

“Financing the development of road and rail transport infrastructures”.

17<sup>th</sup> November 2010, Vienna, Austria

**TEM/TER Master Plan priority projects**  
**Road financing review paper**

# **Revision of the TEM MASTER PLAN**

## ***How to Ensure Financing for TEM Master Plan Projects***

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# TEM Master Plan

- The original “TEM Projects’ Master Plan” , was published in 2006:
  - extensive inventory of specific road infrastructure projects for 21 Central, Eastern, and South-Eastern European countries.
  - pragmatic investment time plan for their implementation.
- In 2009, UNECE and TEM Project Steering Committee decided on the Revision of the TEM Master plan:
  - update the TEM Master Plan projects’ financial securisation figures
  - analyse the updated projects eligibility for funding
  - provide recommendations for future steps to be taken in order to secure the missing funding sources
- Each country provided:
  - updated economic and financial figures for all the projects included in the original TEM
  - information for newly proposed TEM projects.

# Methodology for Identification and Assessment of Projects

- Need for more information than just construction costs and traffic performance:
  - information on long-term and indirect impacts on society's mobility
  - ability to serve diverse needs and they
  - social and political consequences of transportation infrastructure projects
- Methodological framework, structured in three phases was developed in order to secure the inclusion of all proposed projects.
  - Identification
  - Analysis
  - Time period classification

# Phase B – Analysis

- The objective of this phase is to derive scores (degree of performance) for the unfunded –or partly funded- project's for use in the prioritization phase.
- Definition of Criteria – 2 hyper-criteria
  - CLUSTER A: *Horizontal Dimension: Functionality/ Coherence Criteria (CA)- 4 criteria*
  - CLUSTER B: *Vertical Dimension: Socio-economic Efficiency and Sustainability Criteria (CB) 5 criteria*
- Measurement of Criteria - Scores
- Weighting/ Hierarchy of Criteria – Delphi/Pair-wise Comparison
- Total score per project (total Performance of Project)

# Classification of Time Periods

- **Category I (committed funding-score 5) :**
  - projects, which have funding secured and are on-going and expected to be completed in the near future (up to 2010, unless specified otherwise by the implementation plan as submitted by the countries).
- **Category II (Score 4-5):**
  - projects which may be funded or their plans are approved and are expected to be implemented in a short time period (up to 2015, unless specified otherwise by the implementation plan as submitted by the countries).
- **Category III (Score 3-4):**
  - projects requiring some additional investigation for final definition before likely financing and implemented (up to 2020).
- **Category IV (Score 1-3):**
  - projects requiring further investigation for final definition and scheduling before possible financing (most likely to be implemented after 2020).
  - projects for which insufficient data existed.



# Total Prioritization Results

- In total **374 TEM projects** were proposed and included in the update of TEM Master Plan.
- The implementation of the TEM network as a whole will require **108,198 million €\***.
- *Out of these projects:*
  - 94 projects have been completed (25%)
  - 227 projects belong to Category I (61%)
  - 3 projects belong to Category II (1%)
  - 27 projects belong to Category III (7%)
  - 23 projects belong to Category IV (6%)

*\*estimate is based on the available data*

# TEM NETWORK IMPLEMENTATION TIMEPLAN

Country	Projects	TEM Network Implementation Progress						TEM Network Funding		
		Completed	Up to 2010	2010-2015	2015-2020	After 2020	Unknown	Secured	Unsecured	Unknown
AT	1	100%								
BL	3	100%								
BH	10		10%	30%	20%	40%		26%		
BG	13			54%		46%		48%		
CR	27	33%		44%	19%	4%		100%		
CZ	5	40%	20%	40%				100%		
FYROM	3		67%	33%				100%		
GE	4	100%								
GR	5	80%	20%					100%		
HU	20	45%	55%					100%		
LT	10	20%	10%		30%	40%				✓
MOL	1	100%								
MO	6	100%								
PL	119	26%	10%	60%	4%			99%		
RO	48	6%	1%	50%	25%	18%		62%		
RU	12	8%	92%					100%		
SE	21	62%	9,50%	28,50%				94%		
SK	19	5%	21%	58%	16%			100%		
SL	7	58%	14%	14%	14%				100%	
TU	36		6%	75%	19%			75%		
Whole Network	Projects	TEM Implementation Progress						TEM Network Funding		
		Completed	Up to 2010	2010-2015	2015-2020	After 2020	Unknown	Secured	Unsecured	Unknown
	374	25%	14%	45%	10%	6%		80%		

# Implementation Plan

● *The analysis of their implementation plans demonstrated that:*

- 25 % of the proposed projects for the TEM Network has been completed
- 14 % of the proposed projects for the TEM Network is expected to be completed until 2010
- 45 % of the proposed projects for the TEM Network is expected to be completed until 2015
- 10 % of the proposed projects for the TEM Network is possible to be completed until 2020 and
- for 6 % of the proposed projects for the TEM Network, it is unknown when would be completed, since further investigation is necessary before definition, scheduling and possible financing.



