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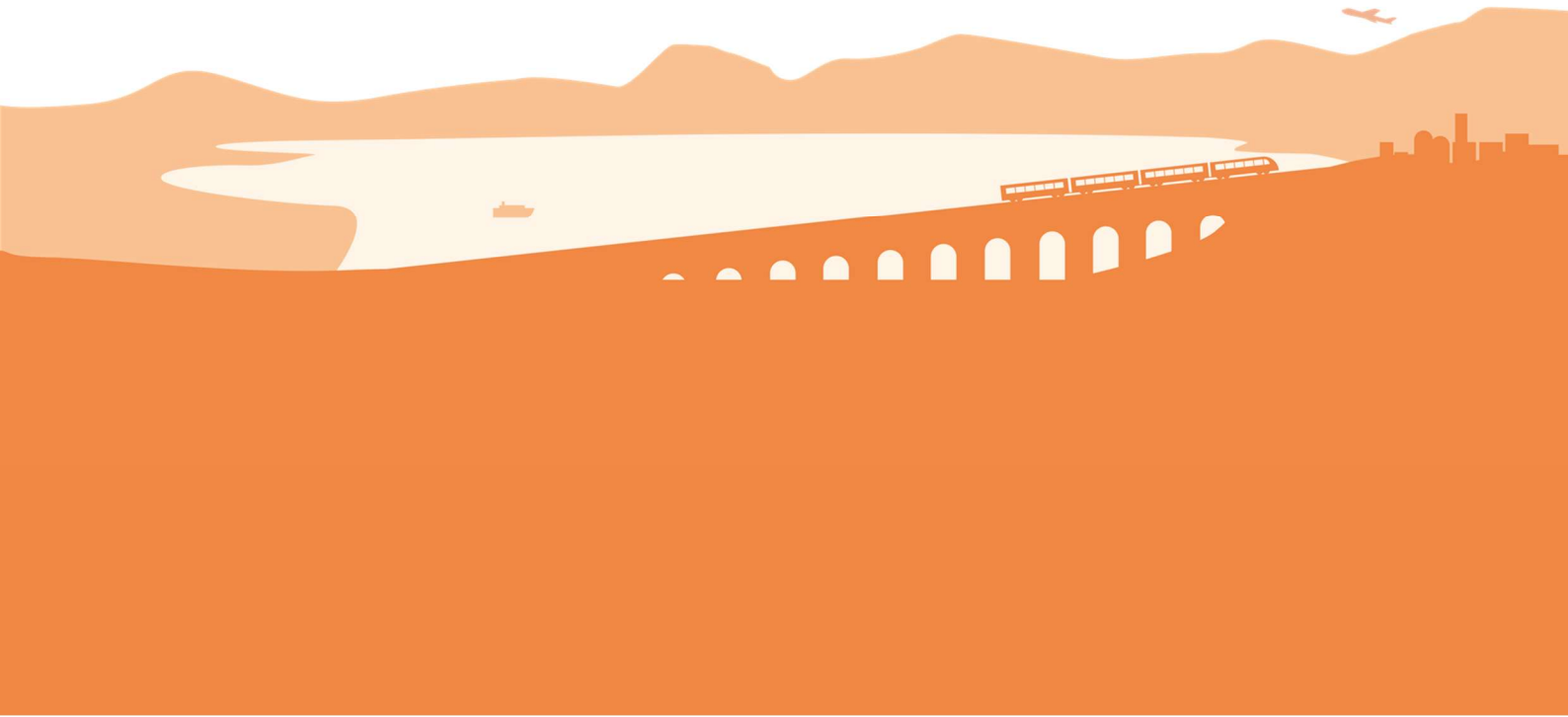
Rail4Regions

D.3.4.2
ACTION PLAN

Dél alföld Region, Hungary

Final version

January 2026



A. General information

Partner Organization

- **Name of Partner Organization**: Rail Cargo Hungaria Zrt.
- Region **Covered**: Dél-Alföld, Hungary

  The Dél-Alföld Region (Bács-Kiskun, Békés, and Csongrád-Csanád counties) is located in the southeastern part of Hungary. It is one of the largest regions in terms of area, with significant agricultural traditions, but ***low population density*** *and* ***uneven population distribution***.

B. Regional context

Policy Application Processes

In Hungary, transport and spatial planning policies are primarily shaped at the national and county (vármegye) levels, with limited strategic planning at the regional (NUTS-2) level such as in the Dél-Alföld region. The development and revitalization of industrial sidings are addressed through several national-level strategies and sectoral frameworks.

