



# Project appraisal support in the transport sector in Romania and Bulgaria

Webinar on good practices and lessons learned for project assessment and selection in 2021-27

18 October 2024

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# Economic Appraisal in the framework of EU funds

2014 – 2020 Programming period	2021 – 2027 Programming period
<p><b>Regulatory framework</b>  <u>Common Provision Regulation (EU) 1303/2013</u>            Art. 101            Before a <b>major project</b> is approved, the managing authority shall ensure that the following information is available:</p> <p>...</p> <p>(e) A <b>cost-benefit analysis</b>, including an economic and a financial analysis, and a risk assessment.</p>	<p><b>Regulatory framework</b>  <u>Common Provision Regulation (EU) 2021/1060</u>            Art. 73.2            In selecting operations, the managing authority shall:</p> <p>...</p> <p>(c) ensure that selected operations present <b>the best relationship between the amount of support, the activities undertaken, and the achievement of objectives</b>;</p> <p>(d) Verify that <b>the beneficiary has the necessary financial resources and mechanisms to cover operation and maintenance costs</b> for operations comprising investment in infrastructure or productive investment, so as <b>to ensure their financial sustainability</b>.</p>
<p><b>Methodology</b>            The <b>methodology</b> to be followed is <b>included in legislation</b>, Commission Implementing Regulation (EU) 207/2015), and is <b>supported by the EC 2014 CBA Guide</b>.</p>	<p><b>Methodology</b>            There is <b>no reference in the legislation to the methodology</b> to be followed. <b>The EC 2014 CBA Guide</b>, complemented by <b>the Economic Appraisal Vademecum</b>, are to be used <b>on voluntary basis</b>, to set up a framework for project appraisal and selection, in line with international good practices.</p>
<p><b>Approval</b>  <b>All the major projects are approved by the Commission.</b></p>	<p><b>Approval</b>  <b>All the projects are approved by the Member State.</b></p>

# Main differences between 2014-2020 and 2021-2027 PP/1

Topic	2014-2020	2021-2027
	<u>Major projects</u>	<u>Projects</u>
Legal basis for economic appraisal	According to Art. 101(e) of Reg. 1303/2013, a CBA - including an economic and a financial analysis, and a risk assessment - <b>is mandatory in order to get the approval for the co-financing of major projects.</b>	<b>The use of economic appraisal will be left to discretion of the managing authority and of the monitoring committee</b> that will set up a framework for project appraisal and selection that is compliant with the requirements of Art. 73 of CPR. In particular, according to Art. 73.2 (c) the Managing Authority shall “ <i>ensure that selected operations present the best relationship between the amount of support, the activities undertaken and the achievement of objectives</i> ”. The use of economic appraisal tools should be adapted to the size and complexity of EU-funded projects.
Economic appraisal tool	CBA is mandatory for major projects <b>in any sector.</b>	A more flexible and proportional framework: <b>Other tools such as CEA and MCA – next to CBA - are proposed for voluntary use, based on sector and/or project’s type and scale</b> (see section 1.3).
Results of economic appraisal	As set out in Art. 101 of Reg.1303/2013, an economic analysis must be included in the CBA to compute the project’s economic performance. The <b>calculation of ENPV and ERR indicators is requested</b> to verify that <b>the project is worth of co-financing.</b>	It is a good practice to use the results of economic appraisal as one of the criteria in assessing and selecting project proposals in order to verify that the selected project is good value for money (as requested by CPR Art. 73.2 (c)).
Option analysis	According to Annex III to Reg. 2015/207, for major projects, the option analysis should be carried out in two steps. The first step looks at basic <b>strategic options</b> and is based on MCA. Once the strategic option is identified, the second step consists of a comparison of the specific <b>technological solutions</b> based on quantitative methods (simplified CBA or CEA). <b>A full-fledged CBA is then carried out on the selected technical option.</b>	A <b>simplified economic appraisal</b> (CBA, or CEA, or MCA) is an established good practice for screening and ranking options. When the project is limited in size, this would normally be sufficient to identify a preferred option and justify approval for its co-financing. When the project is large/strategic, or when the results of the simplified economic appraisal are inconclusive, a full-fledged economic appraisal should be carried out at subsequent stages of development of the proposal (see EAV section 1.2).
Analysis of financial performance	As set out in Art. 101 of Reg.1303/2013, a financial analysis must be included in the CBA to compute the project’s financial profitability indicators. The <b>calculation of FRR/C and FRR/K indicators is requested</b> (by Annex III to Reg. 2015/207) to verify that <b>the project is in need of co-financing.</b>	No provisions are made in the CPR to assess the project’s financial performance. <b>MSs are free to set up their methods and criteria to verify that the project is in need of co-financing.</b> For most cases, State aid rules will apply.

