



# **Study on the Rhine-Alpine TEN-T Core Network Corridor and support to Coordinator**

***3<sup>rd</sup> Phase***

*Final Report  
May 2020*

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## **Version**

The version 1.1 was finalized on 30<sup>th</sup> May 2020.

## Abbreviations

CEF	Connecting Europe Facility
CDT	Commercial Delivery Time
CNC	Core Network Corridor
ERTMS	European Rail Traffic Management System
EU	European Union
GDP	Gross Domestic Product
HGV	Heavy Goods Vehicle
INEA	Innovation and Networks Executive Agency (EU)
IWW	Inland waterways
km	kilometre
KPI	Key performance indicator
MMTMS	Transport market study
MoS	Motorways of the Seas
MS	Member States (of the European Union)
No.	Number
OMC	Open Method of Coordination
PIR	Project Implementation Report
PL	Project list
RFC	Rail Freight Corridor
tbd	to be defined
TEN-T	Trans-European Transport Network
TENtec	TENtec is the European Commission's Information System to coordinate and support the TENT-T policy
ToR	Terms of Reference
WG	Working Group
WP	Work Plan

## Country Codes (ISO 1366)

BE	Belgium
CH	Switzerland
DE	Germany
FR	France
IT	Italy
LU	Luxembourg
NL	the Netherlands

## Core Network Corridors

BAC	Baltic-Adriatic
NSB	North Sea-Baltic
Med	Mediterranean
OEM	Orient East Med
SCM or ScanMed	Scandinavian-Mediterranean
RALP	Rhine-Alpine
ATL	Atlantic
NSM	North Sea-Mediterranean
RD or RDAN	Rhine-Danube

## Abstract

The Final Report of the 3<sup>rd</sup> Phase of the Rhine-Alpine Core Network Corridor Study provides a comprehensive analysis of the current state developments for the growth of this Corridor, including Belgium, The Netherlands, Germany, Switzerland and Italy.

The report firstly provides an overview of the Corridor Transport Market Study, setting out methodology beforehand and following it through the analysis of data collected. The study then describes projects of the Rhine-Alpine Core Network Corridor, setting out a project list and analysing project maturity, finance and implementation difficulties, top priority issues and cross-border projects as they represent a cluster of interstate activities. The results of the project list analysis are presented in the Project Implementation Report. Extensive consultation with different stakeholders, including national authorities and important representatives from the transport sector are reflected in the Corridor Forum and Working Group meetings minutes.

Study results have been integrated in the 4<sup>th</sup> Work Plan of the European Coordinator coordinated and approved by the Member States.

## Executive Summary

The present report constitutes the 1<sup>st</sup> Final Report of the 3<sup>rd</sup> Phase of the Rhine-Alpine (RALP) Core Network Corridor (CNC, Corridor) Study taking place from July 2018 until June 2020. The report has been prepared by the CNC consultants including HaCon, KombiConsult, Panteia, PwC, Rapp and Stratec.

The objectives of the Corridor Study scheduled from April 2018 until March 2022 to further develop the CNC, refining the Work Plan of the European Coordinator, and continuing the stakeholder engagement through the Corridor Forums and Working Group meetings, leading towards an agreed update of the Work Plan and assessment of the Corridor's evolution. The Corridor Study has been implemented in a close cooperation with ERTMS Consultants and taking into account ERTMS implementation plan, Motorways on the Sea (MoS) development priorities, Rail Freight Corridor (RFC) development plans and integration with CNC.

As per the requirement of the Tender Specifications, the Study 1<sup>st</sup> Final Report summarizes particularly the work accomplished so far under Tasks 1–5. Besides, where deemed necessary, the present report includes a short description of the updated common methodology concerning tasks of the Study, as well as an elaboration of the specific elements for the RALP Corridor.

### Rhine-Alpine Core Network Corridor

The Rhine-Alpine Corridor is the shortest of the nine corridors of the core network. At the same time, it runs through some of the most densely populated and economically strongest regions in Europe. The RALP Corridor runs through five Member States and Switzerland. France was added to the catchment area of the corridor in light of the relevance of inland waterways and their ports along the river Rhine. Moreover, the rivers Mosel and Neckar in Germany as well as Luxembourg's inland port of Mertert are included in the corridor. Inland waterways in Belgium are included in the North Sea Mediterranean Corridor, but are also of importance for further development of this corridor.

The particularity of the Rhine-Alpine Corridor is the partnership with Switzerland which provides a high-quality multimodal infrastructure. Swiss representatives are members of the Corridor Forum and Swiss projects are included in the analysis of the corridor infrastructure.

### The 4<sup>th</sup> Work Plan of the European Coordinator

An important output of the Corridor study is the contribution to the 4<sup>th</sup> Work Plan of the European Coordinator for the Ralp Corridor. The contribution to the Work Plan is provided by the different project tasks described below. This includes the Multimodal Transport Market Study, regular project list updates, an assessment of the project implementation status, consultation with project stakeholders during the Corridor Forum and Working Group meetings. The 4<sup>th</sup> Work Plan of the European Coordinator was finalised on 15<sup>th</sup> May 2020 following extensive consultation and approval by the Member States.

### Corridor Transport Market Study

As of today, 138 billion tonnes-kilometre of freight is carried over the corridor annually. Inland waterways have a share of 50%. The share of rail is 16%, while the share of road stands at 34%. For passenger transport, all passengers combined travel yearly 77 billion kilometres across the corridor. Road has by far the highest share of 82%.

In the Baseline Scenario, which assumes that from 2016 onward no further investments are made, rail would be the most losing mode. A total of 8.7 billion potential tonnes-kilometres on rail would not take place when comparing the Baseline scenario to the Reference scenario. The road freight traffic would continue to increase,

while no extra road capacity is created to facilitate this shift. Inland waterway traffic volumes would not experience major changes.

The non-completion of the corridor, according to the Baseline Scenario, would generate the highest potential losses to the Maasvlakte (NL)–Cologne (DE) section in terms of rail freight traffic, which will go down by 83%, and on the Brugge (BE)-Cologne (DE) road section, with a 10.8% decrease in road traffic.

According to the Reference scenario for 2030, which assumes full implementation of the network, both passenger and freight transport on the corridor will be increasing, for all transport modes. Considering the currently planned projects are carried out, freight volumes on the corridor are estimated to increase on average by 25%. Rail is the biggest beneficiary of the implementation of projects, as its share grows to 21%. Inland waterways remain the dominant mode, while its share decreases slightly to 48%. The share of road drops to 31%.

Looking at the macro-sections of the corridor, the Reference Scenario for 2030 shows that rail transport will experience an unevenly distributed growth, with a remarkable increase of 114% on the section between Maasvlakte (NL) – Cologne (DE), 97% between Brugge (BE) and Cologne (DE) (where the 3RX (formerly Iron Rhine) project could bring some additional capacity) and 86% between Chiasso (CH) and Genova (IT). The corridor average for rail growth for freight is 79%. The growth rates for road transport are more moderate, with a 16% corridor average and the biggest growth on the section between Mannheim (DE) and Basel (CH) at 31%.

Growth rates for passenger transport show similar trends, with rail having the highest growth – 38% on average along the whole corridor. The biggest increase will take place on the Mannheim (DE) - Basel (CH) and the Brugge (BE) – Cologne (DE) sections, with 54% and 51% respectively. For road, the growth is approximately 15% on average along the whole corridor, with the highest increase on the Maasvlakte (NL) – Cologne (DE) section at 18%.