# Main Findings

- The majority of projects (61%) belong to Category I, having thus secured funding.
- Approximately 80% of funding has been secured.
- The majority of the projects (57%) are of the Motorway road type.
- Most projects are either at the construction or at the planning stage.
- Approximately 50% of the proposed projects will be operational by 2015.
- The majority of the projects are expected to increase AADT by more than 15%.
- The total cost of projects under consideration divided in their respective implementation years, was found to be significantly lower than each country's GDP.

# FUNDING RECOMMENDATIONS

EXAMPLES FOR COUNTRIES  
WITH NO SECURE FUNDING

# Bosnia Herzegovina

- **BH-M-6:** explore the possibility of receiving funding from EU funds, EIB and World Bank
  - involves a Motorway
  - considerable maturity (design stage to be implemented in year 2013)
  - financial feasibility study is carried out to determine the IRR of the project
  - considerable estimated traffic increase is, the project attractive for funding under PPP, assuming that the country agrees to a toll system.
- Remaining projects that involve a National Road or an Expressway, receive funding from either national/ regional sources, with a low possibility to be implemented under a PPP.

Project ID	Status	Road Type	% Increase in Traffic	Start year	End year	% Funding Secured/ Source				IRR
						National	Bank	Grant	Private	
BH-M-2	Design	M	11	2013	2017	-	-	-	-	-
BH-M-5	Design	NR	3	-	-	-	-	-	-	-
BH-M-6	Design	E	50	2012	2015	-	-	-	-	-
BH-M-7	Design	NR	-	-	-	-	-	-	-	-
BH-M-9	Design	NR	-	-	-	-	-	-	-	-
BH-M-10	Planning	NR	17	-	-	-	-	-	-	-

# Bulgaria

- **BG-M-1:** could receive funding from national sources
  - involves the construction of a national road
  - total cost of projects under consideration divided in the implementation years is significantly lower than the country's 1,5% of GDP
- **Remaining projects:**
  - these are not yet in a mature stage
  - since they involve the construction of a Motorway, could receive in the future funding from EU funds (OPT for the period 2011-2015)

<i>Project ID</i>	<i>Status</i>	<i>Road Type</i>	<i>% Increase in Traffic</i>	<i>Start year</i>	<i>End year</i>	<i>% Funding Secured/ Source</i>				<i>IRR</i>
						<i>National</i>	<i>Bank</i>	<i>Grant</i>	<i>Private</i>	
BG-M-1	Planning	NR	-	after 2014	-	-	-	-	-	
BG-M-5	Planning	M	-	after 2014	-	-	-	-	-	-
BG-M-6	Planning	M	-	after 2014		-	-	-	-	-
BG-M-8	Planning	M	-	after 2014	-	-	-	-	-	-
BG-M-9	Planning	M	-	after 2014	-	-	-	-	-	-
BG-M-10	Planning	M	-	after 2014	-	-	-	-	-	-

# Lithuania

- Projects **LT-M-4**, **LT-M-5**, **LT-M-7**: could be eligible to receive funding from either the EU funds, or the EIB, World Bank:
  - they are at a considerably mature stage
  - involve the construction of a Motorway
  - have a high impact on traffic, and a very satisfactory IRR, thus indicating financial feasibility.
  - also explore the option of PPP, assuming that the country agrees to a tolling system.
- Project **LT-M-8** could receive either national/ regional funding.
- The Lithuanian road administration strategy has been changed to the following: to keep existing road network condition level. Except of part of EU supported road development projects other road development projects will be postponed.

Project ID	Status	Road Type	% Increase in Traffic	Start year	End year	% Funding Secured/ Source				IRR
						National	Bank	Grant	Private	
LT-M-4	Planning	M	40	2015	2017	-	-	-	-	15%
LT-M-5	Planning	M	40	2015	2017	-	-	-	-	15%
LT-M-6	Program ming	M	72	after 2025	n.a.	-	-	-	-	n.a.
LT-M-7	Design	M	51	2014	2016	-	-	-	-	10%
LT-M-8	Program ming	E	63	after 2020	n.a.	-	-	-	-	n.a.
LT-M-9	Program ming	M	73	after 2020	n.a.	-	-	-	-	n.a.
LT-M-10	Program ming	M	76	after 2025	n.a.	-	-	-	-	n.a.



