

ISPA Measure No.:

*2000/BG/16/P/PT/002*

**FINANCING MEMORANDUM  
of**

**Agreed between the European Commission and  
the Republic of *Bulgaria***

Concerning the grant of assistance from the **Instrument for Structural Policies for  
Pre-Accession** to the following measure

*Sofia Airport Reconstruction, Development and Extension:  
Lot B1 New Terminal and Related Infrastructure*

Located in *Bulgaria*

*C(2000) .../...*

## **FINANCING MEMORANDUM**

The European Commission, hereinafter referred to as "THE COMMISSION", acting for and on behalf of the European Community, hereinafter referred to as "THE COMMUNITY" represented by the Commissioner for Regional Policy, Mr. Michel Barnier, for the Commission

on the one part, and

The Government of Bulgaria, hereinafter referred to as "THE BENEFICIARY", represented by

on the other part,

HAVE AGREED AS FOLLOWS:

### **ARTICLE 1**

The measure referred to in Article 2 below shall be implemented and financed out of the budgetary resources of the Community in accordance with the provisions set out in this Memorandum. The measure referred to in Article 2 below shall be implemented in line with the General Conditions annexed to the Framework Agreement signed between the Commission and the Beneficiary and supplemented by the terms of this Memorandum and the provisions annexed hereto.

### **ARTICLE 2**

#### **IDENTIFICATION OF THE MEASURE**

The Instrument for Structural Policies for Pre-accession shall contribute, by way of a grant, towards the financing of the following measure as described in Annex I:

Measure number: *2000/BG/16/P/PT/002*

Title: *Sofia Airport Reconstruction, Development and Extension: Lot B1 – New Terminal and Related Infrastructure*

Duration: *Start date: The date of signature of the financing memorandum by the Commission*  
*End date: Until 31 December 2004*

Location: Sofia, Bulgaria

Group: NA

### ARTICLE 3

#### COMMITMENT

- (1) The maximum eligible public or equivalent expenditure which may be taken into account for the purpose of calculating assistance shall be € 135,135,135;
- (2) The rate of Community assistance granted to the measure is fixed at 37 % of total public or equivalent expenditure as indicated in the financing plan in Annex II.
- (3) The maximum amount of assistance from the Instrument for Structural Policies for Pre-accession is fixed at € 50,000,000.
- (4) An amount of € 28,000,000 is committed from the 2000 budget under budgetary line B7-020. Commitments in respect of subsequent instalments shall be based on the initial or revised financing plan for the measure, subject to the state of implementation of the measure and to budgetary availability.

### ARTICLE 4

#### PAYMENTS

- (1) Community assistance shall cover payments on the measure for which legally binding commitments have been made in the beneficiary and for which the requisite finance has been specifically allocated. These payments must relate to the works described in Annex I.
- (2) Payments made before *the date of signature of the financing memorandum by the Commission* shall not be eligible for assistance from the Instrument for Structural Policies for Pre-accession.
- (3) The measure described in Annex I and payments by the final beneficiaries concerning the measure shall be completed no later than *31 December 2004*. The report required for the payment of the final balance should be submitted not later than 6 months after this date.
- (4) The advance payment is fixed at € 10,000,000 which shall be transferred as follows:
  - An amount of € 5,000,000 is paid out after signature of this memorandum by the beneficiary;
  - The remainder is paid out following the signing of the first substantial works contract to be agreed between the beneficiary and the Commission after submission of the procurement plan as specified in Article 8 (3) hereunder.
- (5) In accordance with Annex III.1, Section III, point 5, the Commission will accept for this measure a total amount of advance and intermediate payments of 90 % of the total assistance granted.

## **ARTICLE 5**

### **RESPECT OF COMMUNITY LAW AND POLICIES**

The measure shall be carried out in compliance with the relevant provisions set out in the Europe Agreements and shall contribute to the achievement of Community policies, in particular those concerning transport and trans-European networks.

## **ARTICLE 6**

### **INTELLECTUAL PROPERTY**

The beneficiary and the authority responsible for implementation mentioned in Annex I point 3 shall ensure that they acquire all necessary intellectual property rights to studies, drawings, plans, publicity and other material made in conjunction with planning, implementation, monitoring and evaluation of the project. They shall guarantee that the Commission, or any body or person delegated by the Commission shall have access and the right to use such material. The Commission will only use such material for its own purpose.

## **ARTICLE 7**

### **PERMITS AND AUTHORISATIONS**

Any type of permits and or authorisations required for the implementation of the measure must be provided by the competent authorities of the beneficiary in due time and in accordance with national law.

## **ARTICLE 8**

### **SPECIFIC CONDITIONS RELATED TO THE MEASURE**

Without prejudice to the general provisions specified in Annex III, the Community grant for the measure is subject to the following conditions:

1. **Condition on the assumptions and the status of the assets:**

The Commission reserves the right to revise the amount of the assistance from ISPA set out in Article 3 if, within a period of up to five years from the date of the completion of works, the operating conditions (traffic, tariffs, revenues, etc.) vary

significantly relative to the original assumptions made in determining the level of the grant and/or there is a substantial modification:

- (a) affecting the nature of the operation or its implementing conditions, or giving to a private or public body an undue advantage; and
- (b) resulting either from a change in the nature of the ownership of any part of the financed infrastructure, or a cessation or material change in the operating arrangements.

