trades. In this regard, the port has secured funding from Japan's Overseas Economic Co-operation Fund (OECF) for the construction of a new breakwater and a bulk terminal. The implementation of this project will give rise to protected basin and land areas adjacent to the bulk terminal, which have been allocated for the construction of a container terminal. However, it is understood that although a pre-feasibility study for the container terminal has been carried out, which was funded by the United States Trade and Development Agency (USTDA), the actual funding of the container terminal is yet to be arranged. Furthermore, construction of the container terminal will only be possible once land reclamation for the bulk terminal has been completed. As a result, it is considered unlikely that the container terminal (if constructed) will be operational until sometime during the latter half of this decade, i.e., after 2005.

The port has also carried out a detailed design for the augmentation of the facilities at the Oil Harbour. The Oil Harbour can essentially be considered a captive facility, serving the needs of the Neftochim refinery, which is located adjacent to the port. The primary rationale behind the augmentation of the facilities at the oil harbour, besides the fact that the existing facilities are in need of urgent rehabilitation, is to accommodate potential increases in demand that could arise as a result of the construction of a pipeline, between Bourgas and Alexandropolis, to handle crude oil exports from the Central Asian republics. Besides the detailed design of the facilities at the Oil Harbour, a pre-feasibility study of the oil pipeline has been carried out as well, however, funding has not been secured for either project. In light of the foregoing, it is once again considered unlikely that these facilities are likely to become operational prior to 2005, at the earliest.

## **(2) Varna**

Located between the Port of Bourgas and the Port of Constantza, the Port of Varna is

Bulgaria's second port. Facilities within the port are divided between two locations, namely Varna West and Varna East. Facilities at Varna West comprise 17 berths, with a maximum design draft of –11.5 metres. Varna West primarily handles cargoes for the adjacent Devnya industrial area, and the port has handled some 2 million tonnes in the recent past. The main cargoes handled at the port are dry bulks, such as coal, coke, chemicals, cement and sugar.

Similarly, the facilities at Varna East comprise 13 berths, as well as 2 berths for passenger vessels, with available water depths varying from –7.5 to –11.5 metres. Varna East primarily handles general cargoes, and the port has handled some 1.5 million tonnes in the recent past. The main cargoes handled at the port are bagged fertilisers, containers and other general cargoes.

It is understood that Varna, much like Bourgas, also has ambitious plans to expand its facilities, primarily in order to serve the Black Sea market and trades from the Central Asian Republics. This is predicated on the premise that the port possesses facilities to handle ferry trades, and that a large proportion of traffic handled at the port comprises these trades, e.g. between Ilyichevsk and Varna. Based on such considerations, the port wishes to develop a similar trade linkage with Georgia. However, it is understood that, neither any definitive studies, nor any concrete plans, have yet been undertaken in this regard. Furthermore, the creation of facilities with the ability to compete with those at the Port of Constantza would require a significant funds, which have also yet to be secured. In light of the foregoing, Varna is not considered a competitive threat to Constantza Port.

### **(3) Ilyichevsk**

The Port of Ilyichevsk was initially developed as a satellite port of Odessa, but it now serves as an independent port covering much of the same hinterland as Odessa. Facilities within the port are divided between five distinct areas, with the demarcation of these areas primarily based upon the characteristics of commodities handled. Hence, there is a bulk area, a container area, a general cargo area, an additional bulk area for iron ore and coal and a road / railway ferry area. The port has 30 berths, with maximum design drafts up to –13 metres.

The port serves to handle the industrial and commercial needs of the Ukraine, a vast, and populous, hinterland. Furthermore, the port's secondary hinterland could be considered to potentially extend all the way north up to Moscow, although it faces significant competition from the Port of Novorossyisk in this regard. Cargoes handled at the port primarily consist of raw material requirement for heavy industries, finished metal products, chemicals, general cargoes and containers. Furthermore, as indicated earlier, a ferry service between the port and Varna also accounts for a fair amount of traffic.

As far as competition with the Port of Constantza is concerned, the Port of Ilyichevsk is not considered a competitive threat. This is predicated on the premise that the port serves a hinterland that is distinctly different than the hinterland served by the Port of Constantza.

The orientation of the port's hinterland access is towards its north, whilst the orientation of the Port of Constantza's hinterland is towards its west. In other words, the two ports' hinterlands are not deemed to be overlapping, and therefore the ports are not considered to be in competition with each other.