### **Economic and environmental effects**

The analysis shows that the corridor implementation will lead to a GDP increase in the corridor countries of more than € 500 billion over the period of 2017 – 2030. Employment will also be stimulated, and more than 1.7 million jobs are estimated to be created.

In 2015, the transport sector in the corridor Member States<sup>1</sup> emitted together around 351 million tonnes of CO<sub>2</sub>. While transport volumes are forecasted to increase over the period 2015 – 2030, modal shift and efficiency gains are outweighing growth. CO<sub>2</sub> emissions are estimated to fall by 14% in 2030 if all planned TEN-T projects on the corridor are implemented.

### **Project list**

In the first two phases of the TEN-T corridor studies, it became apparent that the project list is the key tool for monitoring and coordinating the further development of the Corridor. This includes the technical analysis of projects with respect to their contribution to the Corridor objectives. Moreover, it allows mirroring the projects and their impact against the Corridor's bottlenecks and non-compliant sections according to Regulation 1315/2013 (gap analysis). In the current study phase, the activities related to the project list have been continued and expanded in several respects.

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<sup>1</sup> Emission values reflect the sum of the total emissions coming from the transport sector in all corridor Member States, except France and Luxembourg.



## Project Implementation Report

As of April 2020, there are 421 projects included in the Rhine-Alpine Project List, and 80 of those projects are already completed. 141 projects, including the 80 projects that are completed already, are due to be completed by 2020. According to the Project Implementation Report, 113 projects are due by 2025, and 112 by 2030. 10 projects are with an end date after 2030, impacting Rail and Rail ERTMS and Inland Waterways categories by eliminating current or potential bottlenecks, upgrading or building new rail lines, building a new rail tunnel or constructing a new weir.

Total costs of the planned projects sum up to € 123.8bn; whilst completed projects amount to € 15.8bn. However, by the end of 2020, completed projects should amount to €21.3bn. The majority with € 47.4bn (38%) of the costs planned are due to be completed between 2026 and 2030, as € 32.1bn (26%) are due to be completed for the time period 2021-2025. Most costs of the € 123.8bn are allocated by far to Rail and Rail ERTMS (€ 88.7bn), followed by Road projects (€ 23.0bn). Less costs are allocated to Airport (€ 3.6bn) and IWW (€ 3.3bn) and with all other categories below € 3bn.

Most funding (approved, not approved) is also allocated to Rail and Rail ERTMS (€ 46.7bn), followed by Road projects (€ 17.8bn), IWW (€ 3.2bn), Maritime (€ 2.1bn) and Airport projects (€ 1.9bn). Less funding is allocated to Multimodal (€ 0.6bn), Innovation (€ 0.2bn) and Motorways of the Sea projects (€ 49,000). Key source of finance is "State" funding (€ 61.0bn or 49%), followed by "Private" funding (€ 7.4bn), "EU" (€ 3.0bn) and "Regional / local funding" (€ 1.1bn). The financing source is open for 59% of projects (total of € 51.2bn).

79 cross-border projects are indicated, of which 18 projects are completed already. Most of these projects which are still ongoing or planned have a completion date during time period 2021-2025 (22 projects). Cross-border projects total cost is € 19.8bn, including completed costs with € 571mn.

## Corridor Forum

The European Coordinator is assisted in the performance of his tasks concerning the Work Plan by the Corridor Forum. In the third phase, again all meetings were held within the scope of half a day in the premises of DG MOVE in Brussels, in a similar setup to 2015-2017. For all meetings, the agenda and invitation letter have been prepared in coordination the Corridor advisor. A presentation has been prepared and sent to the Corridor advisor. After approval, all relevant information has been sent out to the Forum members by email. The list of Corridor Forum Members has been permanently updated. Minutes of the meetings have been drafted and coordinated with DG MOVE. Final minutes and presentations have been sent to the Forum members.

## Working group meetings

The second meeting of the Working Group on Regions and Urban nodes and Airports took place on the 1<sup>st</sup> April 2019 in Milano organised together with the Mediterranean Corridor. The agenda and the official invitation letter have been sent out mid of March 2019 to the representatives of Member States, urban nodes and regions.

About 80 stakeholders participated in Milano. The minutes of meetings were drafted by the contractor and have been sent to the stakeholders together with the list of participants. All presentations have been provided prior to the meeting.

The third Working Group on Inland Waterways and Ports was organised in close cooperation with CCNR. This meeting has been carried out as a workshop focussing on inland waterway transport and multimodality and was executed on 27<sup>th</sup> September 2019 in Basel (Switzerland). Together with CCNR, an agenda has been elaborated including a list of potential stakeholders to be invited. After the meeting, minutes have

been drafted and coordinated with DG MOVE. Final minutes and presentations have been sent to the participants.

### **Reports prepared**

During the Study different reports have been prepared including:

- Inception Report (October 2018);
- Study update report 2018 – 2019 (completed February 2019);
- Project Implementation Reports: 1/2018, 1/2019, 2/2019, 3/2020;
- 1<sup>st</sup> Intermediate Report (July 2019);
- Monthly management reports prepared on monthly basis.

### **Outlook**

This Final Report is covering the first two years of the Corridor Study, including reporting period June 2018 to June 2020. Consultants will continue the work on the Corridor Study during the next two years with the main focus being a continuous update of the project list, identification of new projects, re-assessment of Corridor compliance with TEN-T requirements, new Multi-annual Financial Framework 2021–2027 impact on the Corridor development, updated regulatory framework and other relevant issues.

# 1 Introduction and scope

## 1.1 Outline

The present report constitutes the Final Report of the 3<sup>rd</sup> Phase of the Study on the Rhine-Alpine Core Network Corridor.

In accordance with the tender specifications, it describes “*the work accomplished so far under tasks 1, 2 and 3*” and the efforts, results and progress of the Contractor’s work in the period June 2018 - May 2020. The elements included in the Final Report are:

- Task 1 Further elaboration of the Corridor knowledge base;
- Task 2 Further refining of the project List;
- Task 3 Monitoring project implementation and reporting;
- Task 4 Provide elements for the 4<sup>th</sup> Work Plan of the European Coordinator;
- Task 5 Corridor Forum and WG meetings;
- Task 6 Project and Quality Management;
- Task 7 Reporting and Dissemination.

Considering the objectives of the CNC study as outlined in the Tender specification, the main tasks of this assignment are:

Support the Commission/DG MOVE and the European Coordinator as well as analyse and report the progress made on the Corridor and monitoring its evolution, including:

- Analysing the Corridor development with respect to compliance with technical requirements and changes in the Corridor’s KPIs based on the completed projects;
- Consideration of proposed changes in the CEF Regulation in relation to Corridor alignment;
- Ensuring that the Working Groups and Corridor Forums work in a smooth and continuous way;
- Proposing a refinement of the CNC Work Plan. This objective includes:
  - an enhancement and deepening of its knowledge base, including the assessment of its implementation by updating information on markets, technical compliance, bottlenecks, innovation projects and progress made on pilot initiatives;
  - an identification of additional projects contributing to further technical compliance and shift to environmentally friendly transport modes and removal of bottlenecks.

