

**STATE OF ISRAEL**



**MINISTRY OF TRANSPORT  
AND ROAD SAFETY**

**Economics and Planning Department**



**Israel Railways Ltd.**

**Request for Information**

**Railway to Eilat**

November, 2010



## **Request for Information (RFI) – Railway to Eilat**

### **Contents**

	<b><u>Subject</u></b>	<b><u>Page</u></b>
1.	<b>Goal</b>	<b>3</b>
2.	<b>Background</b>	<b>3</b>
3.	<b>Project Overview</b>	<b>4</b>
4.	<b>Requested Information</b>	<b>8</b>
5.	<b>RFI Procedure and Schedule</b>	<b>10</b>
6.	<b>Miscellaneous</b>	<b>10</b>
	<b>Appendices</b>	<b>11</b>



## **1. Goal**

The Government of the State of Israel (hereinafter "GOI") is developing plans for a rail connection between Tel Aviv and Eilat (hereinafter "the Project"), and is considering contracting out to the private sector the implementation of the Project. See Project map in Appendix I.

The GOI, therefore, invites interested parties worldwide to submit a detailed response to this RFI, in order that it may:

- examine private sector interest in design, construction, finance and operation;
- examine private sector capabilities;
- determine the form of private sector party participation in the Project implementation; and
- determine specifications of planning and design.

## **2. Background**

- 2.1. Government Resolution #1421 from February 24<sup>th</sup> 2010 instructed the GOI to promote, *inter alia*, the design of a railway to Eilat.
- 2.2. This instruction is part of a broader program – *Netivei Israel* ("Israel Lines") - Transport Program for the Promotion of the Negev and the Galilee, 2010 - whose purpose is to develop Israel's peripheral areas by connecting them to the central region of the country . The cost of implementing the entire *Netivei Israel* program is estimated at NIS 27.5 billion (€5.8 billion).
- 2.3. Instructions are to promote the Project plan and design having examined different topographical alignment alternatives and recommending the optimal alternative enabling travel time of no more than 2hr 30min for an express passenger service between Tel Aviv and Eilat. The Ministry of Transport and Road safety (hereinafter – MOT) and the Israel Railways Ltd. have examined different alternatives and have recommended the alignment described below, taking into consideration all parameters including technical (alignment characteristics, travel distance, cost) and environmental issues, and statutory conditions.
- 2.4. Regarding freight, the railway to Eilat has the potential for economic viability as it can satisfy demands for freight transport from the Dead Sea and Negev area (chemicals and fertilizers) to Eilat, and demands for freight transport between the Port of Eilat and the Port of Ashdod.
- 2.5. Following Government Resolution #1421, Israel's MOT has made the decision to examine the feasibility of contracting with the private sector to implement the Project. Response to this RFI will assist the GOI in determining the most appropriate strategy for the implementation of the Project.



### 3. Project Overview

#### 3.1. System

##### 3.1.1. Aim

The Project aims to achieve the implementation of:

- an express passenger rail service between Tel Aviv and Eilat;
- a regular passenger rail service between Beer Sheva Center and Eilat;
- a freight rail service between the Port of Ashdod and Eilat via Dimona.

See Appendix II for map of existing railway network.

##### 3.1.2. Line Characteristics

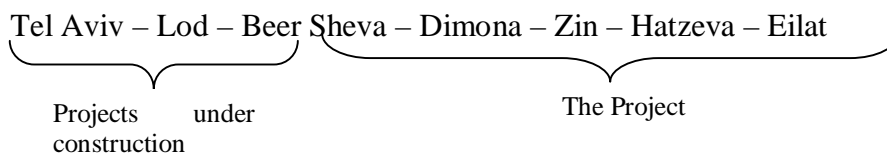
Construction Quantitative Description :

**The concessionaire is expected to execute the construction of the following:**

- Total double track length to be constructed: 169 km
- Total length of upgrading to double track: 88 km
- Number of bridges: 63. Total length: 4.5 km.
- Number of tunnels: 5. Total length: 9.5 km (1 cut & cover 5.5 km, 4 mining 4 km(optional))
- Number of local-stop stations: 7
- 1 Central station in Eilat
- 1 Depot and stabling
- Infrastructure according to the power system (electric-powered or diesel-powered)

Passenger Rail:

According to GOI assessment, the optimal route for the passenger railway service passes through the following locations:





The following details the abovementioned line sections, noting those to be constructed or upgraded by the concessionaire:

- Tel Aviv – Lod. Length = 20 km. A double track already exists and is in operation. It is being upgraded to 160 km/hr. **Track upgrade is not part of the Project.**
- Lod – Beer Sheva. Length = 73 km. Double track is currently under construction and designed for 160 km/hr. **Track construction is not part of the Project.**
- Beer Sheva – Dimona. Length = 34 km. Existing track requires upgrading to 160 km/hr, and doubled – **by the Concessionaire.**
- Dimona – Zin. Length = 54 km. Existing track requires upgrading to 160 km/hr, and doubled – **by the Concessionaire.**
- Zin – Hatzeva – Eilat. Length = 170 km. New double track to be constructed and designed for a speed of up to 200 km/hr. The Hatzeva-Eilat section to be suitable for speeds of 230 to 300 km/hr. – **by the Concessionaire.**
- An optional shortcut is possible, reducing the route length by 34 km. The construction of the shortcut includes a total of 4 km of 4 double tunnels through the Zin Mountain, 10 km of double track and 10 km of single track. The shortcut tracks should be designed for 160 km/hr. – **by the Concessionaire.**