#### **(4) Odessa**

Facilities at the Port of Odessa are located within a maritime basin that is protected by three breakwaters, and comprise a total of 39 berths, with alongside water depths varying from 7 to 11.5 metres. Seven of these berths are dedicated to the handling of crude oil and petroleum products, and approximately 50% of the port's throughput comprises liquid bulk cargoes. Additionally, the port also has dedicated facilities for the handling of containers, RO-RO traffic, dry bulk and break bulk cargoes. Main cargoes handled at the port have included metals, timber, grains, foodstuffs and sugar. However, the port's main problem is its hinterland access, with road and rail access being limited due to the port's location within proximity of the city. These constraints were one of the main reasons that the Port of Ilyichevsk was developed as a satellite port of the Port of Odessa.

Since the port is located within close proximity of the Port of Ilyichevsk, similar competitive considerations as outlined earlier for this port are deemed to apply to the Port of Odessa. In other words, the Port of Odessa's hinterland and the Port of Constantza's hinterland do not overlap, and hence the level of competition between these ports is likely to be minimal.

However, as far as crude oil trades from the Caspian region are concerned, the Port of Odessa is considered a strong competitor to the Port of Constantza. The construction of a pipeline between Odessa and Brody in the Ukraine is understood to be currently underway, and is nearly 80% completed. At Brody, this pipeline will connect with the existing Druzhba pipeline system from Russia, which extends into Poland, Hungary and the Czech and Slovak Republics. More significantly, this pipeline could pose a serious competitive threat to the CTPL/SEEL pipeline project, since extension of the Druzhba pipeline system by approximately 50 kilometres, from Bratislava in the Slovak Republic to Schwechat in Austria, would provide a link to Western Europe through the Trans-Alpine pipeline system. Since connecting with the Trans-Alpine pipeline system is the main rationale behind the proposed Constantza – Trieste pipeline project, the aforementioned option of extending the Druzhba pipeline system could seriously jeopardise the CTPL/SEEL project.

#### **(5) Novorossyisk**

The Port of Novorossyisk is Russia's main maritime gateway in the Black Sea basin, providing the shortest access route, for the more populous regions of Russia, i.e., the western areas, and the Central Asian republics, to eastern markets, i.e., through the Mediterranean basin, the Suez Canal and beyond. The port is well connected to Russia's neighbours, by means of the railway network of the Former Soviet Union. The port can be subdivided into five areas, namely the eastern, central and western areas, the Shestharis area

and the passenger terminal.

The eastern area has six berths, with alongside water depths up to 13 metres. The area primarily handles bulk cargoes, such as cement exports, from the 'Proletarii' plant, as well as scrap iron exports. The central area comprises seven berths, with alongside water depths up to 12 metres. This area is understood to be relatively modern, and is specially designed to handle bulk sugar shipments. The western area comprises eight berths, with alongside water depths of up to 13.5 metres. Facilities in this area are primarily intended to handle general cargo and break-bulk, such as foodstuffs, grains, perishables and manufactured products, as well as containers.

Although the foregoing represent a fair proportion of the total traffic, of approximately 40 million tonnes, handled by the port, the most significant facilities within the port are the crude oil handling facilities located in the Shestharis area. The crude oil terminal comprises seven berths, with the ability to load and discharge tankers up to a size of 250,000 DWT. The terminal is well connected with the pipeline system of the former Soviet Union, and consequently serves as a major export outlet for these trades.

More importantly, the port is soon to be connected to the CPC (Caspian Pipeline Consortium) pipeline, which is expected to come online in mid-2001. The initial capacity of the pipeline will be 28 million tonnes per annum (mtpa), increasing progressively to 65 mtpa by 2014. CPC has also invested in new marine loading facilities, which include a deep-water single-buoy-mooring (SBM) system, capable of simultaneously loading two 150,000 DWT tankers, as well as a new tank farm and pumping stations.