## 1.2 Consortium Information

The study on the Rhine-Alpine Core Network Corridor is conducted by a group of consultants, led by HaCon. The experts involved are listed below:

**Table 1: Rhine – Alpine Corridor consortium and involved experts**

Partner	Involved experts
HaCon Ingenieurgesellschaft mbH, Hannover Lead Partner;	Lars Deiterding (Project Manager), Eckhard Riebe (Deputy Project Manager), Dr Johannes Hildebrandt, Arianna Zanardelli, Janina Stroh
KombiConsult GmbH, Frankfurt/Main (DE)	Kai Petri (Company team leader), Uwe Sondermann
Panteia BV, Zoetermeer (NL)	Menno Menist (Company team leader), Maria Rodrigues, Ivo Hindriks, Olaf Lagerwerf
PwC EU Services EESV, Brussels (BE)	Francesco Gargani (Company team leader), Diego Artuso, Valerio Gori, Federico Perciaccante
Rapp Trans AG, Zurich (CH)	Simon Bohne (Company team leader), Martin Ruesch, Gianni Moreni
Stratec S.A., Brussels (BE)	Georges Fuchs (Company team leader), Matthieu Bogaert, Antoine Martin

This Study is elaborated for and in close cooperation with:

- Mr Paweł Wojciechowski, the European Coordinator for the Rhine-Alpine Corridor;

and the European Commission, DG MOVE, Unit B.1, Brussels, Belgium, represented by

- Mr Lukasz Wojtas, Advisor of the Coordinator.

## 1.3 Harmonized and coherent elaboration of CNC study

In order to achieve the requested coherent approach of the analyses and to obtain coherent results, the various consultants' consortia, based on the instruction of DG MOVE, have established two cross-Corridor Working Groups:

- MTMS Working Group on working on the joint approach for the Transport Market Study. This Working Group consists of members of the consortia (Panteia, Prognos, Setec, Tplan), as well as Gudrun Schulze (DG MOVE B1) and Maria Cristina Mohora (DG MOVE A3);
- Task 2/3 Working Group addressing issues related to the project list and the project implementation reporting.

Their work has begun in July 2018 and will be continued until the end of the contract.

Reference is made to the first deliverable, the Inception Report Phase 1 and the Intermediate Report.

## 2 Task 1 - Further elaborating the Corridor knowledge base

### 2.1 Overview on Task 1 efforts

The key objective of Task 1 is to update the Corridor knowledge base and to expand it, where necessary. Task 1 includes also the Kick-off of the Corridor study work for from 2018 to 2022.

During the first period from 2018 to 2020, this task has been performed between June and November 2018. It builds on the 2014-2017 corridor knowledge base, where a large number of analyses and data have already been conducted. In order to visualize the Corridor development and evolution a consistent and comparable methodology with respect to the previous studies was applied. It provides input for the upcoming Tasks 2 and 4, which will eventually feed into the 4<sup>th</sup> Work Plan of the Coordinator.

The results were presented in the Corridor Study Update 1, provided in November 2018.

To improve the Corridor's knowledge base, four subtasks were identified:

- 1.1 Multimodal Transport Market Study (MTMS) for the RALP-Corridor,
- 1.2 Update of Corridor characteristics, the state of the infrastructure with respect to Article 39 of the Guidelines, as a result of the on-going Corridor infrastructure projects,
- 1.3 Identification and analysis of other EU studies and relevant policy actions;
- 1.4 Review of the main national policy documents of the Corridor Member States and assessment of the impact on CNC development.

The following sections describe the results which were elaborated and achieved after the presentation of the above-mentioned deliverables (with the exception of the MTMS – see below).

### 2.2 Transport Market Study – Updated methodology and study

As specified in the ToR, the current study shall include an update of the Multimodal Transport Market Studies (MTMS) elaborated as part of the 2014 and 2015-2017 Core Network Corridor studies. The update of the MTMS shall consider the most recent available data and shall be based on a common macro-economic framework (e.g. GDP projections, fuel price projections), drawing on the EU Reference scenario 2016 or its potential updates. As part of the 2018-2022 core network corridor studies, the MTMS shall be updated twice, once per study loop.

Additional requirements set in the tender specifications concern the adoption of a common approach for all corridors to ensure consistency, based, as appropriate, on any newly available Europe-wide methods for demand analysis as well as for the identification, assessment and prioritisation of projects.

As a consequence of the request of a common approach for this task, the scope and methodology of the MTMS update was discussed during the kick-off meeting of the 2018-2022 corridor studies. The organisation of a dedicated MTMS Working Group (WG) was proposed by DG MOVE and the consortia involved.

## MTMS methodology

Based on the ToR and the bilateral discussions held during and after the CNC kick-off meeting, two requirements for the 2018-2022 updates of the market study have been identified:

1. Collect data on transport flows and assess the level of service of the CNC infrastructure;
2. Assess the impact of the Work Plan project list (in full or partially) in terms of user's benefits and environment and decarbonisation relative to a scenario which does not assume the implementation of the Work Plan projects (i.e. Baseline scenario). The macro-economic framework of this Baseline scenario should draw on the EU Reference scenario 2016. The same approach for all corridors should be used to ensure consistency.

Concerning the first requirement, the analysis of the current situation was based on the review of observed data at link level, whereas a more qualitative approach was adopted to comment on possible future bottlenecks, based on the review of existing data and studies.

The second requirement entailed the adoption of consistent transport modelling across the corridors. This is done by developing three scenarios:

- **Baseline scenario:** showing future developments without implementation of the work plan projects;
- **Reference scenario:** a forecast based on the Work Plan project list and the 2016 EU reference scenario;
- **Corridor scenario:** compared to the reference scenario, the corridor scenario includes a different set of projects, indicating for example a higher level of infrastructure completion, and may also involve assumptions related to compliance.

The calculations of the second requirement were done by TRT/M5 with the TRUST/ASTRA model, based on the inputs from the Corridor Consultants' teams.

### Baseline Scenario:

The main objective is to obtain the key parameters shown in Table 2 below per country and mode. The common base year is 2016. If no data has been available, information from 2017 or 2015 was used. For this scenario, European, national and regional sources have been consulted.

Responsibility for the data collection was split by country amongst the MTMS WG. National experts have been asked to provide information on data sources. Where gaps occurred, corridor stakeholders or other data experts have been consulted. This resulted in a mix of sources that are brought together in a database and shared in the WG. Where needed, data gaps were filled in using assumptions or extrapolation.

The requested data collection is indicated below:

**Table 2: MTMS Parameters of the base year data collection**

<b>Rail traffic (trains per year)</b>	Passenger traffic flow: number of passenger trains per year using each section	Average train occupancy (pax/train)	Freight traffic flow: number of freight trains per year using each section	Average cargo weight (gross tonnes)
<b>Road traffic (vehicle per year)</b>	Car traffic flow: number of cars per year using each section	Average car occupancy (pax/car)	Freight traffic flow: number of trucks per year using each section	Average cargo weight (gross tonnes / truck)
<b>IWW traffic (ships and tons per year)</b>	Ship traffic flow: total annual number of commercial ship passages	Freight flows (tons/year): total annual cargo flows per section in weight (gross tonnes)		

### Corridor scenario:

The nine corridor-specific scenarios (one per corridor) to be analysed with the TRUST/ASTRA model by TRT/MFIVE were identified based on the following criteria:

- Corridor-specific scenarios shall highlight key risks or opportunities in the development of seamless multimodal core network corridors, thereby providing a solid ground for the European Coordinators to support the timely implementation of the corridor priorities and the projects with high European added-value;
- Corridor-specific scenarios shall not focus on individual projects, but rather on groups of projects, in order not to duplicate project-specific assessments previously undertaken and to rather focus on the corridor dimension;
- In order to maximise the added-value of the on-going exercise, it would be beneficial to identify a mix of corridor-specific scenarios, some focusing on infrastructure (and potential non completion of key projects) and some on other issues, such as technology or operational measures.