The beneficiary country shall inform the Commission of any such change, and shall seek the ex-ante agreement of the Commission to these changes.

2. Condition on viability

The Community grant for the measure is subject to the authorities concerned making available sufficient resources in order to ensure the effective operation and maintenance of the assets.

3. Conditions relating to the second instalment of the advance payment

- (a) An Environmental Impact Assessment (EIA) based on the detailed design for the Sofia Airport Reconstruction, Development and Extension project must be undertaken for each sub-project, including the new runway, in line with all legal requirements before the signature of the main works contract(s) for the project. Payment of the second part of the ISPA advance will be conditional on this EIA procedure having been completed, including public consultations and a final statement from the competent environmental authorities.
- (b) The second instalment of the advance payment is conditional on the presentation by the beneficiary of a procurement plan, which has to be agreed by the Commission.

4. There should be no discrimination between airlines and other operators as regards the charges and fees imposed by the airport authorities (the Commission will require evidence of the airport's charging policy and its application before making intermediate payments of grant).

## **ARTICLE 9**

The implementation provisions described in the Annexes to this financing memorandum form an integral part of it.

Non-compliance with the conditions and implementation provisions shall be dealt with by the Commission according to the procedure stipulated in Annex III.1. Section VIII.

## **ARTICLE 10**

The authentic text of this financing memorandum is the present document as signed hereunder.

Done at **Sofia**  
Date

for THE RECIPIENT

Mr./Mrs. name  
Title and  
Function  
Institution

Done at Brussels  
Date

for THE COMMUNITY

Mr. M. Barnier  
Commissioner

## List of Annexes

- Annex I           - Description of measure  
                  - Table A Regional Airport Charges for B737-400  
                  - Masterplan 2018  
                  - Landuse plan 2018+
- Annex II           Financing plan
- Annex III
- Annex III.1    ISPA Financial Implementation provisions.
- Annex III.2    Provisions governing eligibility of expenditure for measures assisted by ISPA.
- Annex III.3    Model for Payment Claims, for reporting on financial and physical progress and request for modification.
- Annex III.4    Agreement on minimum requirements for financial control applicable to ISPA assisted measures.
- Annex III.5    Agreement with respect to irregularities and recovery of sums wrongly received under ISPA.
- Annex III.6    Information and Publicity requirements.

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**DESCRIPTION OF MEASURE****Summary**

N° 2000/BG/16/P/PT/002

**1. Measure title**

Sofia Airport Reconstruction, Development and Extension: Lot B1 – New Terminal and Related Infrastructure

**2. Authority making the application** (National ISPA Co-ordinator)

2.1. Name: Ministry of Regional Development and Public Works, ISPA Task Force

2.2. Address: 6 Sveta Nedelia Sq., 1000 Sofia, Bulgaria

E-mail: pharecbc@mail.bol.bg

**3. Authority responsible for implementation** (as defined at Section II (2) of Annex III.2)

3.1. Name: Ministry of Transport and Communications

3.2. Address: 9, V. Levski Str., 1600 Sofia, Bulgaria

E-mail: dzoev@mt.government.bg

**4. Final beneficiary** (in case it is a different body from the authority mentioned under 3)

4.1. Name: Sofia Airport EAD

4.2. Address: 1, Christophor Columb, 1540 Sofia, Bulgaria

E-mail: piu@sofia-airport.bg

**5. Location**

5.1. Beneficiary country: Bulgaria

5.2. Region: Central region, Sofia

**6. The Project****6.1 Overview**

The project presented for ISPA financing concerns the construction of a new passenger terminal and related infrastructure (aprons, taxiways, parking areas and access road) for the airport of Sofia, Bulgaria. It forms part of a wider project which includes the extension and realignment of the runway to cater for larger aircraft and to reduce noise disturbance to the residents of Sofia. The airport is Bulgaria's principal entry point for



businessmen and tourists and is the only airport in the country with year-round scheduled international flights.

In 1999 Sofia airport catered for total passenger traffic of around 1.2 million, of which 92% was international. Traffic peaked at 2.4 million passengers p.a. in the late 1980s but subsequently fell sharply during the transition period in common with experience in other Central and Eastern European countries (CEECs). Traffic has more recently been affected by the recession in the Bulgarian economy but is expected to grow in line with general economic recovery. Forecasts used for planning purposes are in line with IATA projections in Europe.

The present facilities at Sofia airport date from the 1940s and, although they have been refurbished on several occasions, they are now obsolete and provide a very poor level of service and comfort to passengers and operators. Inadequate space leads to congestion at peak periods and inefficient operating conditions. The new terminal will be built to modern international standards with a design throughput of 2.6 million passengers (2000 at peak hours). It is to be located at a short distance from the existing terminal to minimize disturbance during construction.

The project is of high priority within the Bulgarian Government's transport strategy and has recently been included in the list of « quick start » projects at the Regional Funding Conference for South East Europe organized by the Commission and World Bank in association with the Special Co-ordinator of the Stability Pact. Reconstruction of the airport infrastructure is in line with Community policy for the development of Pan-European transport networks: Sofia is identified as a nodal point in this network in the TINA exercise.