#### Rail Freight:

Rail Freight services to be given **by the Concessionaire:**

- Dimona – Eilat Center, of materials originating in the Dead Sea;
- Eilat Center - Ashdod Port via Beer Sheva. The Beer Sheva-Eilat section does not include the Zin shortcut due to vertical slopes of 3%.

*Note:* freight services already exist from Dimona to Ashdod Port.

- Optional extension of the line from Eilat Center southwards to the Port of Eilat. Length = 3 km.

#### 3.1.3. Traffic Concept

The system allows a mix of passenger and freight rail traffic.

##### Passenger Services:

The Project must offer passengers a fast, comfortable, reliable and safe journey. Passenger information systems must be provided, and disabled access guaranteed. Both regular and express services must be offered.

The regular passenger service between Beer Sheva Center and Eilat will include 8 stops along the route: Dimona (existing), Hatzeva, Sapir, Paran, Yahel, Yotveta, Timna Airport and Shehoret.



The passenger express-service begins/ends at HaHagana Tel Aviv station and ends/begins at the Eilat Transport Center, with a two-minute stop at Beer Sheva North station.

Service frequency must be optimal according to demand. Total travel time for the express service should not exceed **2hr 30min**.

Freight Services:

The freight service must guarantee safe transportation, in particular of hazardous materials such as chemicals. Frequency is not restricted but must be integrated into the passenger service timetable.

3.1.4. Demand Forecast

Passengers:

Based on an economic evaluation made by AB PLAN Ltd., MATAT Ltd., and TOP Acoustics Ltd. in 2007 for the MOT:

- Actual 2-way passenger flow for 2005 was 8 million for all travel modes.
- Total 2-way passenger flow forecast to Eilat for 2020 is 11.3 million for all travel modes. The 2-way passenger flow forecast for rail travel, based on a travel time of 190 minutes from Tel Aviv to Eilat, is 2.9 million.
- Should the travel time by railway take less than 2 hr 30 min, it is predicted that:
  - Rail will be favored over other modes of transport and attract more passengers from other travel modes;
  - Rail will attract additional potential passengers to Eilat.

Freight:

The Port of Eilat primarily handles deliveries of chemicals and fertilizers from the Dead Sea loaded onto the train in Dimona, and from the Negev (Zin) to the Far East, and of imported goods from the Far East to the center of Israel (mainly vehicles).

Freight Volume - actual for 2008 and forecast for 2020 for all transport modes:

	2008	2020		
		Low*	Medium*	High*
Chemicals (1000 tons)	2,350	3,300	4,500	5,400
Imported vehicles (1000 of units)	145	165	185	200
Containers (1000 TEU)	2	40	75	210



*Note:* there are no passenger or freight rail services on the Sabbath (from Friday evening to Saturday evening) nor on Jewish holidays (also from evening to evening).

### 3.2. Rolling Stock

Either diesel-powered or electric-powered rolling stock can be proposed for passenger and/or freight rail traffic. The passenger trains must comply with a maximum train speed of 200 km/hr or 300 km/hr, depending on final Project specifications. Currently, the default is 200 km/hr rail system, however the MOT is examining the feasibility of a 300 km/hr system. The alignment runs mostly through desert climate conditions. Temperatures during summer exceed 40° Celsius. Sand storms must also be taken into consideration. Maximum longitudinal slope is 1.3% - 1.4%. A simulation using Vision software was carried out for an express service on the Tel Aviv – Eilat route (without the shortcut), using the following locomotive and railway car sets (max. speed of the locomotives was set at 200km/hr):

- A) 1 D67 diesel locomotive + 4 double-deck carriages
- B) 2 D76 diesel locomotives + 8 double-deck carriages
- C) 1 E6.4 electric locomotive + 8 double-deck carriages

#### Results:

Rolling Stock Set	Journey Time	
	Tel Aviv to Eilat	Eilat to Tel Aviv
A	2:34:24	2:34:16
B	2:29:10	2:29:01
C	2:19:35	2:19:12

Via the optional shortcut, travel time could be reduced by 13 minutes using the electrified locomotive. No further simulations were executed.

The simulation was performed by the IRL on June 2<sup>nd</sup> 2010.

#### Basic assumptions used for the simulation:

- First year of operation – 2018
- Number of tracks –
  - Double track between HaHagana Tel Aviv and Lod (existing infrastructure).
  - Double track between Lod and Beer Sheva North, upgraded for 160 km/h max.
  - New double track constructed between Beer Sheva North and Eilat.
- Max speed adjusted to slopes and curves of existing/planned tracks.
- Stops and stations:
  - Begins/ends at HaHagana Station Tel Aviv



- 2-minute stop at Beer Sheva North
- Ends/begins at Eilat Transport Center.
- 6% time contingency.