### MTMS working meetings

The first WG meeting took place in June 2018. In November 2018, the second WG meeting was held. During the meetings, the methodology, tasks, planning and cooperation with the consortium TRT/MFIVE were discussed. TRT/MFIVE is contracted by DG MOVE A3 for the European Transport Forecast model under the TRIMODE project.

To bridge the on-going activities under the MTMS task and the mentioned TRIMODE project, a separate contract with TRT/MFIVE has started in May 2019 and a joint kick-off meeting was held with DG MOVE, the TRT/MFIVE team and the Corridor consultants responsible for Task 1.1.

During that meeting, the definitions of the modelling scenarios were discussed, i.e. the base year, as well as the definition of reference and corridor-specific scenarios.

Another point of discussion was the definition of macro-sections along the corridor. The model outputs concerning traffic volumes on the corridor alignment will be provided by corridor macro sections. Since detailed analysis at local level or at project level are outside the scope of the models, the TRUST and ASTRA models will provide outputs at macro-sections level (groups of TENtec corridor links) per corridor; these are around eight sections, applicable for all modes of transport.

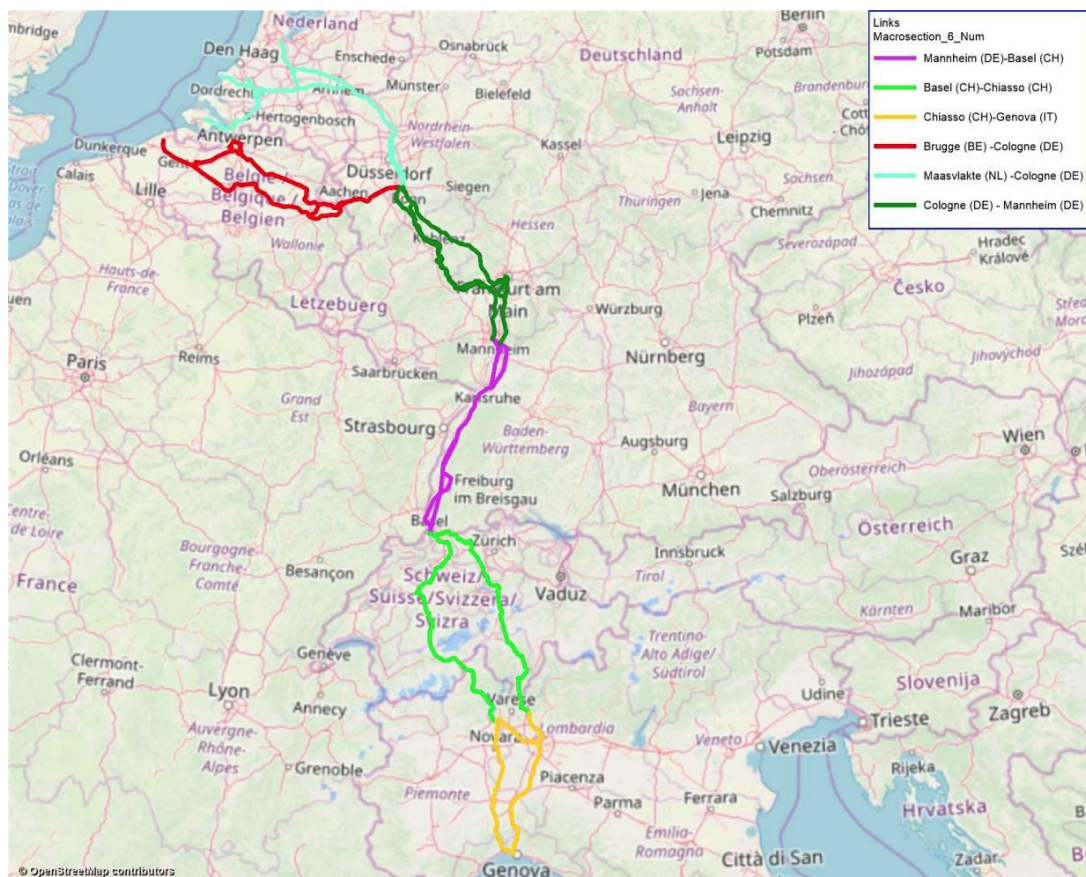
The expected inputs were provided by the CNC study consortia to the TRT/MFIVE consortium (data or information extracted from the project list or in any case strictly related to projects in the project list) and the model outputs (traffic growth rates and absolute volumes, modal split, economic and environmental outputs) were confirmed in line with previous discussions.

The third WG meeting was held on the 21<sup>st</sup> May 2019 focussing on the discussion on the potential corridor scenarios. In addition, data collection has started in 2019 by a team working simultaneously on all nine corridors including TPLAN, Panteia, Prognos and Setec.

### Macro Sections definition

As already mentioned, the latest round of developing traffic scenarios is being undertaken as a joint exercise by a team of external consultants (TRT, M-Five) using the existing transport network model TRUST, and the economic model ASTRA. To build a linkage between the network model and the corridors, each corridor has been required to present specific macro-sections as the most detailed level. The results of the model (see figures below) will be analysed on this scale.

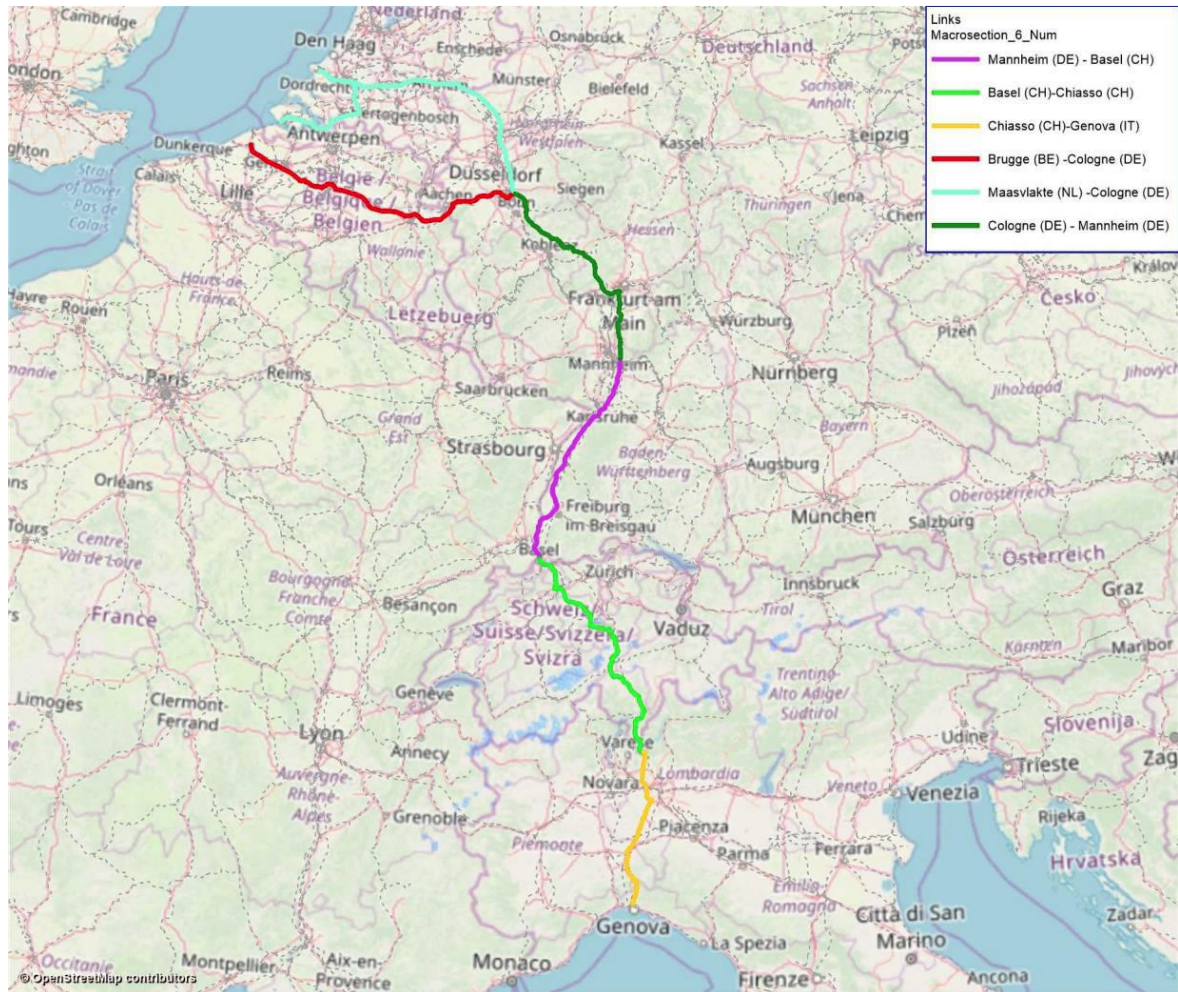
**Figure 1: Rail network map of MTMS macro-sections for RALP**



