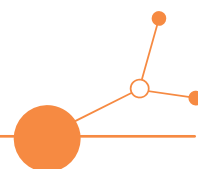


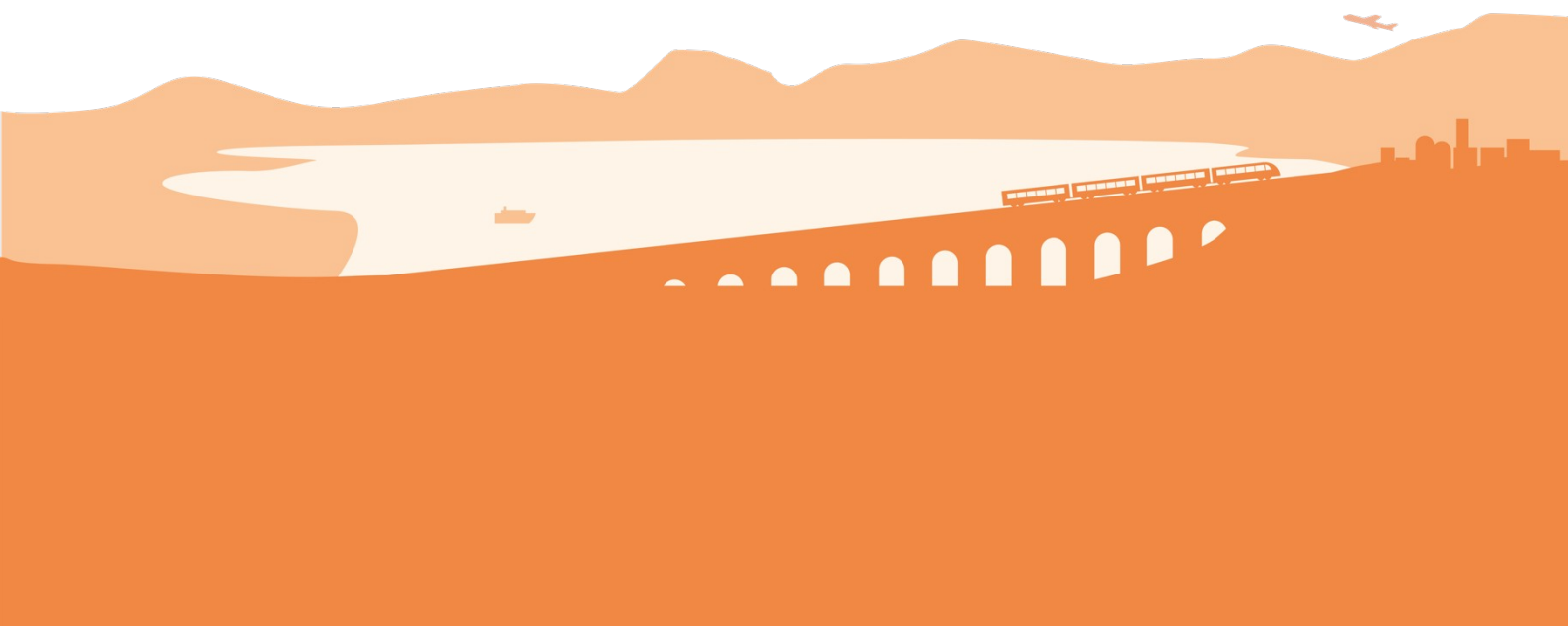
Rail4Regions

Final solutions for Decision-making Tool for Industrial Sidings



Version 1

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A. Introduction

This document presents a comprehensive technical overview and practical guide for the Decision-Making Tool for Industrial Sidings, developed within the Rail4Regions project.

The increasing demand for efficient, environmentally sustainable logistics solutions across Europe has led to renewed interest in rail freight transport. Industrial sidings, as key connectors between rail infrastructure and industrial production zones, play a vital role in supporting multimodal freight strategies. However, many existing sidings remain underutilized or disconnected due to insufficient planning, lack of investment, or outdated operational practices.

This tool aims to offer a structured and flexible approach for evaluating both existing and potential siding locations based on objective, transparent criteria. It supports a wide range of stakeholders — policy makers, infrastructure managers, industrial operators, and urban planners — in making informed decisions on siding revitalization, construction, and integration into broader transport strategies. The potential users include all institutions that want to evaluate the infrastructural conditions for the use of sidings in a region. The methodology is adaptable to different national contexts, allowing users to align evaluation parameters with local development goals, environmental priorities, and economic strategies.