The project will allow the airport to cater for the growth in air traffic expected once the reform and restructuring of the Bulgarian economy takes full effect. It will help the Bulgarian Government to meet its obligations in the Accession Partnership and National Programme for the Adoption of the Acquis, regarding aviation safety, security, competition, and customs and border controls. Other important objectives are to assist the Bulgarian government to respond to the air transport Stage I measures set out in the White paper on « Preparation of the Associated Countries of Central and Eastern Europe for Integration into the Internal market of the Union », and to the specific comments concerning aviation safety and security contained in the « European Commission Opinion on Bulgarian Accession ».

The total cost of the terminal reconstruction and related infrastructure (Lot B1) is currently estimated at Euro 148.8 million. It is proposed to be financed by means of an EIB loan (Euro 60.0 million), ISPA grant (Euro 50.0 million) and national Bulgarian contribution (Euro 38.8 million). The runway extension and realignment forms a separate package (Lot B2) costing around Euro 64.3 million to be financed by a loan from the Kuwait Fund (KFAED) and national contribution. The overall cost of the project including both main components – new terminal and new runway - is therefore of the order of Euro 213 million.

## 6.2 Background

### 6.2.1 Location and traffic

Located 5 Kms Northeast of the city centre, Sofia Airport is the national airport of the Republic of Bulgaria. It provides the main air access point between Bulgaria and the rest of Europe, North America, Africa, and Asia, handling both international and domestic scheduled passenger flights as well as passenger and cargo charter flights. It is the home base of Balkan Air, the national carrier, and of Hemos Air, a Bulgarian regional carrier.

Sofia Airport handled 1,143,841 international passengers and 92,769 domestic passengers in 1999.

**Table 1: Air traffic at Sofia and selected CEEC airports - 1999**

Airport	Total passengers	Aircraft movements	Cargo
Sofia	1,236,610	25,178	12,378
Bucharest	1,678,164	27,776	12,188
Budapest	4,325,472	76,679	36,365
Prague	4,822,763	89,615	29,802
Warsaw	3,997,531	83,116	45,336

*Source: Airports Council International*

Traffic at Sofia Airport peaked at 2.4 million passengers in 1988, of which half was domestic. As in other CEECs, domestic traffic in particular collapsed following the transition period as a result of removal of subsidies and adverse economic conditions. There has been some stabilisation subsequently although traffic was again affected by recession in the late 1990s.

Traffic levels at Sofia are below those that might be expected when compared with similar sized cities in the EU. With the more recent recovery of the Bulgarian economy and the effects of economic reform beginning to be felt it is anticipated that traffic growth will revert to more normal levels - although probably still below that experienced in some other CEECs.

### 6.2.2 Present conditions

The present infrastructure and buildings of the airport are badly run down. This makes it difficult to attract additional carriers, introduce new routes and develop traffic. The passenger terminal has outdated, limited facilities and capacity. As a consequence, it is not possible to provide the levels of comfort, service or handling efficiency expected of a modern European airport. Effective safety, security, border control and customs functions are also made difficult by the poor condition of facilities. The standards and conditions of both passenger and cargo terminals fall below the recommendations of international civil aviation organizations. Access roads and car parking facilities are also in poor condition and are inadequate to meet even the present reduced levels of traffic.

Runway and apron conditions at the airport are sub-standard. The present runway length (2800 metres), surfacing and apron capacity are all limitations to future growth. The shape, area and surfacing of the present aprons also prevent effective grouping of operating, long-term parking and technical/maintenance stands.

### **6.2.3 Master Plan, feasibility studies, review**

In response to the above conditions, the Government of Bulgaria has proposed to reconstruct and modernise the present airport facilities to meet current and future traffic demands.

To this end a “*Master Plan for Reconstruction, Development and Extension of Sofia Airport,*” covering a projected period of 10 to 15 years, was prepared by Transproject Ltd, and adopted by the Ministry of Transport in 1995. Three independent feasibility studies were carried out in 1996 to assess the viability of the Master Plan and to determine the financing options. They were:

- Sir Alexander Gibb & Partners Ltd, December 1996
- Sir William Halcrow & Partners Ltd, September 1996
- Team of Bulgarian consultants, November 1996

In addition, « *An Assessment of the Environmental Impact of the Master Plan for the Reconstruction, Development and Extension of Sofia Airport* » was conducted and subjected to review by a Public Enquiry in August 1996. Following this the Ministry of Environment approved the Master Plan in September 1996. The project has so far passed through all endorsement procedures required by Bulgarian legislation and is ready for implementation.

In September 1997 a loan agreement was signed between the Government of Bulgaria and the European Investment Bank (EIB) for funding the construction of a new passenger terminal and associated infrastructure. The sum approved was Euro 60m.

In June 1998 a loan agreement was signed between the Government of Bulgaria and the Kuwait Fund for Arab Economic Development (KFAED) for financing a new runway system. The sum approved was Euro 39m.

In accordance with the requirement of the agreement with the EIB, a review of the airport Master Plan was carried out by Netherlands Airport Consultants (NACO) B.V. The following documents of this study were produced:

- Sofia Airport, Master Plan Review and Land Use Plan, NACO, January 1999
- Sofia Airport, Passenger Terminal Concept, NACO, 1999

The Master Plan review was approved by the EIB and by the Bulgarian Ministries of Transport and Regional Development.