At the national level, the **Hungarian Railway Development Strategy (OVFS)** outlines the long-term vision for rail infrastructure, emphasizing the importance of increasing rail freight capacity, including the modernization and integration of industrial sidings. The strategy supports the development of infrastructure capable of handling 225 kN axle loads and 740-meter freight trains, in line with EU TEN-T standards. This is linked to the first measure of the action plan: the creation of an industrial siding database, which provides a transparent, up-to-date information base for development decisions and authorization processes.

The **National Logistics Strategy** and the **National Transport Infrastructure Development Strategy** also highlight the need to improve multimodal freight transport and promote rail as a sustainable alternative to road transport. These documents recognize industrial sidings as critical nodes in the logistics chain, particularly for bulk and high-volume goods. The second measure of the action plan—prioritizing renovation and new construction needs—directly supports these objectives by enabling the ranking of investments and the efficient allocation of resources.

The aim of the regional development and spatial planning system is to ensure the balanced development of the country's regions, reduce regional disparities and ensure the efficient and targeted use of EU funds. Governance takes place at several levels: national, county and local, but it also has an EU dimension, as it is largely linked to EU cohesion policy. However, the role of the regional level in the system is insignificant; following the 2012 municipal reform, counties were granted strategic regional development powers.

Spatial planning is guided by the **National Spatial Development Concept (OTK)**, which sets out the framework for regional and local development. While the Dél-Alföld region does not have a dedicated regional transport strategy, its development priorities are reflected in the county-level territorial development programs of **Bács-Kiskun**, **Békés**, and **Csongrád-Csanád** counties. These county strategies emphasize the modernization of rail infrastructure, the integration of industrial parks into the rail network, and the development of logistics hubs in key urban centers such as Kecskemét, Békéscsaba, and Szeged.

Planning and implementation are supported by the **TeIR (Territorial Information System)**, a national platform that provides access to spatial data and development plans at all administrative levels. However,

the lack of a unified, up-to-date regional transport strategy for the Dél-Alföld region presents a challenge for coordinated planning and investment in industrial sidings.

In summary, while national strategies provide a strong policy foundation for the development of industrial sidings, regional-level coordination remains fragmented. The Action Plan aims to bridge this gap by aligning local needs with national and EU-level objectives, and by fostering collaboration among county governments, infrastructure managers, and private stakeholders. The actions defined in the action plan are not standalone technical steps but key elements in the practical implementation of the strategies: creating the database establishes an information foundation for regulatory and funding decisions, while preparing the priority list serves as a tool for ranking investments and shaping support schemes.

Transport and spatial planning actors

The Dél-Alföldi region, which comprises the counties of Bács-Kiskun, Békés and Csongrád-Csanád, has a distinctive transport geography and economic structure. Transport and spatial development processes in the region require coordinated action from a wide range of institutional and market actors, particularly with regard to infrastructure development and logistics capacity optimisation. Public policymaking and implementation are carried out within a complex institutional network involving state, municipal, and market actors.

Territorial governance essentially operates at multiple levels. Based on Act CII of 2023 on Spatial Development, Parliament adopts the National Development and Spatial Development Concept (NDPC), which is prepared by the Minister responsible for Spatial Development and presented by the Government. The Minister for Spatial Development also runs a Spatial Development Service, which provides preliminary opinions on national and county sectoral development concepts and programmes. This ensures the efficient performance of spatial development tasks and involves the counties, taking their comments into account. The Service also ensures that the principle of partnership is applied in planning and implementation.

At county level, the municipalities are responsible for spatial development planning and coordination. During the 2021–27 planning period, counties will promote development objectives through their own Integrated Territorial Programmes (ITPs).

Government agencies coordinate the implementation of development policy through Operational Programmes, particularly the Operational Programme for Territorial and Urban Development Plus (TOP Plus 2021-2027).

The National Infrastructure Development Corporation (NIF) is responsible for large-scale transport investments, while the Hungarian Public Road Nonprofit Ltd. operates the national road network. MÁV Pályaműködtetési Zrt. and its subsidiaries provide the railway transport infrastructure and operation.

Logistics, industrial and agricultural companies have a direct interest in adequate transport infrastructure. Private railway operators in the region, such as Rail Cargo Hungaria Zrt., CER Hungary Zrt. and MMV Magyar Magánvasút Zrt., play a key role in maintaining the utilisation and efficiency of the railway lines.

When formulating transport and spatial development policies, a number of cooperation channels and interest coordination mechanisms exist between different actors, although their effectiveness and level of formalisation varies. County councils consult with economic and civil society actors during planning periods, particularly when a project affects industrial, agricultural or logistical infrastructure directly.

Participation in development policy programmes provides an opportunity for public–private cooperation. Another forum for cooperation is the work of various regional and sectoral chambers, clusters and development agencies, which play an integrating role in coordinating development ideas.