Source: *The Economic Appraisal Vademecum*

# Main differences between 2014-2020 and 2021-2027 PP/2

Topic	2014-2020	2021-2027
	<u>Major projects</u>	<u>Projects</u>
Analysis of financial sustainability	Annex III to Reg. 2015/207, requires an analysis of financial sustainability based on undiscounted cash-flow	Art. 73.2 (d) of the CPR requires to “ <i>verify that the beneficiary has the necessary financial resources and mechanisms to cover operation and maintenance costs</i> ”. Hence, <b>an analysis of financial sustainability shall be carried out where necessary.</b>
Financial discount rate (FDR)	According to Art.19 of Reg. 480/2014, a 4% discount rate shall be used as single reference parameter for all sectors in all MSs, except of projects falling under State aid rules.	In case a financial analysis with calculation of performance indicators is carried out, <b>MSs are free to assess their own country- and/or sector-specific FDR(s)</b> . In absence of national guidelines, adherence to State aid rules is recommended.
Determination of the appropriate Union support	In accordance with Art. 61 of Reg. 1303/2013 and Annex V to Reg. 1303/2013 and Section III of Reg. 480/2014, the outcomes of the Financial Analysis in the CBA are used to calculate the funding gap rate and, in turn, the intensity/level of the Union support (unless State Aid rules prevail).	According to Art. 73.2 (c) of the CPR “ <b>Member States need to ensure that the best relationship between the amount of support, the activities undertaken and the achievement of objectives</b> ”. This may imply that self-financing and/or bankability potential of an operation should be taken into account where relevant.
Reference period of the analysis	Annex I of Reg. 480/2014 provides a list of mandatory reference periods to be used by sector.	<b>No mandatory fixed parameters.</b> Indication of typical reference periods per sector is provided as indicative guidance, but project promoters/managing authorities can adjust them corresponding to the project’s economically useful life (see section 2.3 and EAV Part II).
Social Discount rate (SDR)	According to Annex III to Reg. 2015/207, a social discount rate of 5 % shall be used for major projects in Cohesion countries and 3 % for the other Member States.	<b>MSs are free to establish and use their own country-specific SDR</b> (see section 2.3). <b>3% can be used in absence of national approach.</b>
Type of benefits	Annex III to the. Reg. 2015/207 provides a list of minimum main economic benefits per sector to be considered in the economic analysis.	<b>No mandatory list of benefits.</b> Recommendations for typical benefits by sector are provided as indicative based on good practices (see EAV Part II).
Compliance-driven projects	If a major project, CBA is mandatory.	CEA is deemed to be sufficient to assess the economic viability of the project, regardless its scale (see EAV section 1.3).
National methodological frameworks	MS were encouraged to establish their own national methodological frameworks for economic appraisal.	<b>MSs are encouraged to follow or establish their own national methodological frameworks for economic appraisal.</b> As a complementary instrument to the (voluntary to use) EAV, a spreadsheet template is made available to the MSs. The template provides project promoters with practical guidance on format in content of CBA (or other EA tools). At the same time, it can be used by evaluators to assess projects.

Source: *The Economic Appraisal Vademecum*

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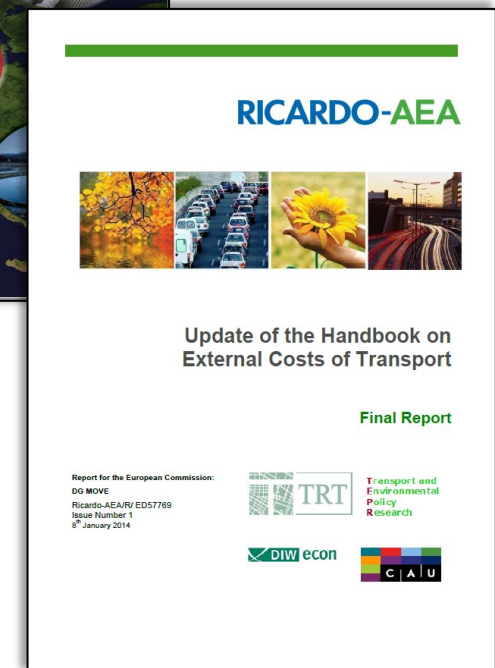
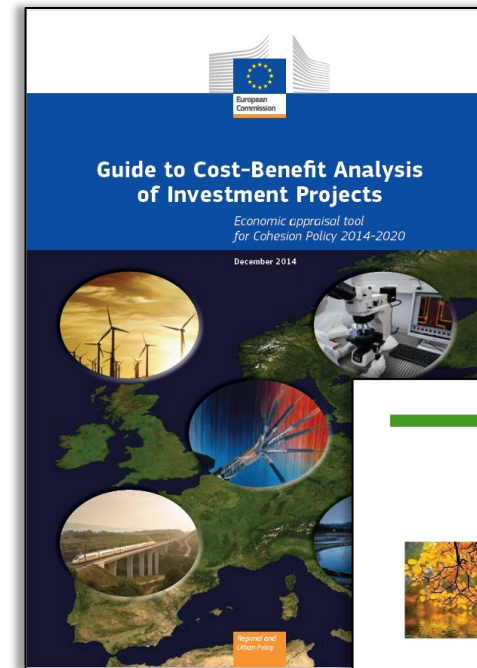
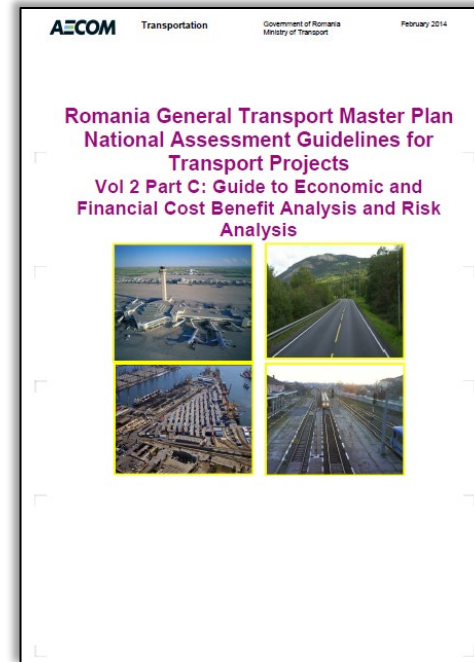
# Romanian CBA Guide Background

