Current Condition and Investment Activities

“SERBIN RAILWAYS” jsc

2013, April
3809 km of railway network
3162 km in service
283 km double track lines 7.5% of network
1286 km electrified 33% of network
875 km of lines along Corridor X
Maximum designed speed 120 km/h
690 stations/stops, 334 tunnels, 981 bridges, 2136 level crossings
9.47 million tons of goods transported in 2012
16.63 million of passengers transported in 2012
SCOPE OF ACTIVITIES OF JSC “Serbian Railways” 1985 -2011

PASSENGER SERVICE VOLUME
in national and international traffic in thousands

Graph showing the passenger service volume from 1985 to 2011.
SCOPE OF ACTIVITIES OF JSC “Serbian Railways” 1985 - 2011

FREIGHT SERVICE VOLUME
in national and international traffic in thousand of tons

- 1985: 34,443,331 tons
- 2011: 12,620,423 tons

34.4% decrease from 1985 to 2011.
There is an increasing difference between:

- Average designed speed
- and
- Real average maximum permitted speed

In 2012, prescribed average speeds on main lines of "Serbian Railways" JSC have been 66% out of average designed speeds i.e. they are NEARLY 1/3 LOWER.

Average speed per year – main lines

ESTIMATION
Rehabilitation of weak spots on the network of JSC "Serbian Railways" requires approx. 350 million €
- **191 km** is required to undergo a general repair
- **38 km or 20%** were overhauled on average from 1981 to 2010

While **11%** out of the required lines were totally overhauled in the last 20 years

- We plan to enter this cycle in the following 5 years
Lists of the projects in MP resulted from the analysis of the current condition and envisaged development. **MINIMUM INVESTMENT SCENARIO** comprises the existing network and projects underway or the ones whereof implementation has been decided upon. **DEVELOPMENT SCENARIO** includes all identified development projects along with the forecasts for future traffic along the network.

**Minimum Scenario Costs (2009-2027)**

<table>
<thead>
<tr>
<th>Transport mode</th>
<th>Investment</th>
<th>Maintenance</th>
<th>Total costs million €</th>
</tr>
</thead>
<tbody>
<tr>
<td>Railways</td>
<td>112</td>
<td>2128</td>
<td>2240</td>
</tr>
<tr>
<td>Roads</td>
<td>336</td>
<td>4600</td>
<td>4936</td>
</tr>
<tr>
<td>Airports</td>
<td>66</td>
<td>250</td>
<td>316</td>
</tr>
<tr>
<td>Waterways</td>
<td>9</td>
<td>43</td>
<td>52</td>
</tr>
<tr>
<td>Intermodal</td>
<td>17</td>
<td>9</td>
<td>26</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>540</strong></td>
<td><strong>7030</strong></td>
<td><strong>7570</strong></td>
</tr>
</tbody>
</table>

**Development Scenario Costs (2009-2027)**

<table>
<thead>
<tr>
<th>Transport mode</th>
<th>Investment</th>
<th>Maintenance</th>
<th>Total costs million €</th>
</tr>
</thead>
<tbody>
<tr>
<td>Railways</td>
<td>5100</td>
<td>2346</td>
<td>7446</td>
</tr>
<tr>
<td>Roads</td>
<td>8707</td>
<td>5044</td>
<td>13751</td>
</tr>
<tr>
<td>Airports</td>
<td>105</td>
<td>270</td>
<td>376</td>
</tr>
<tr>
<td>Waterways</td>
<td>349</td>
<td>126</td>
<td>475</td>
</tr>
<tr>
<td>Intermodal</td>
<td>88</td>
<td>48</td>
<td>136</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>14349</strong></td>
<td><strong>7833</strong></td>
<td><strong>22183</strong></td>
</tr>
</tbody>
</table>

The data clearly indicate that **MAINTENANCE OF RAILWAY INFRASTRUCTURE SHOULD BE PRIORITY**, whereas the modernisation will depend on the decision of the State and its orientation towards the investment in railways in the period 2009 - 2027.
Modernisation of railway lines of „Serbian Railways“ JSC

First stage

1. Stara Pazova – Novi Sad
   - Double track line
   - Length 45 km
   - Budget - 340 mil €

2. Stală – Unis
   - Double track line
   - Length 18 km
   - Budget - 105 mil €

3. Niš – Dimitrovgrad
   - Reconstruction and electrification
   - Length 106 km
   - Budget - 120 mil €

4. Niš – Preševo
   - Major overhaul with upgrading of certain sections
   - Length 166 km
   - Budget - 270 mil €

5. Beograd Centar – Pančevo
   - Double track line
   - Length 16 km
   - Budget - 55 mil €

6. Pančevo – Vršac
   - Modernization and electrification
   - Length 80 km
   - Budget - 50 mil €

7. Resnik – Vrbnica
   - Major overhaul
   - Length 285 km
   - Budget - 250 mil €

8. Valjevo – Loznica
   - Construction of the new line
   - Length 68 km
   - Budget - 259 mil €

Second stage

1. Novi Sad – Subotica
   - Reconstruction of the existing and construction of the second track
   - Length 110 km
   - Budget - 360 mil €

2. Resnik – Velika Planina
   - Construction of new double track line
   - Length 76 km
   - Budget - 370 mil €

Total budget:

I stage.....1 233 mil €
II stage.......730 mil €
• 1 963 mil €
The result of the first and second stage implementation:

1) Elimination of “weak spots” and general upgrading of technical characteristics of the lines. Setting the conditions for providing quality service.

2) Construction of 154.5 km of new lines. New length of the lines in operation - 3316.5 km.