Sidings are particularly important for the region's economic operators, but they face many challenges:

- Infrastructure obsolescence: around half of the domestic sidings are decades old and often do not meet modern logistical requirements, making their modernisation uneconomical.
- Administrative burdens: the complexity of the authorisation and regulatory environment for the construction and renewal of sidings is an obstacle to investment.
- Financing difficulties: securing the necessary funding is problematic for many companies.
- Market restructuring: the dominance and flexibility of road transport has led many small and medium-sized enterprises to switch to road logistics, which threatens the long-term viability of rail connections.

The institutional system of transport and spatial development in the Dél-Alföld region is complex, requiring coordinated cooperation between the public and private sectors to achieve public policy objectives. Although formal mechanisms in the form of legislation and development policy instruments exist, cooperation between the relevant actors remains fragmented and project-specific in many cases. The situation with industrial sidings is particularly sensitive, requiring the paramount role of public regulation and funding, as well as business cooperation and long-term planning for successful development. The effectiveness of future transport development policy therefore depends on its ability to establish structured, sustainable partnerships between regional stakeholders.

C. Adopted solutions

The Rail4Regions project has developed solutions to improve rail freight transport. Among these solutions, the solutions related to single wagonload traffic in the Dél-Alföld region, i.e. solution #3.2 (Policy and regulatory support), solution #3.1 (Technical solution: Digital Automatic Interconnection (DAC)), solution #3.3 (Financial issues, subsidies) would have the greatest impact on potential switching from road to rail, while solution #2. Solution #2 (Adoption of specific decision tools for existing industrial sidings and existing industrial sites) and Solution #1 (Free access online portal visualizing existing loading points and displaying existing rail networks, business locations and industrial sites) have a smaller but not negligible impact.

These solutions are not isolated measures but are closely aligned with broader development and investment programs such as the European Green Deal, the development of the TEN-T network, and the National Railway Development Strategy. The solutions related to single-wagon traffic help maintain and increase traffic levels and prevent consignments from being diverted to road transport due to the lack of alternative options. The solutions targeting industrial sidings create opportunities for door-to-door rail transport, offering companies direct rail access, while the online portal illustrating loading points can provide information—and thus access to rail freight transport—for those who do not have their own industrial siding.

These solutions also directly address the region’s specific transport challenges. Many companies ship their consignments via single-wagon traffic, and although the region has nearly 200 industrial sidings, the vast majority are out of use and in severely degraded technical condition. Increasing the share of rail freight transport contributes to environmental sustainability by reducing road traffic and harmful emissions. Investments related to industrial sidings stimulate socio-economic development, create new jobs, and strengthen logistical capacities. Taken together, these measures contribute to enhancing the region’s competitiveness and establishing a sustainable transport system.

D. Stakeholder Engagement

During the capacity building workshop and subsequent consultations with key regional stakeholders, it became evident that the political support for extending the national single wagonload subsidy scheme into a new multi-year period has become increasingly uncertain. Although this issue remains relevant for the future of rail freight in Hungary, the lack of clear commitment from decision-makers has limited the feasibility of including related actions in this Action Plan. As a result, the planning process has focused on another strategically important and actionable area: the revitalization and development of industrial sidings. This shift in focus reflects both stakeholder consensus and the need to align proposed actions with realistic policy and funding prospects. Please detail **how** stakeholders were consulted during the development of the Action Plan

The list of **key stakeholders** consulted

- Ministry of Construction and Tansport
- MÁV Pályaműködtetési Zrt. (Railway infrastructure manager)
- Hungrail Hungarian Railway Association

E. Proposed actions

1. Action #1: CREATING A SIDINGS DATABASE

- Objective: Establish a comprehensive inventory of all industrial sidings in the Dél-Alföld region
- Description: Collection of technical, operational and ownership data, creation of a unified and official (public authority) database, uploading of data. Currently, there is no consistent and up-to-date database on siding at national or regional level. This would be a first step towards addressing the issue of maintaining and improving siding.
- The multi-level public planning framework relevant to this action, covering:
  - European Level:
    - The European Green Deal (EGD)

      The aim is to decarbonise the transport sector and encourage a shift in modes of transport from road to rail. The development of sidings will enable industrial sites to be connected directly to the rail network, thereby reducing the need for road transport.
    - TEN-T (Trans-European Transport Network) Directive:

      The TEN-T network aims to develop efficient multimodal transport infrastructure. Systematising data on railway sidings is a prerequisite for integrating these facilities into the TEN-T logistics chain.
    - EU Rail Strategies (e.g. the Sustainable and Smart Mobility Strategy)

      Aims to increase the share of freight transport by rail. A lack of data on sidings hinders the efficient use of EU funds and targeted improvements.