## First Romanian CBA Guide – Feb 2014

- ❑ Developed for the Romanian General Transport Masterplan, with JASPERS assistance.
- ❑ The source for the majority of unit costs for externalities is the Handbook on External Costs of Transport, 2008.



- ❑ It was used in the appraisal of all major transport projects in the 2014-2020 PP along with the EC 2014 CBA guide and the 2014 version of the DG MOVE's Handbook on the External Costs of Transport.





# Romanian CBA Guide Background

The Romanian transport managing authority

- decided that CBA will continue to be the principal tool used to appraise and prioritise transport investment projects in the 2021-2027 programming period.
- requested JASPERS assistance for:

**Updating parameter values** used in the appraisal of projects included in the 2021 – 2027 Romanian Transport Operational Programme;

Providing **methodological guidance** for the elaboration of economic appraisal in line with the latest EU Guidance available.

The CBA Guide is part of the Applicant Guide for the Beneficiaries of the 2021-2027 Operational Programme Transport (prepared in consultation with JASPERS).

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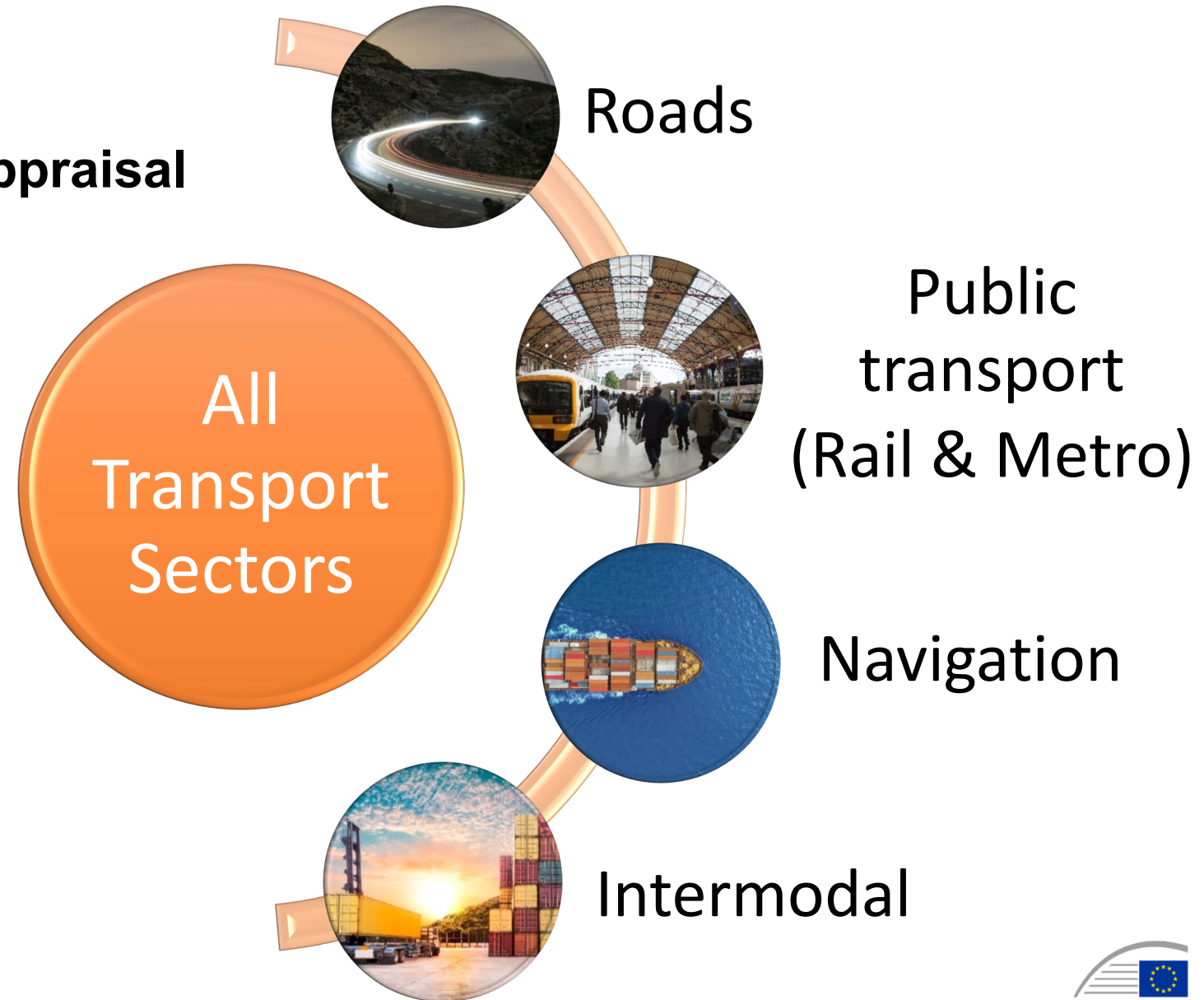
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# Content of the CBA Guide