In performance of the EIB loan agreement two contracts for technical assistance have been concluded (financed under the PHARE programme):

- TA for Airport Operational Management – with Aer Rianta International (Euro 2.66 million)
- TA for Project Management and Design – with NACO B.V. (Euro 4.93 million)

The preliminary design phase for the terminal and related infrastructure, undertaken by NACO B.V. was started in November 1999 and completed in March 2000. Significant modifications have been made to the original plans during a series of discussions, including downsizing of the original proposed development scale and reduction of the estimated December 1999 costing. Following a meeting chaired by the EIB in April, further adjustments have been made to reduce costs by, for example, changing the location of the car park and reducing the number of planned car-parking spaces from 1600 to 800.

Work on the detailed design and tender documentation has begun and will be completed by September 2000.

#### **6.2.4 Sofia Airport status and charges**

Sofia Airport EAD has been a joint stock company with a single owner (the Bulgarian State) since 31/01/1996.

Airport charges and air traffic service fees are fixed by the Government. They consist of landing charges, aircraft parking charges, passenger departure tax and cargo handling charges. Overall, charges are somewhat below the European average according to a recent study by Cranfield University<sup>1</sup> (e.g. 83% of the average in the case of a B737-400). A comparison with other airports in the region based on a typical aircraft is to be found in Annex Table A.

### **6.3 Objectives**

The overall objective of the project is to develop Sofia Airport to modern international standards in order to cater for expected growth of air traffic as the Bulgarian economy integrates with that of the EU. More specifically, the project is aimed at:

- replacing the existing obsolete airport infrastructure with facilities that correspond with the recommendations of the International Civil Aviation Organization (ICAO);
- ensuring capacity is available to handle 2.0 million passengers by 2010 (1 500 at a peak hour) rising to 2.6 million passengers by 2018 ( 2 000 at a peak hour);
- introducing levels of comfort, commercial services and handling efficiency expected of a modern European airport;

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<sup>1</sup> “User Costs at Airports in Europe, South East Asia and the USA 1997-98, Cranfield College of Aeronautics, Cranfield University, February 1998.

- introducing effective safety, security, border control and customs functions as expected at the time when Bulgaria becomes a member of EU;
- helping to meet the objectives of the NPAA and Accession Partnership;
- promoting the development of Pan-European air transport links between Bulgaria and the EU and other candidate countries;
- responding to the air transport Stage I measures set out in the White Paper «Preparation of the Associated Countries of Central and Eastern Europe for Integration into the Internal Market of the Union »;
- responding to the specific comments concerning aviation safety and security in the «European Commission Opinion on Bulgarian Accession » .

Subsidiary objectives include:

- allowing for the operation of multiple ground handling companies thus opening of the market to competition (not possible in existing terminal because of design and space restrictions);
- permitting the introduction of 100% x-ray screening of passenger baggage in response to the obligation for all EU airports to be so equipped by 2002;
- increasing the possibilities for introducing additional commercial activities in the airport.

#### **6.4 Description**

The Sofia Airport reconstruction and development project has been divided into two Lots for financial and contracting purposes:

##### **Lot B1 - Construction of a New Passenger Terminal and related infrastructure**

New passenger terminal  
 New aircraft parking aprons  
 New taxiways and taxi-lanes  
 Access road  
 Car parking  
 Related works & equipment

##### **Lot B2 - Construction of a New Runway System**

New runway  
 Runway extension and resurfacing  
 Additional taxiways  
 Related works & equipment

The application for ISPA assistance relates to **Lot B1 only** (new terminal and related infrastructure) although for economic and financial purposes it has to be seen in the context of the overall airport development project.

The following table gives a more detailed breakdown of the main components of Lot B1 as well as indicative quantity/volume indicators:

**Table 2: Main project components Lot B1**

<b>Item</b>	<b>Estimated quantity of works</b>
1. New passenger terminal building (2.5 million passenger capacity p.a.) 1.1 mechanical, electrical & special systems	56,500 m <sup>2</sup>
2. Aircraft parking aprons 2.1 New East aprons 2.2 New West aprons	50,000 m <sup>2</sup>
3. Apron taxilanes and taxiways 3.1 Taxiway A1 3.2 Taxiway A2 3.3 Apron taxiline 1	13,000m <sup>2</sup> (taxiways) 1500m*23m (taxi lanes)
4. Landside access road	1500-2000m
5. Car parking	800 spaces 28,000m <sup>2</sup>
6. Utilities for terminal, parking garage and control tower	na
7. Pumping station	na
8. Reconfiguration, strengthening & widening of aprons and apron taxilanes	na
9. Strengthening existing taxiways 8.1 Taxiway 1 8.2 Taxiway 2 incl. widening 8.3 Taxiway 3 incl. widening 8.4 Taxiway 4	na

Complete detailed design of the above sub-components is currently being carried out. Based on the preliminary design currently available, the following is a summary description of the main components of the project presented for ISPA financing:

### 1. New Passenger Terminal

As determined in the preliminary design, this consists of a two-storey building (with additional basement floors) of some 56,500m<sup>2</sup> to be located to the East of the existing complex. It includes the following main components:

- main terminal building
- « finger » (passenger access to aircraft)
- car parking garage

The terminal building has been designed according to IATA guidelines and has a modular structure allowing for future expansion if required. The design has been made in such a way that the transformation from a mainly international facility to a « Schengen » facility is relatively easy to make. The following principal components are included:

#### *Passenger departures*

- departure concourse
- check-in hall
- central structure (connection departure and arrival process)
- departure lounge
- boarding gates (9)
- bus gates (4)
- VIP and business class lounges
- security checking (decentralised – checks immediately prior to boarding)
- commercial facilities

#### *Passenger arrivals*

- arrival hall and control
- baggage reclaim hall
- customs
- arrival concourse

#### *Other*

- press centre
- restaurant
- airport management offices

#### *Installations and equipment*

- electrical services
- mechanical services
- transport facilities (lifts, escalators, travelators)
- special systems (flight information display system, public address system, central clock system, security systems, building automation, etc)

The « finger » protrudes from the main terminal and contains a number of contact gates with related lounges and bus gates for remote positions.

### 2. New aircraft parking aprons

New aprons will be located on both sides of the « finger » of the new terminal building and will consist of:

- New East apron
- New West apron

In the area of the new passenger building around 10-12 aircraft parking positions of various sizes will be made. Eight positions will be « contact stands » connected to the new building by movable passenger bridges in the first phase.

### 3. New taxiways & taxi lanes

The new aprons will be connected to the existing runway by means of:

- Taxiway 1A
- Taxiway 1B
- Apron taxi-lane 1

The majority of taxiways will be based on the requirements of category E-type aircraft (up to 65m wingspan), except the taxiways to the West of the terminal « finger », south of the cargo stand and in between the cargo and non-operational stands. The latter will be category D taxiways (up to 52m wingspan). Taxiway 6, south of the non-operational stands, and existing taxiway 3 will remain category C (up to 36m).

#### 4. Access road

The access road to the new terminal building will branch off the existing access road in front of the existing terminal, and will circle around the new ATC complex and into the new terminal area to the East of the present buildings.

#### 5. Car parking

The car parking garage adjoins the main terminal building, making use of the natural level differences in the former gravel quarry where the new building will be located. Originally integrated into the terminal building basement, the latest decision has been to remove the car parking to an adjoining location and to reduce the number of spaces from 1600 to 800. This has resulted in cost savings.

#### 6. Utilities

Supply of power, water and telecommunication facilities to the new buildings will be an extension of existing systems.

#### 7. Pumping station

This is required because the new terminal building will be partly located in a disused gravel pit and therefore below normal ground level.

#### 8. Reconfiguration of existing aprons and taxi-lanes

Existing aprons will be extended and upgraded to cope with the new configuration.

#### 9. Strengthening existing taxiways

Connecting taxiways to the existing runway are to be strengthened and widened to required standards.



## 7. Work schedule

**Table 3**

Category of work	Start	Completion
Feasibility studies	1993	1996
Preliminary design	November 1999	March 2000
Detailed design	April 1999	September 2000
Financial and economic analysis (most recent)	November 1999	March 2000
Environmental impact assessment (see section 10)		August 1996
Tender documents	October 1999	1/09/2000
Land acquisition	April 1999	
Construction	1/03/2001	28/02/2003
Operation	1/06/2003	

## 8. Economic and social cost-benefit analysis

The economic benefits of this project derive from the fact that it will improve the efficiency, safety and comfort of air traffic operations at Sofia airport. This can be expected to have a number of beneficial effects on the air transport sector and on the image of Sofia, with consequent favourable medium-term and longer-term impacts on the economic development of Bulgaria's capital city and of the Bulgarian economy as a whole.

The feasibility studies referred to in section 6.2.3 first examined the economic case for the investment. These were supplemented by the economic analysis of the European Investment Bank undertaken when considering the loan application in 1997. An updated cost-benefit analysis has been carried out by an international consultant, using the latest cost and revenue estimates, based on the methodology normally used by the EIB for airport investments. This takes as its starting point the projected financial returns attributable to the project, which reflect the users' willingness to pay, and assumes that economic benefits to the wider economy (including indirect users of the airport facilities as well as spin-off benefits to non-users) are only partially captured in the cash returns to the airport operator.

In order to calculate the marginal effect of the investment, estimates have been made by comparing the "with project" scenario to a "no project scenario". In the "no project" case, no investments are assumed other than those necessary to maintain the infrastructure, and the annual capacity of the terminal is assumed to correspond to the level of traffic reached

in 2003. Forecasts have, moreover, been made using different traffic growth scenarios. On this basis, the following results have been obtained:

**Table 4: Economic rates of return (ERR) under different scenarios\***

Project	Lower	Preferred	Higher
Terminal & related works (Lot B1)	5.6%	8.4%	8.7%
Terminal plus runway (Lots B1 & B2)	2.7%	5.3%	5.7%

*\*the figures are expressed in real terms, i.e. before inflation*

The resulting ERRs fall within an acceptable range in all cases, other than that of the lower growth scenario with the full project (Lots B1 and B2 combined).