- National Level:

  Act CLXXXIII of 2005 on Rail Transport

  This provides that any siding in use must be operated under an official licence, and that the operator is responsible for maintaining the condition of the track. The database will help clarify official records and make the authorisation process more transparent.

- Regional Level:

  The county-level development programs of the three counties in the Dél-Alföld region (Bács-Kiskun, Békés, Csongrád-Csanád), prepared within the framework of the TOP Plusz 2021–2027 program, contain several objectives that are directly or indirectly related to the development of industrial sidings and rail logistics. The most relevant goals are summarized below:

  Bács-Kiskun County
  - Economic development: Development of industrial parks and logistics centers, especially around Kecskemét.
  - Transport infrastructure development: Improving rail accessibility of county economic zones.
  - Sustainable mobility: Promoting environmentally friendly transport modes, including rail freight.

  Békés County
  - Development of logistics connections: Establishment of an intermodal logistics center in the Békéscsaba area.
  - Modernization of rail infrastructure: Development of the Békéscsaba–Lőkösháza railway line, including the integration of industrial sidings.
  - Strengthening economic areas: Industrial-logistics developments in the districts of Mezőkovácsháza, Sarkad, and Orosháza.

  Csongrád-Csanád County
  - Regional economic development around Szeged: Development of knowledge-based industry and logistics services.
  - Strengthening rail connections: Development of the Szeged–Röszke line and rail integration of industrial areas.
  - Sustainable transport: Increasing the share of rail freight in the region.

  All three county programs emphasize the need to develop rail infrastructure, particularly to serve industrial-logistics areas. Transport investments linked to economic development goals appear in each case, directly or indirectly affecting industrial sidings. The promotion of rail freight from a sustainability and environmental protection perspective is also a recurring element. These objectives are fully aligned with the directions of the Rail4Regions Action Plan.

- The private planning framework

The success of the planned industrial siding database in the Dél-Alföld region depends heavily on the active involvement of private sector stakeholders. These actors are not only the primary data holders but also the main beneficiaries of a more transparent, efficient, and development-oriented rail freight ecosystem.

- Key Private Sector Stakeholders
  - Owners and operators of industrial sidings, as well as owners of the land beneath the sidings, including:
  - Manufacturing companies (e.g., food, chemical, construction materials, automotive)

  - Energy and utility service providers
  - Agricultural and food processing enterprises
- Rail logistics service providers
- Shunting service companies operating on private sidings
- Operators of industrial parks and logistics centers

- Sectoral associations:
  - MLSZKSZ (Hungarian Association of Logistics Service Centres)
  - HUNGRAIL Hungarian Railway Association
  - HUPRA (Hungarian Private Rail Association)
  - VAPE (Association of Rail Track Users)

The private actors to be involved should and can be encouraged to provide data, for example through:

- Access to future development funding: Only sidings included in the official database may be eligible for EU or national infrastructure support.
- Visibility and benchmarking: Participating companies can benefit from being part of a regional logistics map and performance comparison.

- Activities:

1. Project preparation and planning

- Define the objectives and scope precisely, including the type of siding and data to be collected.
- Mapping data sources and clarifying access rights.
  - MÁV and GYSEV: Official records (e.g. Network Statement Annex 2.2.2-3).
  - Railway undertakings
  - Industrial siding owners: company records and technical documentation.
  - Authorities: licensing data (e.g. operating licences).
- Identification of partners: authorities, MÁV, GYSEV, industrial parks and companies.

Milestone: Project kick-off workshop and stakeholder mapping.

2. Development of a data collection framework

- - Definition of data categories:
  - Technical data: length, axle load, connection point, track quality
  - Operational data: frequency of use, serving railway company, shunting possibilities
  - Ownership data: company name, industry, contact person
  - Status: active, inactive, dismantled or under development
- Data protection and legal framework: GDPR compliance and data management agreements.
- Digital platform preparation: database structure and interface mapping.

Milestone: creating data collection templates and prototyping the digital database.

3. Comprehensive Data Collection

- Involvement of data providers: industrial siding operators, owners, and landowners
- Verification and validation of data, including on-site inspections and technical documentation where necessary
- Stakeholder feedback: checking data points and filling in missing information

Milestone: Data is available for all industrial sidings

4. **Database Population**
   - Automated data processing and filtering based on parameters

   Milestone: Publication of the first complete version of the database

5. **Communication and sustainability:**
   - Creation of a public database or map portal.
   - Establish an annual update mechanism.
   - Link to other projects, e.g.: TEN-T, Interreg and national logistics developments

   Milestone: Adopt a database maintenance and update protocol

- Responsible Actors:
  - Építési és Közlekedési Minisztérium
  - MÁV Pályaműködtetési Zrt.