3) Construction of the second track on the existing lines in the length of 257.5 km – TOTALLY 540.5 km i.e. 16% of lines in operation

4) Electrification of 254 km i.e. totally 46% of network in operation.

5) By gradual usage of materials obtained by overhaul regional lines would be maintained.
The establishment of THE SYSTEM FOR THE ANALYSIS OF TRACK CONDITION IN SERBIA- Railway Management System (RMS)

Source of finance: Donation of the EU Delegation to the Republic of Serbia amounting EUR 3,000,000
Contractor: “Italferr”, Rome, as selected by the donator
Deadline for works completion: October 2013

OBJECTIVE:
Establishment of a completely computerised maintenance and construction of railway infrastructure management system.

The implementation of this system will:
- enable quick recording and marking of railway infrastructure,
- quick and efficient control over civil engineering works
- give assistance in line maintenance and reconstruction planning
- reduce costs relating to maintenance and renewal
- facilitate future investment projects
CONSTRUCTION OF THE BRIDGE over the Danube River in Novi Sad at the site of the demolished “Žeželj Bridge”


PROJECT VALUE: EUR 45.3 million.

Commencement of Works: April 2012

Deadline for Works Completion: November 2013

The bridge will be 450 m long, 31 m wide with 2 carriage ways, 2 railway tracks and 2 sidewalks
RAILWAY REHABILITATION PROJECT II
Source of Finance: European Investment Bank EIB

Reconstruction and modernisation of the Gilje – • uprija – Para• in section of the Belgrade –Niš Railway Line

Construction of the double-track bridge over the Velika Morava River
- span is 322 meters
TOTAL VALUE OF WORKS 8.9 mil. €
Deadline for completion of works by the end of 2013

Construction of the new double track line in the length of 10.5 km.
Civil engineering part: 16.162.200 €, The contract is signed, work in progress
Electrical & technical part: 6.500.000 € Tender is underway
TOTAL VALUE OF WORKS 45 mil. €.
Deadline for completion of works: 2014
CORRIDOR X- EBRD IV
Source of Finance:
European Bank for Reconstruction and Development EBRD

Tender is underway – tender opening on 08.10.2012

1. Procurement of material for reconstruction of 6 sections of Corridor X in the length of approx 112 km
   TOTAL VALUE 30 mil. €
   Deadline for works completion: 2014

2. Procurement of track maintenance machines
   TOTAL VALUE 5 mil. €.
INFRASTRUCTURE Projects Underway

HAHABILITATION OF LINES – EBRD V – Contract signed on January 2012

Source of Finance: European Bank for Reconstruction and Development

Loan Value: 95 mil. €
Tender issuing 2013.

1. Reconstruction and modernization of section Beograd-Resnik
   Procurement of material and executing of works
   TOTAL VALUE 27 mil. €

2. Rehabilitation of civil engineering and electrical & technical infrastructure on Corridor X
   2.1 Station Mala Krsna
   2.2 Lapovo- Bagrdan left and right track
   2.3 Para- in - i- evac right track
   2.4 i evac - Stala- left track
   Procurement of material and executing of works
   TOTAL VALUE 21 mil. €

3. Rehabilitation of electrical & technical facilities on Corridor X
   Procurement of material
   TOTAL VALUE 20 mil. €

4. Procurement of machines for maintenance of civil engineering and
electrical & technical infrastructure
   TOTAL VALUE (8+4) 12 mil. €
railway station BEOGRAD CENTAR

Phase 1 construction of infrastructure for train movement acceptance, dispatching and control
Source of Finance: Kuwait Fund for Arab Economic Development

Loan value: 10 mil. Kuwait Dinars (approx. 27.6 mil. EUR )

Under issuing: July 2013.
Construction of Telecommunications Infrastructure on ŽS network

TOTAL VALUE: 24 mil. €

The plan is to install the fiber-optic cables along the regional and main lines in the total length of 2 013 km in 3 phases.

Contract for phase 1 was signed in January 2011

Phase 1: 444 kilometers Belgrade Railway Node 113 km
Belgrade - Niš 230 km
Belgrade - Šid 101 km

ESTIMATED VALUE OF WORKS 5.33 mil. €.
1. Procurement of 12 DMUs
   - Source of finance: **Eurofima**
   - Budget 43 million CHF
   - All 12 DMUs have been delivered by company Metrovagonmash from Russia

2. Procurement of 21 EMUs
   - Source of finance **EBRD III**
   - Contract signed in May 2009
   - Budget 100 million EUR
   - Tender ended
   - EMUs will be delivered in 2014 and 2015 by company Stadler from Swiss
<table>
<thead>
<tr>
<th>Project</th>
<th>Potential Source of Finance</th>
<th>Loan Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Modernization of line Stara Pazova – Novi Sad</td>
<td>Loan from the Russian Federation Government</td>
<td>840mil. USD for infrastructure Projects</td>
</tr>
<tr>
<td>1.2 Line doubling Pančevo Most – Pančevo Main Station</td>
<td>Czech Export Bank</td>
<td>120 mil. €</td>
</tr>
<tr>
<td>1.3 Executing of works on 6 sections of Corridor X in the length of approx. 112 km</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.4 Overhaul of Serbian part of line Beograd – Bar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Overhaul and electrification of line Niš – Dimitrovgrad</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. Procurement of 15 multisystem locomotives
   - Source of finance EBRD IV
   - Budget 64 million EUR
   - Contract signed in September 2010
   - Tender is underway

2. Procurement of additional DMUs
   - Loan from the Russian Federation
   - Budget 100 million USD
Thank you for your attention!

April 2013