For the terminal & related works, the subject of the ISPA application, the NPV of the project works out at Euro 85.1 million (at a 5% discount rate), and the benefit cost ratio at 1.58.

In addition to the above, it should be noted that there are a number of non-monetary impacts, or impacts that are difficult to quantify, which arise in connection with the project which will have positive effects on the economy as a whole. These include the following:

- direct and indirect employment generated during construction;
- direct and indirect employment generated during the operation of the new facilities;
- development of tourism with respect to Sofia and Bulgaria as a whole;
- improvement in efficiency of airline operations;
- spin-off effects from completion of an important transport node in the region with connections to the rest of Europe;
- improvement of the image of the city of Sofia and of Bulgaria – important for the encouragement of inward investment;
- encouragement of commercial activities within the airport and surrounding area;
- improvements in security and safety;
- reduced noise for residents from realignment of runway.

In the preferred scenario prudent traffic growth rates have been used. These are broadly in line with forecast trends for Europe produced by the IATA although they assume a marginal additional effect from the prospects opened up by Bulgaria's move towards accession. The growth rates are similar to those produced by NACO in their review of the Master Plan in 1999. Balkan Airlines, who carried over 50% of the traffic in 1999 is undergoing strategic change resulting in some cut back of long haul routes. The effects of this are difficult to predict as the extent to which this traffic will be taken up by other airlines is not yet fully known. However, some allowance has been made in the base figures of the model (reduction foreseen in the year 2000).

The traffic forecasts used in both the cost-benefit and financial analyses are as follows:

**Table 5: Passenger traffic growth assumptions – Sofia airport**

*% change p.a.*

<b>Year</b>	<b>Lower (reduced 5%)</b>	<b>Preferred</b>	<b>Higher (increased 5%)</b>	<b>Regional avg. Europe (IATA)</b>
2000	-10.0	-10.0	-10.0	5.0
2001	1.7	1.8	1.9	5.0
2002	1.7	1.8	1.9	5.0
2003	4.4	4.6	4.8	5.0
2004	6.5	6.8	7.1	5.0
2005	6.5	6.8	7.1	5.0
2006	6.5	6.8	7.1	4.1
2007	6.5	6.8	7.1	4.1
2008	5.9	6.2	6.5	4.1
2009-2014	5.4	5.7	6.0	4.0
2015-2025	3.5	3.7	3.9	4.0

## 9. Main elements of the financial analysis

A full discounted cash flow analysis has been undertaken of the project in order to help determine the appropriate rate of grant from ISPA. Incremental cash flows have been calculated over a period of 25 years based on a “with project” case and “without project” case.

The main results of this analysis are summarised in the following table while the main assumptions used are given below:

**Table 6: Financial rates of return (FIRR) under different scenarios\***

<b>Project without ISPA grant</b>	<b>Lower</b>	<b>Preferred</b>	<b>Higher</b>
Terminal & related works (Lot B1)	1.6%	3.9%	4.2%
Terminal plus runway (Lots B1 & B2)	0.2%	1.3%	1.7%

<b>Project with ISPA grant</b>	<b>Lower</b>	<b>Preferred</b>	<b>Higher</b>
Terminal & related works (Lot B1)	4.1%	6.6%	7.0%
Terminal plus runway (Lots B1 & B2)	1.8%	3.0%	3.3%

*\* figures expressed in real terms, i.e. before inflation*

Taking the preferred scenario in the above tables, the results suggest that project is only marginally viable without ISPA grant (financial IRR of 3.9% in the case of the terminal and related works). The proposed ISPA grant of Euro 50.0 million has the effect of raising these returns to a more acceptable level (6.6%).

The grant therefore makes a critical contribution to bridging the shortfall between secured loans and the estimated cost of the terminal and related infrastructure. Increasing the amount of loan finance to the project is not considered advisable, as the predicted cash flows would be most unlikely to bear the debt service demands beyond those created by the loans already negotiated.

#### Principal assumptions of financial analysis

All aviation revenues and direct commercial income are included in the calculations.

Passenger traffic – growth as indicated in table 5 above.

Landing charge – avg. per metric tonne Euro 7.7.

Parking fee (aircraft) – 25% of landing charge for 24 hrs.

Increases of these charges included in the model are 5% in 2003 and thereafter modest rises each three years. Sofia airport is keen to maintain competitive prices so as to develop traffic (see Annex Table A for comparative charges in the Balkan region).

Passenger taxes – departing passenger Euro 8.0 (assumed to rise to Euro 10.0 in 2004 and to Euro 12 in 2007).

Commercial revenue (Duty Free shops, car parking, rents and concessions) is included. Revenue from ground handling, fuel supplies and cargo handling has been excluded from the financial IRR calculations because of the proposed restructuring of these activities.

### **10. Environmental impact**

The project falls within the scope of Annex I of Directive N°85/337/EEC on the environmental impact of infrastructure projects, as amended by Directive N° 97/11/EEC. In such cases, an Environmental Impact Assessment is compulsory.