- Challenges and Requirements
  - Political:

    Multi-stakeholder coordination: the project involves the Ministry of Construction and Transport, MÁV, GYSEV and private companies.

    Requirement: policy support for the project objectives, in particular from the transport authority.

  - Environmental protection:
    - Green transport targets: the project is in line with the EU Green Deal and the national climate strategy.
    - Sustainability benefits: The use of siding reduces road freight, noise and CO_2 emissions.
    - Environmental permitting: Environmental impact assessments may be required for new siding or renovations.

    Requirement: Environmental benefits should be emphasised in project communication.

  - Financial:
    - Data collection and validation costs: on-site visits, expert work, digital tools.
    - Digital platform development: database, interface.
    - Communication and stakeholder involvement: workshops, consultations, legal background.

    Requirement: Detailed budget including maintenance costs.

  - Operational:
    - Database update and maintenance
    - Institutional responsibility: who manages, who updates, who finances?
    - Service model: public access, subscription or partnership?

    Requirement: Develop a maintenance and operation model.

  - Regulatory:
    - According to **Act CLXXXIII of 2005**, industrial sidings are subject to mandatory registration; however, their official records are not comprehensive.
    - The legal demarcation between the concepts of "siding" and "private own-use railway network" is not clear, which causes data collection difficulties.

Requirement: Uniform definitions and categories should be applied throughout the project.

- GDPR-compliant data management is required when creating the database, especially for ownership and operation data.

Requirement: Development of a data management policy and privacy statement.

- Ownership issues: siding is often owned by several actors (e.g. track, land, structures under different ownership); and the legal status of disused siding is unclear.

Requirement: Mapping of ownership and clarification of legal status.

- Financing Resources:

Labour requirements for the implementation of the action:

- Preparation, planning, and data collection: **120 person-days**
- Database development, IT implementation, and data uploading: **200 person-days**

These human resources will be provided by the **Ministry of Construction and Transport**.

- Timeline:
  - **Start date: January 2026**

Milestone 1	Project kick-off workshop and preparation of stakeholder mapping	February 2026
Milestone 2	Development of data collection templates and prototype of the digital database	March 2026
Milestone 3	Availability of complete data for all industrial sidings	July 2026
Milestone 4	Publication of the first full version of the database	September 2026
Milestone 5	Adoption of the database maintenance and update protocol	September 2026

  - **End date: September 2026**
- Risks and Mitigation:
  - Low participation from the private sector: Siding owners either do not provide data or are distrustful of data management.

    Mitigation: data protection safeguards, personal consultations and workshops.
  - Incomplete or inaccurate data: the database will be incomplete or unreliable, reducing its value as a decision support tool.

    Mitigation: collecting data from multiple sources (RU, GYSEV, companies and authorities); on-site validation and cross-checking; and introducing data quality criteria.
  - Technical difficulties: the development of the digital platform is delayed or not functioning properly.

    Mitigation: phased development and use of an experienced development partner.
  - Regulatory and data protection barriers: data management is not compliant with the GDPR or other national regulations.

Mitigation: engage data protection and legal advisers; document ownership consents.

Action #2: IDENTIFICATION OF REFURBISHMENT AND NEW CONSTRUCTION NEEDS, DEVELOPMENT OF AN INVESTMENT ROADMAP FOR SIDINGS

- Objective: Evaluating which sidings require refurbishment or where new ones are needed; creating a prioritised list of sidings for revitalisation or construction
- Description: Revitalising disused sidings, renovating existing sidings or building new sidings all involve significant costs. To make the most efficient use of available financial resources, these needs must be assessed and prioritised accurately, whether they concern infrastructure managers' investments (for sidings and connecting tracks) or grants awarded in tenders opened up to siding owners. The decision tool developed by the Rail4Regions project can help with drawing up a priority list and adapting the model to local specifics.
- The multi-level public planning framework relevant to this action, covering:
  - European Level:
    - The European Green Deal (EGD)

      The aim is to decarbonise the transport sector and encourage a shift in modes of transport from road to rail. The development of sidings will enable industrial sites to be connected directly to the rail network, thereby reducing the need for road transport.
    - TEN-T (Trans-European Transport Network) Directive:

      The TEN-T network aims to develop efficient multimodal transport infrastructure. Systematising data on railway sidings is a prerequisite for integrating these facilities into the TEN-T logistics chain.
    - EU Rail Strategies (e.g. the Sustainable and Smart Mobility Strategy)

      Aims to increase the share of freight transport by rail. A lack of data on sidings hinders the efficient use of EU funds and targeted improvements.
  - National Level:

    Act CLXXXIII of 2005 on Rail Transport

    This Act stipulates that the operation of every industrial siding in use is subject to official notification, and that the operator is responsible for maintaining the condition of the track. The database supports the accuracy of official records and enhances the transparency of the authorisation procedures.
  - Regional Level:

    The county-level development programs of the three counties in the Dél-Alföld region (Bács-Kiskun, Békés, Csongrád-Csanád), prepared within the framework of the TOP Plusz 2021–2027 program, contain several objectives that are directly or indirectly related to the development of industrial sidings and rail logistics. The most relevant goals are summarized below:

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Csongrád-Csanád County

- Regional economic development around Szeged: Development of knowledge-based industry and logistics services.
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All three county programs emphasize the need to develop rail infrastructure, particularly to serve industrial-logistics areas. Transport investments linked to economic development goals appear in each case, directly or indirectly affecting industrial sidings. The promotion of rail freight from a sustainability and environmental protection perspective is also a recurring element. These objectives are fully aligned with the directions of the Rail4Regions Action Plan.

- The private planning framework relevant to this action, covering:

The prioritization of industrial siding refurbishment and new construction needs in the Dél-Alföld region has significant implications for a wide range of economic stakeholders. The project's success depends on the active involvement of these actors, whose strategic interests align with the development of a more efficient and sustainable rail freight infrastructure.

Industrial siding owners—primarily manufacturing, agricultural, energy, and logistics companies—are directly interested in maintaining or restoring rail access to reduce transport costs and improve supply chain reliability. For these companies, inclusion on the regional priority list may unlock access to public funding and technical support for infrastructure upgrades. Their participation in the data collection and evaluation process is therefore driven by both operational needs and long-term competitiveness.

Rail freight operators and logistics providers, including national and private railway undertakings, also have a strong interest in the revitalization of sidings. A broader and more reliable network of active sidings increases the volume and geographic reach of rail freight services. These actors are motivated to contribute technical expertise to the prioritization process and to identify new business opportunities in underutilized areas.

Industrial park operators and regional business clusters view siding development as a tool to enhance the attractiveness of their sites. Improved rail access can be a decisive factor for investors, particularly in sectors with high-volume or bulk transport needs. These stakeholders are well-positioned to represent the collective interests of multiple companies and to coordinate with local governments on infrastructure planning.

County-level development agencies and local governments play a dual role as facilitators and beneficiaries. They are responsible for aligning siding development with broader economic and spatial planning goals, and for mobilizing funding through national and EU programs. The decision-making tool

developed under the Rail4Regions project provides them with a transparent and data-driven method to support investment decisions.

- Activities:

1. **Project launch and preparation**
   - Clarify project objectives and scope.
   - Identification of stakeholders (stakeholder mapping).
   - Definition of methodological framework (e.g. adaptation of Rail4Regions decision-making tool).

   Milestone: Preparation of a kick-off workshop and methodological guide.

2. **Development of a data collection framework**
   - Definition of data categories (technical, operational, economic).
   - Develop data protection and legal framework.
   - Preparation of data collection templates and platform.

   Milestone: Finalisation of data collection framework and data model.

3. **Pilot data collection and testing of decision model**
   - Sample area selection
   - Local adaptation of Rail4Regions decision support tool.
   - Test evaluation criteria (e.g. traffic, economic impact, environmental benefit).

   Milestone: pilot prioritisation list and evaluation report.

4. **Full data collection and evaluation**
   - Data collection and validation at regional level.
   - Evaluation of all relevant business lines based on the decision model.

   Milestone: Complete priority list and regional development proposal package.

5. **Integration of results into policy and development plans**
   - Sharing results with the county councils, MÁV.
   - Integration of the list into TOP Plus, OVFS and other development programmes.
   - Establishment of support schemes (e.g. tenders).

   Milestone: Adoption and integration of the priority list into development policy documents.

- Responsible Actors:
  - Rail Cargo Hungaria: As a member of the Rail4Regions project, it coordinates the implementation of the action and carries out monitoring activities.
  - Hungrail – Hungarian Railway Association: Represents the entire railway sector through its members, including railway companies and industrial siding operators.
  - MÁV Infrastructure Management Ltd.: Owner of the vast majority of industrial sidings in Hungary, therefore responsible for their maintenance and renovation.
  - Ministry of Construction and Transport: Develops support programs and schemes and provides the necessary funding for them

- Challenges and Requirements
  - Political:
    - A multi-stakeholder environment involving MÁV, local authorities, ministries and companies.
    - It takes time to align strategic objectives and secure the support of these stakeholders.

- Environmental:
  - Investments should be in line with the EU Green Deal and national climate strategies.
  - New construction requires environmental impact assessments.