Source: TRUST model



**Figure 2: Road network map of MTMS macro-sections for RALP**



Source: TRUST model

**Figure 3: IWW network map of MTMS macro-sections for RALP**



Source: TRUST model

### Corridor Scenario definition

In addition to the Baseline and Reference Scenario, a third scenario is defined, unique to each Corridor. This is referred to as the *RALP Corridor Scenario*.

Initially, the RALP Corridor Scenario should focus on the resilience of the corridor, by investigating a capacity reduction of IWW, as described below:

- **Name:** *Multimodal / resilience*
- **Rationale:** RALP is a mature corridor with high compliance rates. However, capacity is an issue. Therefore, this scenario checks the corridor's resilience for IWW/Rail from NL-Cologne, Liege-Cologne, Mannheim-Basel, assuming a blockage on IWW in The Netherlands. The scenario simulates the impact of the blockage and its effects on rail (e.g if rail would be able to cope with it or if there will be a capacity problem). By depicting the negative outcome, the added value of the Reference scenario is highlighted. Furthermore, it shows the general benefits of new lines to increase capacity.
- **Modes of transport:** Rail, IWW
- **Macro-sections:** NL-Cologne, Liege-Cologne, Mannheim-Basel
- **Description:** This scenario will compare a capacity reduction of 75% along IWW (this was the case during Rastatt and can be during extreme water levels).

Despite approved by the advisor, the team of external consultants (TRT, M-Five) couldn't model the IWWIWW network in their models and therefore an alternative scenario was defined and approved by the advisor.

RALP Corridor Scenario:

The RALP Corridor Specific Scenario investigates the impact on the corridor if rail projects between the Dutch and German border are not being completed before 2030. This scenario involves three German TEN-T projects not being completed, amounting to €1.1bn worth of TEN-T investments, or 6.3% of Germany's total TEN-T investments.

Base year results:

As of October 2019, the data collection exercise for the base year has been completed.

### **MTMS Results: Reference & Baseline scenario, Jobs & Growth**

In the end of October 2019, the TRT and M-Five Modelling team delivered the MTMS results in the form of the following reports.

- *Economic modelling exercise in support of the multi-modal transport market studies for nine core network corridors. Progress Report, dated 24.10.2019*
- *Economic modelling exercise in support of the multi-modal transport market studies for nine core network corridors. WP2 – Modelling approach and preliminary results for selected CNCs, dated 31.10.2019.*

Based on the report, the MTMS Working Group has sent a list of 22 questions to the TRT/M-Five Modelling Team, asking for further clarification on the MTMS results. The reports did not include the results on the RALP Corridor Specific Scenario yet, as the external team is still investigating if their models would allow to include properly the IWW aspects needed for the scenario chosen. On the 31<sup>st</sup> October 2019, the external team of consultants informed the Corridor team that they came to the conclusion that Trust/Astra models were not the right tools to assess infrastructure resilience. Discussions to select an alternative corridor scenario restarted and a decision was made on the 17<sup>th</sup> December. The initial results were received on the 21<sup>st</sup> January 2020.

Over the course of January and February 2020, several bilateral talks between members of the MTMS Working Group and the EC have taken place. During these meetings, it was discussed how to present the MTMS results in the upcoming fourth Work Plan. It was agreed that the results shall be expressed in terms of jobs and growth forecasts, with the traffic results being left out. The reason for this is that the source of the traffic changes in the Trust Model are difficult to track down. Moreover, the linkages between the Trust and Astra models are non-optimal, for example the macro-section results may not reflect the modal share and emissions results.

The EC proposed a common structure for the reporting on the MTMS in the 4<sup>th</sup> Work Plan, which each corridor was free to follow. Some of the traffic results were included in the Work Plan of the RALP Corridor.

The main results of the *Baseline and Reference Scenario* are as follows:

As of today, some 138 billion tonnes-kilometre of freight is carried over the corridor annually. Inland waterways have a share of 50%. The share of rail is 16%, while the share of road stands at 34%. For passenger transport, all passengers combined travel yearly 77 billion kilometres across the corridor. Road has by far the highest share of 82%.

In **the Baseline Scenario**, which assumes that from 2016 onward no further investments are made, rail would be the most losing mode. A total of 8.7 billion potential ton-kilometres on rail would not take place when comparing the Baseline scenario to the Reference scenario. The road freight traffic would continue to increase, while no extra road capacity is created to facilitate this shift. Inland waterway traffic volumes would not experience major changes.

The non-completion of the corridor, according to the Baseline Scenario, would generate the highest potential losses to the Maasvlakte (NL)–Cologne (DE) section in terms of rail freight traffic, which will go down by 83%, and on the Brugge (BE)–Cologne (DE) road section, with a 10.8% decrease in road traffic.

According to **the Reference scenario for 2030**, which assumes full implementation of the network, both passenger and freight transport on the corridor will be increasing, for all transport modes. Considering the currently planned projects are carried out, freight volumes on the corridor are estimated to increase on average by 25%. Rail is the biggest beneficiary of the implementation of projects, as its share grows to 21%. Inland waterways remain the dominant mode, while its share decreases slightly to 48%. The share of road drops to 31%.

Looking at the macro-sections of the corridor, the Reference Scenario for 2030 show that rail transport will experience an unevenly distributed growth, with a remarkable increase of 114% on the section between Maasvlakte (NL)–Cologne (DE), 97% between Brugge (BE) and Cologne (DE) (where the 3RX (formerly Iron Rhine) project could bring some additional capacity) and 86% between Chiasso (CH) and Genova (IT). The corridor average for rail growth for freight is 79%. The growth rates for road transport are more moderate, with a 16% corridor average and the biggest growth on the section between Mannheim (DE) and Basel (CH), at 31%.