There has been a significant amount of debate and discussion regarding the possible transport routes for oil from the Caspian region. It has been suggested that the wide variety of pipeline projects, which are being proposed to transport oil from the Caspian Basin, are not in competition with one another. However, the single most important factor governing the success of a pipeline project is that whichever project is the first to market, generally wins the competitive battle over other projects. Based on the foregoing argument, and the quality and capacity of CPC's project facilities, it is difficult to imagine a proposed pipeline from Constantza (CTPL/SEEL) posing a credible competitive threat to the CPC project. The perceived competitive disadvantages of the CTPL/SEEL are further exacerbated by the fact that the pipeline between Baku and Supsa has already been completed, whilst the pipeline between Odessa and Brody is 80% complete. Additionally, the pipeline project between Baku and Ceyhan is also at a more advanced stage of development than CTPL/SEEL project. These projects will provide a handling capacity for crude oil in excess of 50 million tonnes per annum, which equates to approximately 1 million barrels per day (bpd). If the Baku – Ceyhan pipeline is completed, and the proposed capacity expansions of the CPC project are factored in, the installed handling capacity for crude oil in the Black Sea basin will be in excess of approximately 2.5 million bpd, which is more than adequate in the medium to longer term. Under such a scenario, the Port of Constantza will face intense competition from these facilities.

## **(6) Poti, Batumi and Supsa**

These three ports are located on the eastern shores of the Black Sea, in Georgia. The Ports of Poti and Batumi are both relatively minor ports, handling a variety of cargoes, whilst facilities at Supsa essentially comprise a deep-water single-buoy-mooring (SBM) system.

Facilities at the Port of Poti comprise 17 berths, with alongside water depths varying from 5 to 11.2 metres. Since the port is located within proximity of the Rioni river, it suffers somewhat from draft limitations due to siltation and regular maintenance dredging of the harbour is required. The port primarily handles a variety of dry bulk cargoes, such as coal, ore and grain. Additionally, the port is linked by ferry services with Varna and Bourgas. The port's ferry and RO-RO terminals have attracted much attention from a number of bilateral and multilateral aid programmes, particularly since these are seen as a logical conduit for trades from the landlocked economies of Central Asia.

Facilities at the Port of Batumi comprise 11 berths, however, the port primarily handles crude oil and petroleum products. Other cargoes handled by the port are primarily general cargoes and bulks, such as chemicals and grain. Although the port was initially viewed as one of the logical loading points for crude oil from the Caspian region, both the pipeline from Baku, as well as the port facilities are relatively outdated, and were thus considered to be inadequate to meet market demands. This led to the construction of a new pipeline from Baku to Supsa, bypassing Azerbaijan. The pipeline project was recently completed, and facilities include a new tank farm and deep-water single-buoy-mooring (SBM) system at Supsa. It is understood that the first crude oil tanker was recently loaded at the SBM, and that the SBM can handle vessels with a capacity of up to 150,000 DWT.

The ports of Poti and Batumi are not considered competitors to the Port of Constantza, however, they could be viewed as potential strategic partners. The foregoing is predicated on the premise that, as the Central Asian economies start achieving rapid economic growth driven by oil exports, increases in incomes and expenditure will lead to increases in imports. As the European Union's TRACECA programme has already recognised, the expansion of these countries' trade, and the resulting extension of the transport network, is best achieved by ferry services across the Black Sea. The foregoing is underlined by the existence of ferry services linking Bulgaria, however, the Port of Constantza is considered to be better positioned to fully exploit these opportunities. As far as Supsa is concerned, it possesses an inherent competitive advantage over the Port of Constantza, in terms of already being connected by a pipeline. Consequently, based upon similar considerations as outlined earlier for the Ports of Novorossiysk and Odessa, it is anticipated that the Port of Constantza will face considerable competition from the Port of Supsa.

### **5.4.2 Northern Adriatic Ports**

The following ports, which can potentially be considered competitors to the Port of Constantza, are located in the Northern Adriatic:

- Venice and Trieste (Italy)
- Koper (Slovenia)

The following provides an overview of container handling activities at these ports during the recent past and the proposed future plans of these ports.

### **(1) Venice**

Facilities at the Port of Venice are divided between the Commercial, Industrial and Oil Ports. The latter two facilities, i.e., the Industrial and Oil Port, are essentially dedicated facilities, serving captive users, whilst the commercial port is understood to be a full-service port, serving a variety of customers.