- Financial:
  - Renovations and new construction entail significant costs.
  - The success of the project depends to a large extent on the availability of national, regional and EU funding.
  - Private sector involvement is crucial but not guaranteed.

- Regulatory:
  - The legal status of siding (e.g. "siding" vs. "private own-use railway") is not clear.

- Financing Resources:

The implementation of the action does not require additional financial resources.

- Timeline:
  - **Start date: January 2026**

Milestone 1	Project kick-off workshop and preparation of the methodological guideline	February 2026
Milestone 2	Finalisation of the data collection system and data model	March 2026
Milestone 3	Preparation of the pilot prioritisation list and evaluation report	July 2026
Milestone 4	Completion of the full prioritisation list and regional development proposal package	September 2026
Milestone 5	Adoption of the prioritisation list and its integration into development policy documents	December 2026

  - **End date: December 2026**

- Risks and Mitigation:
  - Incomplete or inaccurate data: reduces the value of the decision aid.

    Mitigation: data collection from multiple sources (MÁV, GYSEV, companies, authorities); field validation and cross-checking, introduction of data quality criteria.
  - Technical difficulties in using the decision support tool: the Rail4Regions decision-making tool is not fully adapted to local specificities.

    Mitigations: localisation and parameterisation of the model based on Hungarian data; expert support to adapt the model.
  - Regulatory and legal barriers: legal status, ownership or data protection issues of sidings are barriers to data collection and decision-making.

Mitigation: mapping of the legal background and consultation with authorities.

- Funding uncertainty: project does not receive sufficient funding for full implementation or maintenance.

  Mitigation: funding from multiple sources (EU, national, private), integration of the project into county and national development strategies.

F. Monitoring and Evaluation

Monitoring Mechanism

One of the key elements for the successful implementation of the Action Plan is the establishment of an effective and transparent monitoring system. The purpose of the monitoring mechanism is to continuously track the implementation of the measures, assess progress, identify potential deviations, and provide timely opportunities for corrective action.

In the case of the Dél-Alföldi region, the creation of the railway industrial siding database and the development of the investment schedule represent not merely a technical project but a regional economic development initiative that has long-term implications for logistics networks, environmental sustainability, and territorial cohesion.

The monitoring system is based on a multi-level evaluation structure:

- **Quarterly status reports:** Short summaries providing updates on current progress, challenges, and risks.
- **Mid-term review:** Conducted halfway through the project's implementation period, providing a comprehensive analysis of the results achieved so far, the fulfilment of KPIs, and any necessary corrective actions.
- **Final evaluation:** At the completion of the project, a detailed report will be prepared, summarising the performance of all indicators, assessing economic and environmental impacts, and formulating recommendations for long-term sustainability.

The preparation of monitoring reports and evaluations will continue to be undertaken by **Rail Cargo Hungaria** even after the completion of the **Rail4Regions** project. This task will be supported by data contributions from the stakeholders involved in the implementation of the Action Plans.

Performance Indicators (KPIs)

When defining the indicators, the following key principles were applied:

- **Measurability:** The KPIs must be quantifiable and based on clearly identifiable data sources.
- **Relevance:** The indicators should directly relate to the objectives of the Action Plan (e.g. creation of the industrial siding database, identification of renovation priorities).
- **Comparability:** The indicators should allow for the establishment of trends and benchmarks at both national and European levels.
- **Cost-effectiveness:** Data collection and analysis should not impose a disproportionate administrative or financial burden on the project.

Based on the above principles, the indicators are grouped into four main categories:

- **a) Input indicators - measuring resources and preparatory activities**
  - Number of project kick-off workshops
  - Stakeholder participation rate (% of planned stakeholders involved)
- **b) Output indicators - measuring direct results**
  - Completeness of the established industrial siding database (% coverage of the region's industrial sidings)
  - Number of industrial sidings included in the database (units)
  - Number of data points contained in the database (units)
  - Existence of a published prioritisation list (yes/no)
- **c) Outcome indicators - measuring medium-term effects**
  - Proportion of revitalised industrial sidings compared to the total stock (%)
  - Number of permits issued for the construction of new industrial sidings
  - Increase in the share of rail freight transport (% compared to baseline year)
- **d) Impact indicators - measuring long-term, strategic effects**
  - Reduction of CO_2 emissions due to modal shift from road to rail (tons/year)
  - Number of industrial sidings connected to the TEN-T network

Data sources for KPI measurement:

- Official records: MÁV, GYSEV, and regulatory authorities (licensing data).
- Project data: Workshop reports and participation records.
- Transport statistics: Volume of rail freight transport, reduction of road traffic.
- Environmental data: CO_2 emission calculations based on diverted freight volumes.