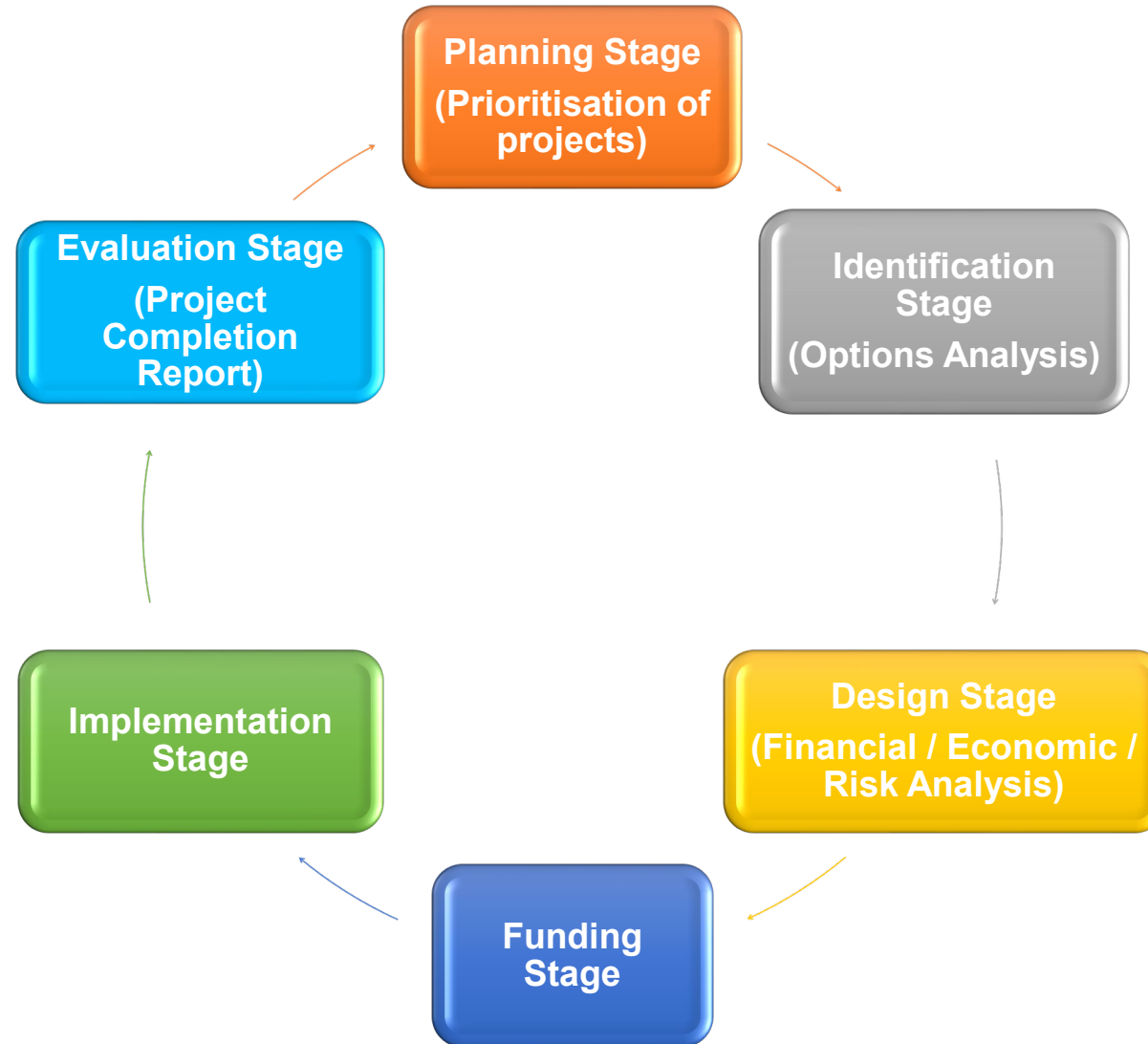
1. Overview of the economic appraisal

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# Overview of the economic appraisal in the project development cycle