Growth rates for passenger transport show similar trends, with rail having the highest growth – 38% on average along the whole corridor. The biggest increase will take place on the Mannheim (DE)–Basel (CH) and the Brugge (BE)–Cologne (DE) sections, with 54% and 51% respectively. For road, the growth is approximately 15% on average along the whole corridor, with the highest increase on the Maasvlakte (NL)–Cologne (DE) section at 18%.

## **Economic and environmental effects**

The analysis shows that the corridor implementation will lead to a GDP increase in the corridor countries of more than € 500bn over the period of 2017–2030. Employment will also be stimulated, and more than 1.7 million jobs are estimated to be created.

In 2015, the transport sector in the corridor Member States<sup>2</sup> emitted together around 351 million tonnes of CO<sub>2</sub>. While transport volumes are forecasted to increase over the period 2015–2030, modal shift and efficiency gains are outweighing growth. CO<sub>2</sub> emissions are estimated to fall by 14% in 2030 if all planned TEN-T projects on the corridor are implemented.

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<sup>2</sup> Emission values reflect the sum of the total emissions coming from the transport sector in all corridor Member States, except France and Luxembourg.

The main takeaway from the *RALP Corridor Scenario* is as follows:

The RALP Member States will not have available an accumulated potential of €950 mln in GDP and 2,412 job-years in the period of 2015 to 2030 compared to the Reference Scenario. The impact is far bigger in Germany than in the Netherlands, with Belgium experiencing a minor negative impact as well.

The results of the corridor specific scenario are described in detail in the 4<sup>th</sup> Work Plan of the RALP Corridor.

### **2.3 New indicators on commercial delivery time and intermodal gauge**

As part of the 2018-2022 CNC studies, DG MOVE requested to include the relevant indicators for the development of the CNCs. This means that two new indicators are to be monitored in addition to the set of KPIs already defined with reference to the Regulation EU 1315/2013. The first indicator relates to commercial delivery times for rail freight. The second indicator shows the structural/loading rail gauge to support intermodality. Methodologies and actions put in place by the CNC consultants to measure these additional parameters were discussed at the 3<sup>rd</sup> Management Meeting in May 2019 in Brussels. Some corridors, including the RALP Corridor, are facing difficulties in sourcing the required data and information to measure these new indicators.

For the RALP corridor, four international trade lanes for intermodal transport were identified (criteria: cross-border rail services above 800km, with at least 500km on the relevant corridor):

- Antwerp – Busto
- Rotterdam - Busto
- Rotterdam – Novara
- Zeebrugge - Milano

Currently, for the commercial delivery time data on train punctuality is monitored on an anonymised basis.

Regarding the additional indicator related to the development of intermodal transport, DG MOVE confirmed that the P400 loading gauge is the main parameter to be analysed by the consultants. Discussions were made concerning the possible sources and databases to be used for the measurement of this standard. Different databases including TENtec, RINF, Network Statements, “UIRR Map of Intermodal Loading Gauge” that could be used for the analysis of the P400 indicator also considering bottlenecks connected to the structural gauge (GC, GB...) were recalled. No single source can, however, be used for the measurement of this indicator. In consideration of this situation, a meeting was mentioned that was organised with UIRR in autumn 2018 where the possibility to obtain data on the intermodal gauge for the CNCs was discussed.

### **2.4 Safe and secure parking areas for trucks**

Union guidelines for the development of the trans-European transport network stipulate that every 100km, the core network shall be equipped with parking areas which enable HGV drivers to meet the rest times required by EU law and to benefit from safe and secure parking conditions.

Based on the 2018-study on “Safe and Secure Parking Places for Trucks”, the European Commission has introduced a new standard for the certification of parking

areas, providing improved clarity and consistency on the definition of a secure parking area.

The study analysed the supply of parking in Europe and found that current standards for safe and secure parking areas (e.g. LABEL, VEDA, PSR) vary greatly and that many of these areas are not audited, which cause uncertainty among users on the level of safety and security and on service levels provided to drivers.

Out of all the available parking areas (some 5,000) in Europe, only 47 are considered currently to be independently certified as safe and secure. Many others have LABEL ratings, but the majority of these ratings have lapsed since they were awarded. Others still advertise that they offer security facilities (lighting, cameras, guards and/or fencing), but again without any independent certification.

As a response, the study proposes a common standard for safe and secure parking areas<sup>3</sup> - 'EU-Parking' - ranging from a low level (Bronze) via medium (Silver) to high (Gold and Platinum), all with the same minimum service levels for drivers in terms of sanitation, restauration and comfort.

**Figure 4: Overview of new European standard for lorry parking**

	<b>BRONZE</b> LEVEL	<b>SILVER</b> ADDITIONAL TO BRONZE	<b>GOLD</b> ADDITIONAL TO SILVER	<b>PLATINUM</b> ADDITIONAL TO GOLD
<b>PERIMETER</b>	<ul style="list-style-type: none"> <li>Visual deterrent to recognize the secure parking area</li> <li>Lighting at 15 Lux</li> <li>Vegetation trimmed, good visibility</li> </ul>	<ul style="list-style-type: none"> <li>Physical deterrent to prevent unauthorised access (e.g. ditch, rocks, fence) or continuous video monitoring and recording by trained staff</li> <li>Lighting at 20 Lux</li> </ul>	<ul style="list-style-type: none"> <li>&gt; 1.8 m physical barrier (height)</li> <li>Lighting at 25 Lux</li> <li>CCTV covering perimeter</li> <li>Measures to prevent unintentional damage to barriers</li> <li>Clear zone of 1 meter between barrier and parking area</li> </ul>	<ul style="list-style-type: none"> <li>Add-on for physical barrier: Deterrents to climb over</li> </ul>
<b>PARKING AREA</b>	<ul style="list-style-type: none"> <li>Only freight vehicles and authorized vehicles allowed as indicated by signage</li> <li>Physical or remote surveillance checks / inspection at minimum once in 24 h</li> <li>Lanes must be lit at 15 Lux</li> <li>Vegetation trimmed, good visibility</li> </ul>	<ul style="list-style-type: none"> <li>Physical or remote surveillance checks/ inspection at minimum twice in 24 h (one at daytime, one at night)</li> <li>If pedestrian lanes exist, they must be lit at 15 Lux</li> </ul>	<ul style="list-style-type: none"> <li>Onsite or remote staff contact can be contacted 24/7</li> <li>Marked vehicle and pedestrian lanes</li> </ul>	<ul style="list-style-type: none"> <li>Site manned or video-controlled 24/7</li> </ul>
<b>ENTRY / EXIT</b>	<ul style="list-style-type: none"> <li>Lighting at 25 Lux</li> <li>CCTV (good image quality)</li> </ul>	<ul style="list-style-type: none"> <li>Barriers</li> <li>CCTV (records of entering vehicles)</li> </ul>	<ul style="list-style-type: none"> <li>Barrier with under-climbing and over-climbing protection</li> <li>Intrusion prevention/detection, e.g. turnstile for pedestrians</li> <li>License plate recognition</li> </ul>	<ul style="list-style-type: none"> <li>Gates must be installed</li> <li>License plate must match ticket</li> <li>Real time monitoring of entry/exit, including pedestrian entry/exit</li> <li>If there is a gatehouse, it must be able to withstand an external attack (door closed)</li> </ul>
<b>STAFF PROCEDURES</b>	<ul style="list-style-type: none"> <li>Fix unauthorized vehicles so that they cannot drive away or</li> <li>Removal of unauthorized vehicles if legally permitted</li> <li>Risk Assessment Plan in place</li> </ul>	<ul style="list-style-type: none"> <li>Staff trained by an accredited training provider is available 24/7 onsite or in a control centre</li> <li>Appointment of formally responsible person for staff procedures in case of incidents</li> <li>Documented staff training once a year in view of incident prevention</li> <li>Incident and crime reporting to staff and police must be enabled</li> </ul>	<ul style="list-style-type: none"> <li>All security staff must be certified guards under national/European legislation</li> <li>The formally responsible person for staff procedures will schedule compliance checks, communication, recertification</li> <li>A technical user manual must be used</li> <li>Alarm response procedures</li> <li>The parking area management system should be prepared for DATEX II data transfer</li> <li>Business Continuity Plan in place</li> </ul>	<ul style="list-style-type: none"> <li>Any remote staff also trained/certified</li> <li>Staff has personal communication system</li> <li>Security training of site manager</li> <li>Measures against power failure</li> <li>Local risk assessment once a year</li> <li>Pre-booking available. If the pre-booking is offered via an app or similar systems, data transmission must be real time.</li> </ul>