B. Description of the Decision Making Tool

The Decision-Making Tool is designed as a modular, user-oriented system that evaluates sidings based on a set of customizable, weighted criteria. It facilitates comparison across different sites by quantifying qualitative and quantitative indicators such as volume potential, investment needs, infrastructure conditions, and proximity to mainline networks.

The output is a clear ranking and categorization of sites, enabling users to identify priority locations for further action.

Core benefits of the tool include:

- Transparent decision support based on evidence and data
- Strategic prioritization of infrastructure development
- Enhanced coordination between stakeholders
- Promotion of modal shift and emission reduction
- Better alignment with regional planning and funding instruments



C. Methodology and Evaluation Framework

The methodology consists of a multi-criteria analysis (MCA) approach. Each siding or potential site is assessed based on selected parameters, grouped into categories such as operational efficiency, technical readiness, economic impact, and strategic relevance. Each criterion is assigned a weight reflecting its relative importance. Users can adjust the weighting to match national or project-specific priorities.

Evaluation Parameters (Example):

- Frequency of rail services (trains/week)
- Annual volume handled (wagons/year)
- Siding length and axle load (m / tons)
- Investment requirements (low, medium, high)
- Connection to industrial/logistics clusters
- Support in regional or national planning documents
- Environmental impact (carbon savings, noise, land use)

All data are normalized and scored to allow comparison. The final score is calculated as the weighted sum of all parameters.

D. Required Input Data and Data Collection

Effective use of the tool requires reliable and complete data sets. Data sources may include railway infrastructure databases, freight operator records, municipal development plans, spatial data (GIS), and industry surveys.

Types of Data Required:

- Technical: siding length, condition, load capacity, electrification



- Operational: volume trends, frequency, service type
- Geographic: location, proximity to major lines, access roads
- Strategic: relevance in freight corridors, regional development zones
- Economic: potential cost estimates, ROI calculations

To support data gathering, a template is provided for users to systematically input relevant values per location.

Besides the input data, the user needs to decide himself on a weighting of the criteria. This may follow independent priorities of the institution or region.

E. User Guidelines – How to Use the Tool

The Decision-Making Tool can be implemented as an Excel-based template or integrated into a GIS platform. A future web-based interface may further improve accessibility and automation. Below are the typical steps in its application:

1. Define the objective of the evaluation (revitalization, expansion, investment planning).
2. Identify candidate sidings or locations to be assessed.
3. Collect all necessary data per parameter.
4. Input the data into the tool template.
5. Set or confirm the weights for each criterion.
6. Run the analysis and generate the ranking.



7. Review the output and generate graphs/maps as needed.
8. Use results to inform policy, funding decisions, or business strategies.

It is recommended to perform sensitivity analysis by adjusting weights and comparing how the rankings change under different scenarios.

F. Practical Example – Pilot Application in Slovenia

A pilot application was conducted in Southeast Slovenia. Seven existing sidings and six potential industrial areas were analyzed. locations such as Vipap Videm Krško and Grosuplje demonstrated high scores due to their rail connectivity, traffic volumes, and moderate investment needs.

A sample evaluation table is provided below:



Location	Score	Type	Recommendation
Vipap Videm Krško	87	Existing Siding	Prioritize maintenance
Grosuplje	84	Potential Site	Investment planning
Ivančna Gorica	79	Potential Site	Feasibility study
Hoja Žaga	41	Closed Siding	Reconstruction needed

This case illustrates the practical relevance of the tool and its capacity to support investment planning across regions.

G. Conclusions and Recommendations

The Decision-Making Tool for Industrial Sidings represents a best-practice approach for aligning rail freight development with sustainable logistics planning. It offers flexibility, transparency, and adaptability to a wide range of user needs and policy



goals. The tool is particularly helpful if the basic need has already been identified and the primary aim is to prioritize or compare possible solutions for example on a route or within a region, as the final scores allow a satisfactory comparison with each other, but possess minimal absolute significance.

Recommendations for Further Use:

- Apply the tool in cross-border planning scenarios
- Integrate the tool with digital GIS and transport modeling systems
- Promote training among planners, operators, and regional authorities
- Ensure regular updating of the input data and evaluation parameters

The tool can also contribute to EU-wide initiatives on modal shift, TEN-T corridor development, and regional cohesion.