# Economic appraisal tools

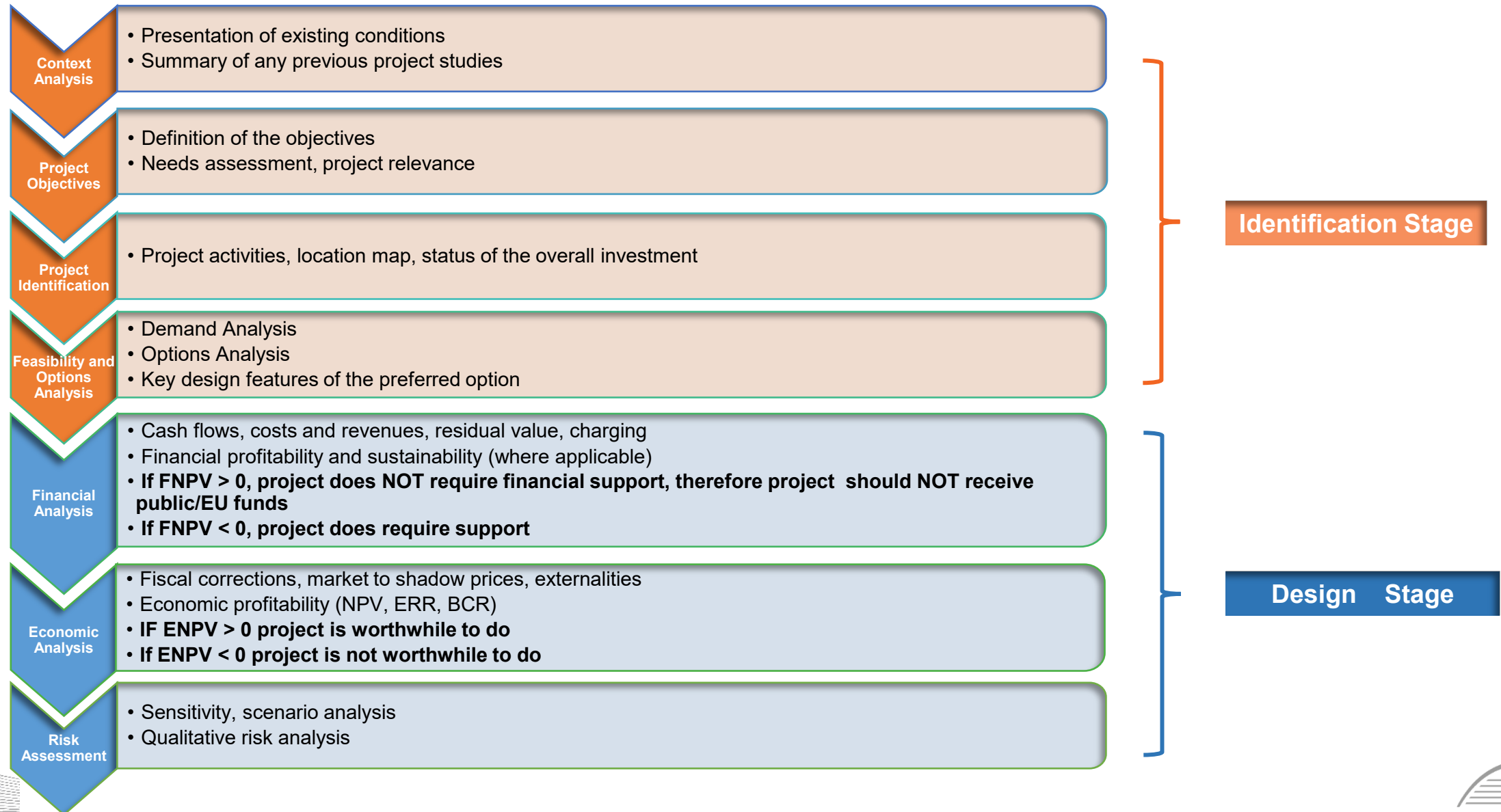
- Cost benefit analysis
- Cost-effectiveness analysis
- Multi-criteria analysis

Project Development Stage	Purpose	Recommended tools
<b>Identification Stage</b> – filtering	Filtering from a longer list of potential options identified to a shortlist of most relevant options (typically 2-5)	<b>MCA</b> including <b>CEA</b> or <b>CBA</b>
<b>Identification Stage</b> – detailed analysis	Comparing in more detail the shortlisted options to select the preferred alternative	<b>MCA</b> including <b>CEA</b> or <b>CBA</b>
<b>Feasibility Decision</b>	Evaluating if the proposed investment (preferred option) is of economic benefit for the society and is financially sustainable	<b>CBA</b> (e.g., Economic / Risk Analysis)
<b>Evaluation Stage</b>	Ex-post analysis of projects with a view to seeing whether early-stage estimates of cost and project demand were accurate, and what were the lessons learned in implementation.	<b>Quantitative</b> and/or <b>Qualitative</b> assessment