G.Conclusion and Next Steps

The overarching goal of the Action Plan for Industrial Siding Development in the Dél-Alföldi Region is to contribute to the spread of sustainable modes of transport, to enhance the competitiveness of rail freight transport, and to strengthen the region's economic and environmental sustainability. The measures defined in the document—namely, the creation of an industrial siding database and the prioritisation of renovation and new construction needs—are not merely technical interventions but steps of strategic importance. They aim not only at the modernisation of railway infrastructure but also at exerting a broader impact on the region's economic competitiveness, environmental sustainability, and social cohesion.

Through the implementation of the Action Plan, a data-driven decision-making environment will be established for the first time, allowing the region's industrial sidings to be represented within a unified, up-to-date, and reliable information framework—an essential precondition both for strategic public-sector planning and for private-sector investment decisions.

One of the most significant lessons of the project is that the success of railway infrastructure development is not purely a matter of financing but also an institutional coordination and knowledge-sharing challenge. The industrial siding database serves as a "bridge" between the public, municipal, and corporate sectors: on one hand, it provides a solid basis for strategic planning and evidence-based policymaking; on the other, it offers a feedback platform for private stakeholders who, through data provision, become active participants in the planning process themselves.

From an economic perspective, the implementation of the Action Plan creates new opportunities for the Dél-Alföldi Region. By accurately mapping the industrial sidings and identifying renovation priorities, investment decisions become more transparent and better targeted. This is particularly important in the current macroeconomic context, where investment resources are limited, and the efficiency of development interventions has become a key determinant of success. The development of industrial sidings will stimulate the growth of the region's industrial parks and logistics centres, strengthen the integration of both large enterprises and SMEs into international supply chains, and thereby enhance the region's overall economic resilience.

The environmental impacts are equally significant. The revitalisation of industrial sidings enables a genuine modal shift from road to rail freight transport, significantly reducing both the region's carbon emissions and the burden on the road network. The increased share of rail freight transport brings not only environmental but also quality-of-life benefits: lower noise pollution, fewer road accidents, and improved liveability in urban environments. The project thus directly contributes to the objectives of the European Green Deal and aligns with Hungary's long-term climate neutrality strategy for 2050.

From a social standpoint, the Action Plan also promotes regional cohesion. Improved railway accessibility strengthens the integration of peripheral areas into the national economic network, thereby helping to mitigate territorial disparities and fostering balanced regional development.

From a policy perspective, the project is exemplary, as it introduces an integrated, data-driven governance approach that has so far only been implemented in a limited way within Hungary's transport sector. Through the creation of a unified database, the development of industrial sidings can henceforth proceed not as a series of isolated, ad hoc investments but within a coherent, long-term strategic framework. The decision-support system enables the comparability of projects, the standardisation of cost-benefit analyses, and the objective determination of development priorities.

As the implementation of the Action Plan comes to a close, the focus shifts toward consolidating the results achieved and embedding them institutionally in the long term. The main task of the next phase is to ensure that the developed database, the established methodology, and the collaborative framework do not end as a one-off project, but continue to operate as an independent, sustainable, and institutionalised system.

The foremost priority for the coming years is the sustainable operation and regular updating of the established database. This requires a legal and institutional framework that clearly defines the actors responsible for data management, validation, and publication. It is advisable for the Ministry of Construction and Transport — working in professional partnership with MÁV Pályaműködtetési Zrt — to be officially designated as the system operator and data custodian. The objective is to ensure that the database is updated at least once a year, and that every newly built or decommissioned industrial siding is integrated into the system.

A second essential step involves the territorial integration of results. The Dél-Alföldi model can be extended to other regions, enabling, in the medium term, the creation of a national industrial siding registry. Such a registry would not only serve the consistency of national transport planning but would also enhance the targeted allocation of regional development funds. The resulting national database could be integrated into Hungary's Territorial Information System (TeIR) and harmonised with the data structures of the European Union Agency for Railways (ERA), thereby ensuring interoperability at the EU level.

In the upcoming years, the emphasis will shift to the preparation and implementation of concrete development projects. The industrial sidings with the greatest economic and logistical potential, as identified in the prioritisation process, are expected to be realised after 2027, utilising both domestic and EU funding sources. During the preparation of these projects, the use of the decision-support tool will enable transparent prioritisation of investments, preliminary assessment of environmental impacts, and optimisation of project costs.

The project also holds an important international dimension. The experience gained under the Rail4Regions initiative makes it possible for the Dél-Alföldi model to serve as an international best practice for other Central and Balkan regions. Sharing these experiences and strengthening interregional cooperation can contribute to the creation of a cross-border, interoperable logistics network that provides a competitive alternative to road freight transport.