An Environmental Impact Assessment was undertaken of the Master Plan by the Bulgarian authorities in 1996 and was the subject of a review by public enquiry in August 1996. Public discussions were also held with NGOs and environmental organizations. The results of the consultations were summarised by the Ministry of Environment and Waters in a written statement. Following this, the authorities gave permission for the project to proceed to the next stage of planning and designing. According to Bulgarian legislation, the detailed design must also be evaluated for environmental impact if there is a substantial change that might have an impact on the environment. Sofia Airport has allocated funds for preparing a final EIA related to the project.

This EIA will be attached to the detailed design for the project and will be examined by the Ministry of Environment and Waters and then offered for public discussion before the building permit is issued.

The Bulgarian authorities have submitted the following documents with respect to the original EIA:

- Non-technical summary of Environmental Impact Study;
- Result of public consultations;
- Ministry of Environment Resolution on assessment of environmental impact (see list of 14 conditions below);
- The Airport Board of Directors Resolution (development of landscaping plan, environmental monitoring and control, waste management project and communication with community) ;
- Declaration of Ministry of Environment with respect to sensitive areas.

As a result of the EIA, 14 recommendations were made by the Ministry of Environment and Waters (Resolution N°177-18/1996) to mitigate possible adverse environmental effects of the project. The principal recommendations were as follows:

- ⇒ opportunities to be sought to utilise gas in central heating boilers;
- ⇒ opportunities to be looked into to extend system of own water sources;
- ⇒ purification equipment to be provided to deal with waste from anti-icing;
- ⇒ de-icing platforms proposed for collecting and recycling de-icing fluid;
- ⇒ investigation into reconstruction of existing purification stations;
- ⇒ solutions on waste water required to avoid pollution of Iskar river;
- ⇒ a Landscape Development Plan to be prepared to cover airport territory;
- ⇒ re-cultivation plan required for local, resistant vegetation;
- ⇒ measures required to decrease risks from overflying birds;
- ⇒ plan of control of airport waste disposal to be produced;
- ⇒ an airport monitoring system to be developed and co-ordinated with national system for supervision and protection of the environment.

All of the above conditions have been taken into account in the NACO design of the project.

In addition, the proposed relocation of runway system 09 threshold to the East by 549 m will lead to a considerable decrease in the number of Sofia residents affected by aircraft noise.

Environmental management and monitoring of the project are implemented as follows:

- ⇒ According to Bulgarian legislation Sofia Airport is obliged to provide independent construction supervision during the design phase. The obligatory measures include design compliance with specific environmental requirements and labour safety. A building permit is issued only if there are no objections to the execution of these measures.

⇒ Consultant expert meetings have been held regularly during the process of designing by NACO, (12 times since 1998), attended by representatives from the Air Traffic Control Authority, Sofia Municipality, NGOs and sometimes by representatives of the Ministry of Environment and Waters. A principal objective of the meetings is to achieve a maximum mitigation of the environmental impact both in the construction and the operational phase of the project. The “ecological projects” decided upon are subject to stringent control and must be prepared by NACO. Minutes of these meetings, including recommendations of the concerned parties, are kept at Sofia Airport. All of the recommendations are taken into consideration in the process of designing.

⇒ All the pertinent legal rules and regulations of Bulgarian legislation regarding the new project are provided to the designer (NACO B.V.) and periodically an expert group from Sofia Airport reviews whether they have been complied with.

⇒ Each Sofia Airport act regarding environmental performance is subject to control by Sofia Municipality, the Regional Inspectorate of Environmental Protection and the Sanitary and Epidemic Protection Inspectorate. Sofia Airport is included in their system for environmental monitoring, special attention being paid to noise levels, and air and water contamination.

⇒ A “Protection and Restoring of the Environment” department (PRE) exists at Sofia Airport and one of its goals is to establish a system for monitoring of the airport region and surrounding area. Together with Sofia Airport Reconstruction PIU, “PRE” will monitor the environmental elements in the phases of reconstruction and operation. The main priority will be observations for noise exposure and the contamination of air, soil and water.

In addition to the above, close co-ordination with representatives from Sofia Municipality, the Regional Inspectorate of Environmental Protection and the Sanitary and Epidemic Protection Inspectorate will be established. The purpose is co-ordination of environmental activities, discussing/considering and implementing programmes, and exchanging information. These structures will put into practice the environmental control. Special attention will be devoted to communications with NGOs and communities interested in the project.

## **11. Operation and maintenance**

Routine repair and maintenance are the responsibility of Sofia Airport EAD. The airport authorities will ensure that European standards of service are maintained. Suitably qualified staff are employed by Sofia EAD to carry out necessary tasks. Furthermore, training will be provided to airport staff in the maintenance requirements of specific equipment. Where necessary, maintenance contracts will be placed for the maintenance of specialised equipment.

The international consultant retained for the airport operational management will also advise in detail on operational issues.

Annual financial budgets of Sofia Airport EAD will provide for these requirements. The financial models provide for the cost of maintaining the infrastructure, particularly those items (mechanical and electrical) which are to be imported from Western economies at world prices.

## **12. Implementation and procurement**

A Steering Committee has been established (at the request of the EIB) under the chairmanship of the Deputy Minister of Transport to provide strategic guidance to the project and to act as the point of liaison with the Ministry of the Interior, Ministry of Finance, Sofia Municipality, Air Traffic Control, Balkan Airlines.