# Overview of the economic appraisal – Choice of tool

Transport Sector	Investment type	Option analysis to select preferred option		Selected option for investment approval	
		Tools	Validation requirements by MA TP	Tools	Validation requirements by MA TP
ROADS	New motorways, expressways, interurban single carriageway roads	MCA including CBA	Yes, all projects	CBA	Yes, all projects
	By-passes	MCA including CBA	Only if > €50m or cost per km > €10m	CBA	Only if > €50m or cost per km > €10m
	Road rehabilitation, upgrading	MCA including CBA	Only if > €50m or cost per km > €2m	CBA	Only if > €50m or cost per km > €2m
	Road safety	Prioritisation based on CEA/MCA	Only if > €50m	CEA or CBA	Only if > €50m
RAIL	Rail corridor sections	MCA including CEA or CBA	Yes, all projects	CBA	Yes, all projects
	Metropolitan rail	MCA including CEA or CBA	Yes, all projects	CBA	Yes, all projects
	ERTMS	Not necessarily required in quantitative terms	Only if > €100m	CEA or CBA	Only if > €100m
	Rail safety (e.g., level crossings)	MCA including CEA or CBA	Only if > €50m	CEA or CBA	Only if > €50m
	Rail stations	MCA including CEA or CBA	Only if > €20m	CEA or CBA	Only if > €20m
	Bridges rehabilitations	MCA including CEA or CBA	Only if > €50m	CEA or CBA	Only if > €50m
	Rolling stock	Not necessarily required in quantitative terms	Only if > €50m	CBA	Only if > €50m
WATER	Ports infrastructure	MCA including CEA or CBA	Only if > €50m	CBA	Only if > €50m
	Fairway	MCA including CEA or CBA	Only if > €50m	CBA	Only if > €50m
INTERMODAL	IM Terminals (IMT)	Market analysis key to confirm demand, size and location	Only if > €10m	CBA	Only if > €10m
URBAN	Metro	MCA including CEA or CBA	Yes, all projects	CBA	Yes, all projects

# CBA Guidelines – Appraisal steps



# CBA Guidelines – Demand Analysis

2022 – Update of the Romanian Road Transport Model under JASPERS assistance:

**Updated Model Base year from 2017 to 2019**

**Improved Model Functionality by:**

- incorporating distance-related costs (VOC) and border crossing time penalty into the assignment algorithm;
- defining new link types for the mountainous roads to estimate speeds more accurately, especially for HGVs;

**Updated forecast** by revising

- the regression model and considering latest available information on socio-economic variables
- updating future network supply.

**Result: a more reliable transport model** that provides realistic input for the CBA.



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# Romanian Transport Appraisal Parameters - RomTAP

- Creates a level playing field for appraisal of transport projects (Excel file with parameter values)
- Observes the most recent EU policies (carbon prices, vehicle electrification, etc.)
- Allows for considering different scenarios (fuel efficiency, fuel cost evolution, etc.)
- Provides different level of aggregation for the unit costs
- Based on established best practice, reliable data sources
- Allows for automatic updating of parameter values to specified price base year
- End users are consultants or specialists appraising transport projects
- It will be a living document, published online, updated as required

# Romanian Transport Appraisal Parameters - RomTAP

## RomTAP

v1.0.13

November 2022

Romania Transport Appraisal Parameters

A database of parameter values for use in the appraisal of transport projects



### Contents

Category	Parameter group	Worksheet	Table title or page description
Information		<b>Cover</b>	Cover page
		<b>Contents</b>	Contents (this page)
		<b>Sources</b>	Details of data sources
		<b>Changelog</b>	Record of version numbers and changes
General	General parameters	<b>A. General parameters</b>	General parameters for setting values
		<b>B. Annual Parameters</b>	Annual economic parameters
		<b>C. Conversion factors</b>	Conversion factors from financial costs to economic costs
Infrastructure	O&M costs	<b>D. O&amp;M</b>	Operation and maintenance costs by mode
Consumer / producer		<b>E. Pax trip purpose</b>	Trip purpose split by passenger mode
		<b>F. Pax veh occupancy</b>	Average number of passengers per vehicle by passenger mode
		<b>G. Freight veh loading</b>	Average load in tonnes per vehicle by freight mode
	Value of time	<b>H. Pax VoT</b>	Values of time per person by trip purpose and year
	Operating costs	<b>I. Road veh fleet</b>	Road vehicle fleet composition by fuel type, year and scenario (current trend and Paris Agreement)
		<b>J. Fuel costs</b>	Fuel cost by type of fuel, year and scenario
		<b>K. Fuel consumption</b>	Formulae for calculating road vehicle fuel consumption and sample output tables
		<b>L. Non-fuel costs</b>	Formulae for calculating road vehicle non-fuel costs
		<b>M. TOCs</b>	Train operating costs
		<b>N. IWTOCs</b>	IWT vessel operating costs by year and scenario
	External costs	<b>O. Road accidents</b>	Road accident costs and accident rates by type of road and year
		<b>P. Rail &amp; IWT accidents</b>	Rail and IWT accident costs
		<b>Q. Noise</b>	Noise costs
<b>R. GHG</b>		GHG costs	
<b>S. Air pollution</b>		Air pollution costs	