### **3.3. Miscellaneous:**

#### 3.3.1. Operation

Should it be decided that operation is to be carried out by the private sector, it must be integrated into the Israel Railways timetable.

#### 3.3.2. Safety

Safety must comply with Israel Railways Ltd. safety regulations which are based on West European Standards.

#### 3.3.3. Environmental and Statutory Demands

The system must comply with Israel's environmental and statutory legislation.

## **4. Requested Information**

The respondent is requested to provide the following information, in brief:

### **4.1. Respondent Details:**

- 4.1.1. Name, address, contact details, contact persons
- 4.1.2. Branch (design, construction, financial institution, operator, rolling stock manufacturer, etc.).
- 4.1.3. Organizational structure.
- 4.1.4. Relevant experience:
  - 4.1.4.1. Similar projects.
  - 4.1.4.2. Key experts.
  - 4.1.4.3. Specific experience in design, construction, maintenance, operation and finance.
  - 4.1.4.4. Credentials.
- 4.1.5. Unique intellectual property and technology.
- 4.1.6. Permits, licenses, etc. in conformance with international standards; quality and safety standards certifications.
- 4.1.7. Main financial figures/financial statements for the years 2007-2009, and financing capabilities.
- 4.1.8. Any other relevant information.





**4.2. Business Plan:**

- 4.2.1. State your opinion on the business opportunities that the Project offers.
- 4.2.2. State your preferred type of contractual engagement for implementing the Project – BOT, DB, PFI etc.
- 4.2.3. State a financial model according to the preferred PPP scheme.
- 4.2.4. State the preferred organizational structure for the Project. State whether it will include a joint venture of local (Israeli) and foreign firms, noting the tasks, in general, of each firm.
- 4.2.5. State further business elements/facilities that can be integrated into the Project in addition to those noted in this RFI.
- 4.2.6. State how you would address issues regarding interface with Israel Railways Ltd., such as multiple operators on the same infrastructure.

**4.3. Project Details:**

- 4.3.1. State your opinion on the alignment.
- 4.3.2. State your opinion on the traffic concept (mix of passenger and freight service).
- 4.3.3. State your opinion on the track extension from Eilat Center to the Port of Eilat.
- 4.3.4. State your opinion on the Mount Zin shortcut option.
- 4.3.5. State your preferred power system (diesel, electricity etc.).
- 4.3.6. Rolling stock -
  - State your preferred technology for the required services.
  - Show a function of the operational and investment costs of the system for speeds ranging from 100-300 km/hr.
- 4.3.7. Propose scheduling (freight and passenger) for optimal service.
- 4.3.8. Control, signaling, communication and information systems – specify the systems you would apply to this Project.
- 4.3.9. Give your rough estimates of the investment costs for design, construction and rolling stock, and of the operational costs. Should the project be carried out by a joint venture of local (Israeli) and foreign firms, give the estimated cost allocation between the local (Israeli) firms and the foreign firms.
- 4.3.10. Time schedule of the project by milestones.
- 4.3.11. Potential land use along the corridor and in particular in the vicinity of the stations.



## **5. RFI Procedure and Schedule**

- 5.1. Request for clarifications to be submitted by December 15<sup>th</sup>, 2010.
- 5.2. Final responses to be submitted by February 28<sup>th</sup>, 2011.
- 5.3. All requests for clarifications must be referred to:  
  

**Mr. Charles Solomon**, Deputy Director General, Economics & Planning, Ministry of Transport and Road Safety, or to

**Mr. Opher Eliashar**, CPA (Isr), Financial Planning Manager, Economics and Planning Dept., Ministry of Transport and Road Safety,  
P.O.B. 867, Jerusalem 91008, Israel; email: [eliasharo@mot.gov.il](mailto:eliasharo@mot.gov.il), tel : +972-2-6663081;  
fax: +972-2-6663083.
- 5.4. All responses must be mailed in a sealed envelope to the above contact and P.O.B. address.

## **6. Miscellaneous**

- 6.1. This RFI is not a bid solicitation and in no way binds the GOI to continue with a tender process.
- 6.2. This RFI does not bind the GOI to any of the candidates.
- 6.3. This RFI does not give an advantage to any of the respondents in a subsequent RFP procedure.
- 6.4. This RFI does not bind the GOI to the project specifications listed above.
- 6.5. The GOI reserves the right to hold any information received, for its own use at its sole discretion.
- 6.6. Should the response contain any confidential information, regarding intellectual property, financial figures, technology, etc., this must be stated clearly next to each confidential item in the submitted document. This information shall not be exposed to any external parties.
- 6.7. The GOI is entitled to request additional information, clarification or complementary material from the respondents and to invite any respondent to meet with GOI representatives.
- 6.8. The GOI reserves the right to use the information received to create a potential vendor list and apply to these vendors as needed, at its sole discretion.**



6.9. Appendix I - Project map