Except for the alignment of legislation and bye-laws, the Ministry of Transport has delegated all other functional responsibilities connected with the project to the Sofia Airport EAD management. A **Sofia Airport Reconstruction Project Implementation Unit has been established** with responsibility for the overall day-to-day management and supervision of the reconstruction project, including working-level co-ordination with the airport line managers and with other external authorities involved in the airport operation e.g. security, border control, customs and airlines.

In addition, the airport Managing Director has also requested the operations, commercial and financial line managers to improve present standards of performance; to provide input to the Reconstruction Project Implementation Unit on future requirements; and to reform and develop their respective areas of activity in preparation for the new facilities.

In addition, technical assistance financed under the PHARE programme has been provided to Sofia Airport management in accordance with the conditions of the Finance Agreement with EIB. This assistance covers the following:

### LOT A: Technical Assistance for Airport Operational Management

- Day-to-day advice to operations, commercial and financial managers.
- Assistance to the operations director for day-to-day operations and planning duties to ensure readiness of Sofia Airport EAD for the commissioning of the new terminal.
- Assistance to the commercial director in all aspects of non-traffic operations to enhance the revenue capability of Sofia Airport EAD.
- Assistance to the financial /administrative director in the establishment of an appropriate accounting system, in accordance with internationally accepted accounting standards.

### LOT B: Technical Assistance for Project Management and Design

- project management
- preliminary design, detailed design, technical specifications, confidential itemised cost estimates and tender documents preparation in packages.
- tendering and procurement of works
- supervision of works.

Pre-qualification of potential candidates for the project construction (Lot B1 terminal and related infrastructure) is currently underway. Tender documents will be prepared on the basis of the detailed design with a view to tendering in the Autumn of this year. Tendering will be consistent with the rules of Title IX of the Financial Regulation - participation in tendering procedures will be open to all legal entities of the EU and beneficiary countries.

### 13. Cost and assistance (in EURO)

Lot B1 New Passenger Terminal and Related Infrastructure

in €

Total cost	Private sector contribution	Not eligible expenditure	Total eligible cost	ISPA grant	Grant Rate %
148,756,000	0	13,620,865	135,135,135	50,000,000	37

*It should be noted that the rate of grant assistance (37 %) is expressed as a % of eligible costs of Lot B1 only. If expressed as a % of the overall project costs, including the new runway and related infrastructure (Euro 213 million), the rate of assistance from ISPA is 23.5%.*

Rate of assistance (% of eligible cost): 37 %



**Table 8: Cost breakdown**

*million Euro*

ITEM	NEW PASSENGER TERMINAL TOTAL COSTS	NEW PASSENGER TERMINAL ELIGIBLE COSTS
Planning/design fees	2.90	
Land purchase	0.70	
Site preparation –included in main works		
Main works Terminal & related infrastructure	118.82	118.82
Plant and machinery - included in main works		
Technical assistance	1.22	
Supervision during implementation	1.20	
Contingencies	5.95	5.154
Tax/public levies	6.471	
Inflation	2.495	2.161
Other: <i>Landscaping and miscellaneous equipment</i>	9.0	9.0
<b>TOTAL</b>	<b>148.756</b>	<b>135.135</b>

Remarks: 1. The figures in the table relate to the option chosen by the Steering Committee based on the preliminary design developed by NACO.  
 2. The Civil Construction Works includes 5% contingencies.  
 3. Exchange rate of 1 USD = 1 Euro is used in the calculations  
 4. Inflation rate – 2%

#### 14. **Involvement of IFIs**

The European Investment Bank has agreed a loan of Euro 60.0 million for the financing of the Sofia Airport Reconstruction project – lot B1 New terminal and related works (agreement dated September 1997).

#### 15. **Specific conditions related to the measure**

Conditions relating to the proposed assistance to this project are listed under Article 8 of the Financing Memorandum.

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**ANNEX I TABLE A**

Regional Airport charges for B737-400, USD

	Fees, USD	Sofia Airport	Belgrade	Otopeni	Skopie	Ohrid	Ankara	Istambul	Greece Airports
No									
1	Landing	580	1147,16	748	1020	1020	442	442	89,46
2	Parking, per h	145	91,8	10,2	115,6	115,6	122,4	122,4	2,23
		first 3h - free	first 4h - free	first 3h - free	first 4h - free	first 4h - free			first 2h - free
				Min charge \$15					
3	Passenger	8	13,5	13	10	10	15	15	9,24 - 18,4

Assumptions:

**A. Type of aircraft**

The type of the aircraft is selected from the statistics of Air Transport group, Cranfield College of Aeronautics:

type of the aircraft: B737-400

MTOW (tonnes): 68

Seats: 130

Seat factor: 70 %

Parking: 1 Hour

**B. Charges**

1. Landing charges: Increases are modelled at 5 % in 2003 and thereafter by modest amount each 3 years.
2. Parking charges: As with landing charges.
3. Passenger charges: The passenger fee to increase by 25 % to Euro 10 in 2004. In 2007 to increase again by 20 % to Euro 12. Thereafter small increases are modelled each 3 years.

It is an object of proposed business plan to maintain competitiveness of aviation charges with the region. For this purpose reasonable price increases are provided.

**C. Exchange rates**

1. 1 GRD = 0.0028 USD
2. 1 Euro = 1 USD