# RomTAP – Unit costs/1

Unit costs – 2021 prices	Methods and sources
VoT	<ul style="list-style-type: none"> <li>• Based on HEATCO (meta-analysis) for passengers</li> <li>• Based on JASPERS Guidance for freight</li> <li>• Disaggregated by trip scope</li> </ul>
VOC	<ul style="list-style-type: none"> <li>• Based on WebTAG, considering the 2015 UK fleet as correspondent for 2021 Romanian fleet in terms of fuel/energy efficiency</li> <li>• RO fleet composition (petrol, diesel, electric)</li> <li>• RO fuel price</li> <li>• Forecasts of RO fleet electrification – 2 scenarios               <ul style="list-style-type: none"> <li>• Base case scenario (Deloitte study)</li> <li>• Adapted scenario (EC decarbonisation policy)</li> </ul> </li> </ul>
Accidents	<ul style="list-style-type: none"> <li>• Handbook on the External Costs of Transport (2019)</li> <li>• Distinguishing: fatalities/severe injuries/light injuries based on local data</li> </ul>

# RomTAP – Unit costs/2

Unit costs – 2021 prices	Methods and sources
GHG Emissions	<ul style="list-style-type: none"> <li>• Based on RO fleet composition – from VOC calculations (fuel/energy consumptions)</li> <li>• Shadow cost of carbon EIB Group Climate Bank Roadmap</li> </ul>
Air pollution	<ul style="list-style-type: none"> <li>• Handbook on the External Costs of Transport (2019), WebTAG emission curves</li> </ul>
Costs of noise	<ul style="list-style-type: none"> <li>• Handbook on the External Costs of Transport (2019)</li> </ul>
O&M	<ul style="list-style-type: none"> <li>• NCARI costs for routine and periodic maintenance works</li> </ul>

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# Further steps - Romania

Further steps	JASPERS Assistance
<p>Development of institutional capacity within the MA and their beneficiaries to ensure that the project appraisal follows the new CBA Guidelines</p>	<ul style="list-style-type: none"> <li>• General and on-the-job trainings</li> </ul>
<p>Development of country specific key parameters stemming from studies and survey work within the framework of updating the National Transport Model</p>	<ul style="list-style-type: none"> <li>• Supporting the MT with the development of ToRs</li> <li>• Assisting with reviewing the outputs of the studies and with the update of RomTAP</li> </ul>



# Further steps - Bulgaria

Further steps	JASPERS Assistance
<p>Review and set-up parameter values to be used for the appraisal of Bulgarian transport projects included in the Bulgarian Programme Transport Connectivity 2021-2027</p> <p>Development of the Bulgarian Transport Appraisal Parameters database</p>	<ul style="list-style-type: none"> <li>Supporting the MA with the update of the parameter values to be used for the appraisal of Bulgarian transport projects in the 2021-2027 programming period</li> </ul>
<p>Development of institutional capacity for project appraisal within the MA</p>	<ul style="list-style-type: none"> <li>General and on-the-job trainings</li> </ul>