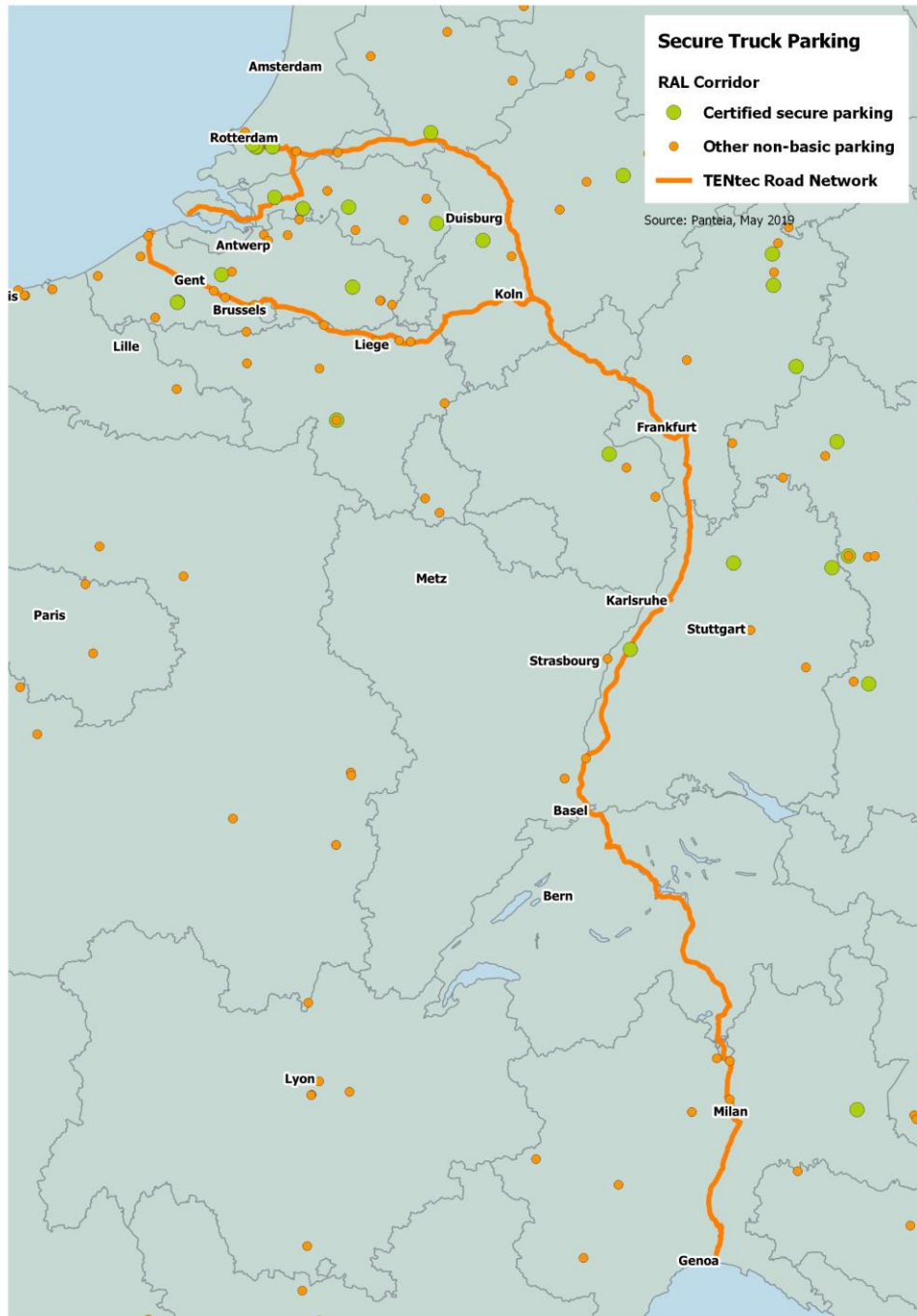
Source: Panteia (2019) on behalf of DG MOVE

<sup>3</sup> See EU Press release (11<sup>th</sup> March 2019)

[https://ec.europa.eu/transport/modes/road/news/2019-03-11-safe-and-secure-parking-spaces\\_en](https://ec.europa.eu/transport/modes/road/news/2019-03-11-safe-and-secure-parking-spaces_en)

The distribution of parking areas is shown in relation to the RALP road corridor below. The green markers indicate certified secure parking, while the orange ones indicate other “secure” sites either with LABEL ratings or with at least two forms of security facilities. It has to be noted that, even with full compliance, there may still be an uneven distribution of sites along the corridor, and also a shortage of capacity. One secure parking area of e.g. 100 HGV spaces every 100km does not fully correspond to the potential demand.