The Industrial Port handled approximately 5.4 million tonnes per annum during 1997 and 1998. Cargoes handled at the port are understood to include dry bulk raw material inputs, and break bulk export products. The Oil Port handled approximately 10.6 million tonnes of cargo during 1997, and 11.9 million tonnes of cargo during 1998. The Commercial Port is located between the northern and southern access channels of the industrial port. Facilities within the Commercial Port are divided between a number of specialised private terminal operators. The Commercial Port handled approximately 8.2 million tonnes of cargo during 1997, and approximately 9.2 million tonnes during 1998. Commodities handled at the Commercial Port included cereals, meal products, coal, scrap iron, steel and metal products, other dry bulks and break bulk and general cargoes. Additionally, the Commercial Port also handles RO-RO traffic, containers and short-sea shipping cargoes. Total throughput handled by the port increased from approximately 24.1 million tonnes in 1997 to approximately 26.5 million tonnes in 1998.

The Port of Venice has extensive improvement and expansion programmes, with investments in excess of €125 million, underway. Projects identified include the following:

- rationalisation and improvement of port rail and road connections;
- restructuring of the existing commercial port by transferring activities to the Marghera commercial port area;
- expansion of the Marghera commercial port area by means of land acquisition; and
- maintenance dredging works to the port's access channel.

The port boasts excellent hinterland connections, both road as well as rail, and consequently a proportion of the cargoes handled by the port are transit cargoes for Central Europe.

### **(2) Trieste**

Facilities at the Port of Trieste are divided between 20 different terminals. These facilities include distinct terminals for handling, amongst others, crude oil, petroleum products, coal,

steel, cereals, timber, cement, fruits, livestock and frozen products. The facilities further include a ferry/RO-RO terminal and one of the most modern container terminals in the Northern Adriatic.

The cargo throughput handled by the port during 1999 amounted to approximately 44.8 million tonnes. However, it is noted that over 33 million tonnes, nearly three-quarters of the volume handled, was crude oil, destined for Central Europe, by means of the Trans-Alpine pipeline. Ferry, RO-RO and Container traffic accounted for nearly 14% of the port's throughput, whilst coal traffic represented nearly 6% of the port's throughput. The port's facilities provide for water depths of up to –18 metres at the container, coal and crude oil terminals. Additionally, the port boasts excellent access to Central and Eastern Europe, as well as southern parts of Germany, by means of both road and rail connections. In terms of railway connections, Trieste is not only the biggest port in Southern Europe, with over 75 kilometres of track serving its terminals, it also has excellent scheduled services to and from Central and Eastern Europe, by means of block-shuttle trains. Short-sea shipping, i.e., RO-RO and ferry traffic, is an area that has demonstrated dramatic growth in the recent past, owing largely due to the situation in the Yugoslav Federation.

These factors, combined with its excellent location, have led the port to embark on an ambitious strategy of expanding its market share of Central and Eastern Europe. The port also has plans to extend its reach as far north as Hamburg, and is involved in the development of land-bridge services for containers between Trieste and Rostock, in Germany. This service could considerably reduce the transit time for containers to and from South East Asia. Additionally, the port is also examining the possibility of creating a joint operating entity with the Port of Koper, in order to exploit the complementary nature of each others facilities and hinterlands. This strategy is likely to get a significant boost in the near future, once Slovenia becomes a member of the EU.

In light of the foregoing, and based upon the discussion that is presented in the following Section 5.4.3, the Port of Trieste is considered to pose a serious competitive threat to the Port of Constantza, with regards to serving the land-locked countries of Central and Eastern Europe.

### **5.4.3 Competitive and Cost Considerations of Overland Transport**

Clearly, there is a substantial market beyond Romania's boundaries which shipping lines could choose to serve through the Port of Constantza. Particularly with regard to the Black Sea / Central Asia, the Port of Constantza appears to be ahead of the competition. In the faster growing market of Central Europe, however, multiple outlets are already available. Competing ports from the Baltic, the Atlantic, the Mediterranean and the Black Sea all aspire to capture a substantial proportion of this trade.

Table 5.4.1 compares road and rail transport distances between different ports and selected Central European capitals. Also shown are distances by Inland Water Transport (IWT). As presented earlier, IWT has proven itself to be a highly successful mode of transport on

the Rhine and access via the Danube is a unique advantage of the Port of Constantza.