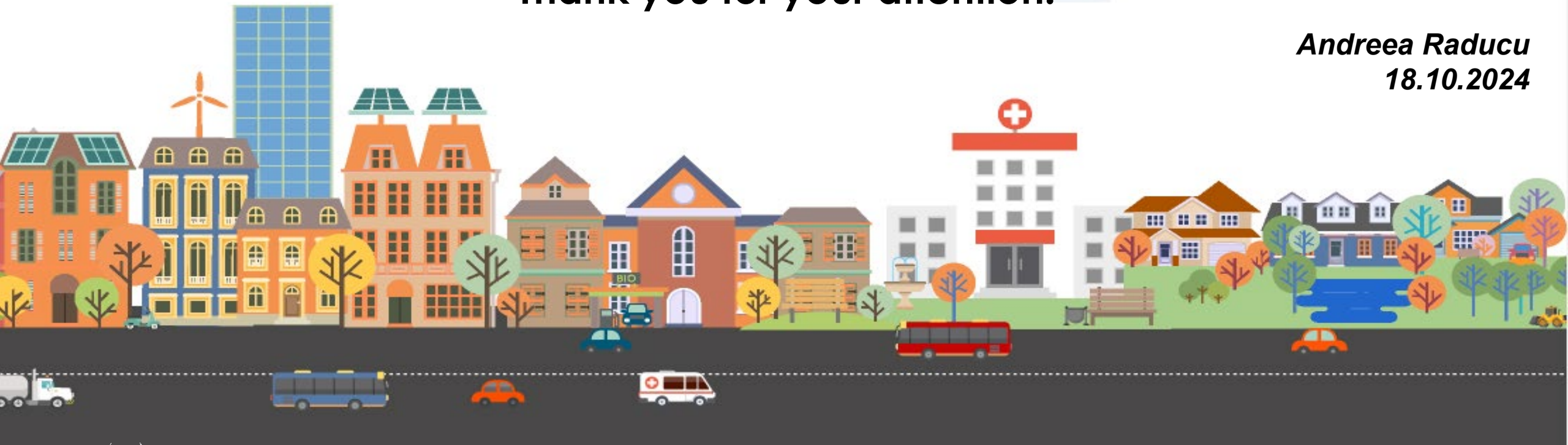


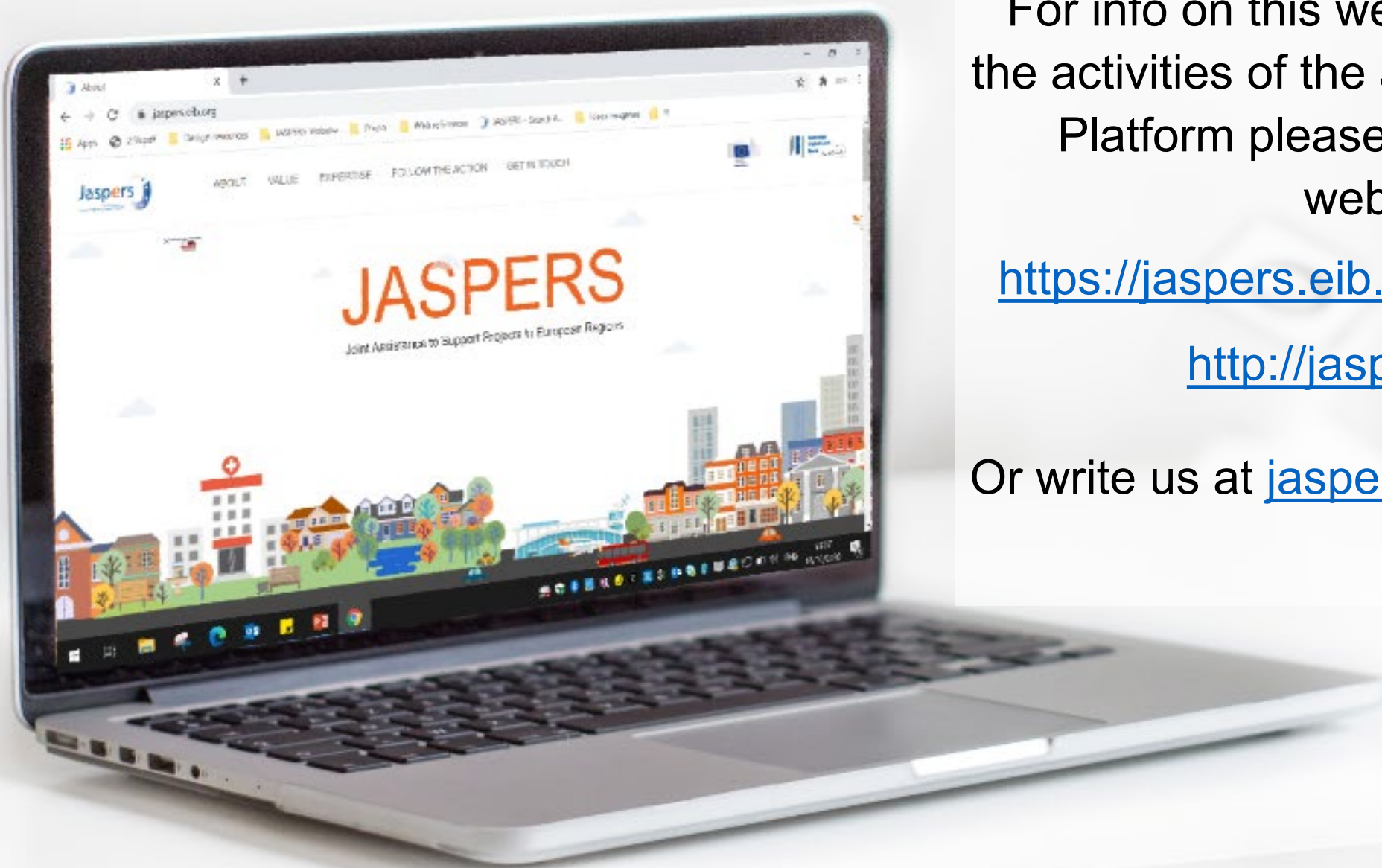


# Project appraisal support in the transport sector in Romania and Bulgaria

Thank you for your attention!

*Andreea Raducu*  
**18.10.2024**





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