# Poland

- **PL-M-31** could be eligible to receive funding from EU funds, EIB, World Bank
  - since it is at a considerably mature stage
  - involves the construction of a Motorway
  - has a high impact on traffic
  - very satisfactory IRR percentage, indicating financial feasibility
- Construction and development of infrastructure is financed by the National Road Fund (KFD)

<i>Project ID</i>	<i>Status</i>	<i>Road Type</i>	<i>% Increase in Traffic</i>	<i>Start year</i>	<i>End year</i>	<i>% Funding Secured/ Source</i>				<i>IRR</i>
						<i>National</i>	<i>Bank</i>	<i>Grant</i>	<i>Private</i>	
PL-M-31	Planning	M	50	2015	2020	-	-	-	-	8

# Romania

Project ID	Status	Road Type	% Increase in Traffic	Start year	End year	% Funding Secured/ Source				IRR
						National	Bank	Grant	Private	
RO-M-13	Program ming	M	27	2015	2020	-	-	-	-	-
RO-M-17	program ming	M	162	2015	2020	-	-	-	-	-
RO-M-18	Section 1: constructi on Section 2: design	M	37	Section 1: 2004 Section 2: 2010	Secti on 1: 2010 Secti on 2: 2012	-	-	-	-	-
RO-M-19	Program ming	E	27	2015	2020	-	-	-	-	-
RO-M-21	Design	M	28	2011	2013	-	-	-	-	-
RO-M-31	Design	M	26	2010	2013	-	-	-	-	-
RO-M-32	Design	M	26	2010	2013	-	-	-	-	-
RO-M-33	Design	M	27	2010	2013	-	-	-	-	-
RO-M-34	Design	M	28	2010	2013	-	-	-	-	-
RO-M-35	Design	M	29	2010	2013	-	-	-	-	-
RO-M-36	Program ming	M	27	2015	2019	-	-	-	-	-
RO-M-42a	Program ming	M	28	2015	2019	-	-	-	-	-
RO-M-42b	Design	E	27	2015	2020	-	-	-	-	-
RO-M-44	Design	E	40	2015	2020	-	-	-	-	-
RO-M-45	Design	E	40	2015	2020	-	-	-	-	-
RO-M-46	Design	E	40	2015	2020	-	-	-	-	-
RO-M-47	Design	E	40	2015	2020	-	-	-	-	-

# Romania

- The projects that involve a Motorway could be eligible to receive funds from EU funds, EIB, World Bank
  - they are at a considerably mature stage (design)
  - involve the construction of a Motorway
  - expected to have a high impact on traffic
  - a financial feasibility study is proposed to determine the IRR of the projects.
- Remaining projects that involve the construction of an Expressway, these could either receive national/regional funds or explore the PPP option.
- Currently a concession system for the construction of road projects is being promoted.

# Serbia

- **SM-H-12:** could be eligible to receive the remaining funding from EU funds, EIB, World Bank
  - currently under construction
  - Motorway road type
- Could receive national funds, in the case that no additional national projects are implemented at the same period.

<i>Project ID</i>	<i>Status</i>	<i>Road Type</i>	<i>% Increase in Traffic</i>	<i>Start year</i>	<i>End year</i>	<i>% Funding Secured/ Source</i>				<i>IRR</i>
						<i>National</i>	<i>Bank</i>	<i>Grant</i>	<i>Private</i>	
SM-H-12	Construct ion	M	NA	1990	2012	30		34		-

# Slovenia

- Could be eligible to receive funding from EU funds, EIB, World Bank
  - are at a considerably mature stage
  - Motorway type.
- Could also receive national funds from the National Motorway Construction Programme.

<i>Project ID</i>	<i>Status</i>	<i>Road Type</i>	<i>% Increase in Traffic</i>	<i>Start year</i>	<i>End year</i>	<i>% Funding Secured/ Source</i>				<i>IRR</i>
						<i>National</i>	<i>Bank</i>	<i>Grant</i>	<i>Private</i>	
SL-M-5	Design	M	-	2012		-	-	-	-	-
SL-M-5	Design	M	-	2011	2013	-	-	-	-	-



# Technical and Institutional Actions

- Careful and simultaneous consideration of both national and international perspectives.
- Secure technical standards for road sector.
- Ensuring the interoperability among the identified road projects.
- Ensure that state laws with respect to tendering and construction are appropriately harmonised with emerging European good practice.

# Conclusions

- A considerable amount of the total implementation cost for the realization of TEM Master Plan is “secured”.
- The analysis indicated that the projects that are more likely to be implemented are:
  - Motorway type
  - Expected to increase traffic by more than 15%.
- For Bosnia-Herzegovina, Bulgaria, Lithuania, Poland, Romania, Serbia and Slovenia, there are projects that have still not secured funding and that is one issue to be addressed.
  - Recommendations have been made on a country basis.
- Implementation of TEM Master Plan is a long-term process, requiring:
  - Political commitment
  - Continuous close cooperation amongst the TEM member countries, between them and their immediate neighbouring countries, the respective TEM PCOs and the UNECE
  - Follow-up actions

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