**Table 5.4.1 Distances Between Ports and Central European Capitals**

		(kilometres)			
		<b>Prague</b>	<b>Vienna</b>	<b>Bratislava</b>	<b>Budapest</b>
<b>Constantza</b>	Road	1460	1060	1030	880
	Rail	1714	1370	1313	1098
	IWT	---	1690	1630	1410
<b>Trieste</b>	Road	840	500	530	680
	Rail	1270	925	867	652
	IWT	---	---	---	---
<b>Hamburg</b>	Road	530	970	1000	1150
	Rail	698	754	1101	1316
	IWT	---	---	---	---
<b>Rotterdam</b>	Road	820	1110	1140	1290
	Rail	1110	1404	1891	1676
	IWT	---	1540	1600	1830

Source: Consultants' analysis

The figures, depicted in bold type and shaded, indicate the shortest distance for each route and mode. As already discussed, Trieste holds a significant advantage by road for most of the capitals shown. Due to circuitous rail routings between Trieste and Vienna, Hamburg captures the advantage for this mode and route.

Table 5.4.2 presents the transport costs adopted for future planning in the recently completed Romania General Transport Master Plan. Costs for the road, rail and IWT modes have been identified in Euros per 1000 tonne / kilometres.

**Table 5.4.2 Mode Specific User Costs, Freight Transport**

(Euro / 1000 tonnes / km, 1995 prices)

Year	<b>Rail</b>	<b>Road</b>	<b>Inland Water Transport (IWT)</b>
1995	17.60	24.00	12.80
2005	20.40	27.90	14.90
2015	28.40	38.80	20.70

Source: Romania General Transport Master Plan, MOT Bucharest and European Commission DG IA, Final Report, June 1999

In Table 5.4.3 the distances and costs of the preceding two tables are combined. Given the assumptions used, overland routing via Trieste continues to exhibit an advantage for all destinations other than Prague, where Hamburg holds an edge.

**Table 5.4.3 Transport Costs Between Ports and Central European Capitals**  
(Euro / Tonne, Year 2005)

		<b>Prague</b>	<b>Vienna</b>	<b>Bratislava</b>	<b>Budapest</b>
<b>Constantza</b>	Road	40.73	29.55	28.68	24.44
	Rail	34.97	27.95	26.79	22.40
	IWT	---	25.17	24.26	20.96
<b>Trieste</b>	Road	23.44	13.89	14.76	19.00
	Rail	25.91	18.87	17.69	13.30
	IWT	---	---	---	---
<b>Hamburg</b>	Road	14.79	26.98	27.84	32.09
	Rail	14.24	15.38	22.46	26.85
	IWT	---	---	---	---
<b>Rotterdam</b>	Road	22.88	30.86	31.72	35.96
	Rail	22.64	28.64	38.58	34.19
	IWT	---	22.99	23.90	27.19

Source: Analysis based on Tables 4.3 and 4.4

Regarding Table 5.4.3, note should be made of three important factors:

First, transport costs between port and hinterland, whilst important indicators, do not guarantee trade flows. Routing selections ultimately depend upon a combination of components including varieties and levels of service (shipping and otherwise), time and total door-to-door costs.

Second, the base numbers in Table 5.4.2 by the Ministry of Transport reflect the situation for Romania. Although it is generally anticipated that many elements of transport costs will converge over time, at the moment Romania may hold certain transport cost advantages in one or more modes over competitors paying western European rates.

Finally, the ratio between road and IWT in the adopted figures is much narrower than is usually attributed to these two modes. With planning already underway for enhanced capacity on the Danube, prospects for IWT should not be discounted.

As a result, whilst the Port of Constantza cannot realistically claim Central Europe as a 'captive' market, neither can any of the other ports. Rather, the region represents an economic battleground for multiple competing ports. Hence, although this region could give rise to some opportunities for the Port of Constantza, it is considered a market area where the port can anticipate the strongest competitive challenge.

In conclusion, Consultants believe that the Central European and Black Sea / Central Asian economies represent, to varying degrees, potential users for a modern port facilities at the Port of Constantza. This conclusion is predicated:

- on the prospects for growing global trade, which will demand access to modern and efficient port facilities;

- on the Port of Constantza's strategic position relative to both markets;
- on the gradually improving connective infrastructure (including the Danube River system) which will link Central Europe with Port of Constantza's; and
- on the already existing advantage in terms of time for development, which Port of Constantza holds by virtue of having a number of projects funded and underway.