**Figure 5: Distribution of Secure Truck Parking Facilities, 2018**



Source: Panteia, 2019

## 3 Task 2 - Further refining of the project list

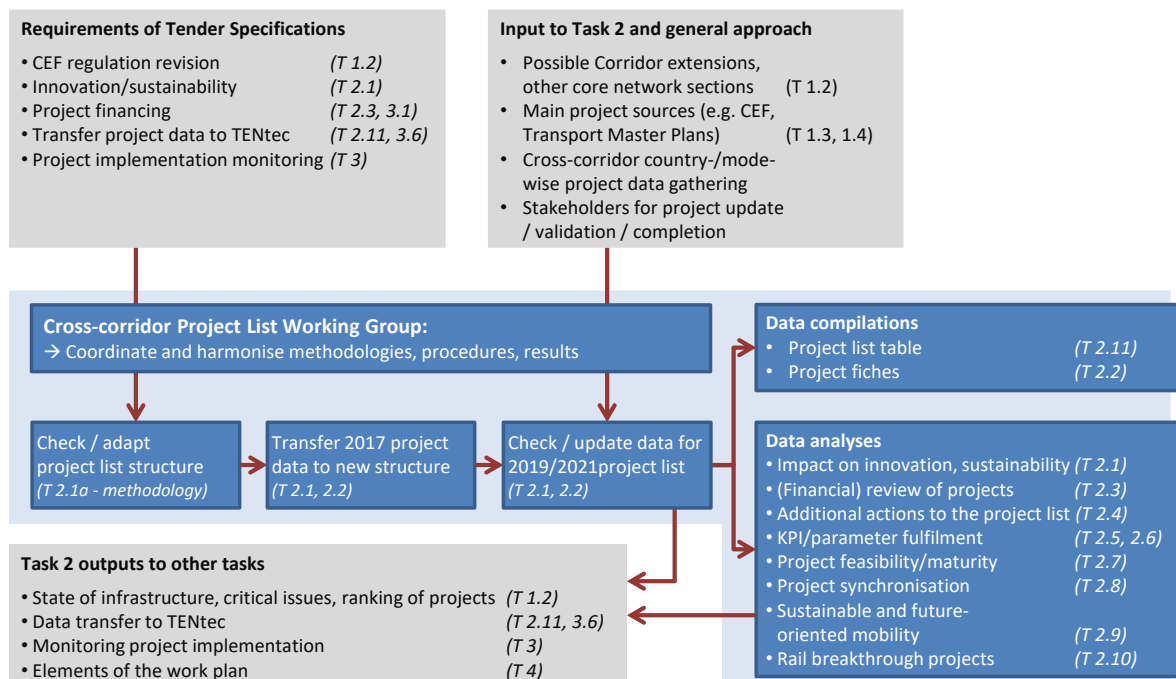
### 3.1 Overview on Task 2 efforts

In the first two phases of the TEN-T corridor studies, it became apparent that the project list is the key tool for monitoring and coordinating the further development of the Corridor. This includes the technical analysis of projects with respect to their contribution to the Corridor objectives (cf. the “KPI” columns of the project list). Moreover, it allows mirroring the projects and their impact against the Corridor’s bottlenecks and non-compliant sections according to Regulation 1315/2013 (gap analysis).

In the current study phase, the activities related to the project list have been continued and expanded in several respects. Figure 6 provides an overview on the main work steps as well as the interrelations within the subtasks and with other tasks. They can be assigned to the following groups of subsequent activities

1. Organisation of work;
2. Adaption of the project list structure (sub-task 2.1);
3. Completion and update of project data (sub-tasks 2.1, 2.2, 2.9, 2.10, 2.11, 3.6);
4. Analysis and exploitation of the project list (sub-tasks 2.3-2.10).

**Figure 6: Task 2 – main process steps and interrelations**



Source: HaCon

#### 3.1.1 Organisation of work

Already in project phase II, cross-corridor coordination turned out to be necessary to ensure harmonised methodologies and procedures, consistent project data (particularly in overlapping sections) as well as common understanding and interpretation of results. For this purpose, the cross-corridor working group from the second phase with respective project list lead partners from all consortia has been re-established. It tackles all project list related issues of Task 2 and Task 3. The cross-corridor working group was jointly led by HaCon (in relation to Task 2) and



KombiConsult (in relation to Tasks 3.1-3.3). The main activities of this working group were

- Kick-off meeting on 12<sup>th</sup> July 2018 in Brussels (together with DG MOVE);
- About quarterly cross-corridor web meetings;
- Several RD-consortium web meetings to transfer the cross-corridor agreements to all participants involved in Task 2 works;
- Additionally, participation in dedicated working meeting on structure/clearance gauges upon invitation of DG MOVE.

The main results of these working group activities consisted in

- Agreement on a common list structure, including its amendments (see chapter 3.1.2);
- Replacement of nine single, corridor-related project lists with individual bi-/tri-/multilateral data coordination by a common project list comprising all projects of the nine corridors;
- Cross-corridor work-sharing of data collection, update and consolidation in order to optimise work efficiency, to ensure data consistency and to enable one-face-approach of Member States and stakeholders;
- Development of a harmonised methodology for project list analysis and presentation of results.

### **3.1.2 Adaption of the project list structure**

The modification of the project list structure was based on the requirements of the Tender Specifications. Thus, the adapted project list structure includes the following additional information parameters:

- Project for sustainable and future-oriented mobility;
- Geo-coordinates: to enable reference to TENtec maps;
- TENtec section: for update of technical parameter data in TENtec;
- Additional rail KPIs: Structure gauge, Intermodal gauge;
- Rail breakthrough project;
- Implementation difficulties: Corridor Forum Members were asked in the course of the project list update to state any difficulties hindering the completion of the Core Network Corridor and requesting action by the European Coordinator;
- Total costs (estimated): In case no official costs were available, the consultants were to provide estimated costs instead.

In addition, experiences from the previous project phase were considered in order to improve data consistency and statistical analysability (with MS-Excel tools) as well as to facilitate the handling of the project list by the stakeholders. This led to the following modifications of existing parameters:

- Scope of work: "Study" to be filled by selection list (Study only, Study and works) instead of y/n-ticking;
- Maturity parameters: Only selection list entries allowed (no free text), additional entry in selection lists: "Not necessary";
- Total costs (official): renamed (formerly: "total costs") to point out difference to estimated costs (see above);
- Project with potential revenues: Only selection list entries allowed (no free text);
- Funding source "EU": Only selection list entries allowed (no free text).

Output/deliverables: 2-1-A: "The project list – a short introduction and guideline"

### 3.1.3 Completion and update of project data

The following work steps are based on the 2017 (phase II) Rhine-Alpine project list, including modifications of the table structure, as described above. In a first step, the data status was updated by adding further projects from 2016/2017 CEF calls, from new versions of the Member States' Transport Master Plans as well as from Member States' input from the previous project phase, which were received after deadline of the final reports of phase II. Such work steps were performed for all other corridor project lists as well.

The nine corridor lists were then merged to one overall, cross-corridor list (HaCon with input of all corridor consortia) in January 2019. This version of the overall project list has been used as basis for update by Member States/stakeholders. The respective work steps were:

- Splitting of the overall project list into some 40 sub-lists (by country, project promoter). Each of these sub-lists was assigned to one consultant company being responsible for approaching the project promoters included in the respective sub-list – January 2019;
- Data gathering at project promoters; merging of all contributions to one corridor list – January/February 2019;
- Coordination with Member States, other stakeholders and European Commission in different check/validation loops; after each loop merging to one cross-corridor project list – February-May 2019;
- Finalisation of the cross-corridor overall project list: several consistency checks (HaCon), whereas responsibility of contents remained with the indicated responsible partner. This list served as input for the user-friendly tool (developed and implemented by Panteia);
- Modification of Project Fiche layout and data feeding mechanisms;
- Check, gathering and creation of project maps (all, coordinated by HaCon);
- Creation of Project Fiches and provision in a web space – 31<sup>st</sup> May 2019

In parallel, the consultants completed project data for the new information parameters (see chapter 3.1.2) – March-September 2019:

- Cost estimations (sub-task 2.2): based on M-Five cost factors, performed for projects without official costs and with KPI achievement;
- Projects for sustainable and future-oriented mobility (sub-task 2.9): calculated from "scope of work entries". The condition is fulfilled, if the project's scope covers "Clean fuels" and/or "Telematics application" and/or "Sustainable freight transport services";
- Rail breakthrough projects (sub-task 2.10): classification based on EC guidelines;
- Geo-coordinates (sub-task 2.11): In order to enable reference of the projects by the TENtec system, one pair of geo-coordinates (latitude, longitude) has been added to the project data sets. The coordinates relate to the middle of the project length. The exercise was performed for all projects with a clear geographical location (section or node);
- TENtec section (sub-task 3.6): Assignment of TENtec sections to each project completed in 2016 and 2017 that shows at least one entry "KPI achieved".

The combination of updates by the Member States/stakeholders with the data completion by the consultants resulted in the final Project List update 2019.

More details on these work steps are included in document 2-1-A: "The project list – a short introduction and guideline" (see above).

Output/deliverables: 2-2-A: Final status of the RALP project list update 2019 (MS-Excel)

2-2-B: The User-Friendly Tool (MS-Excel Macro)

## 2-2-C: RALP Project fiches

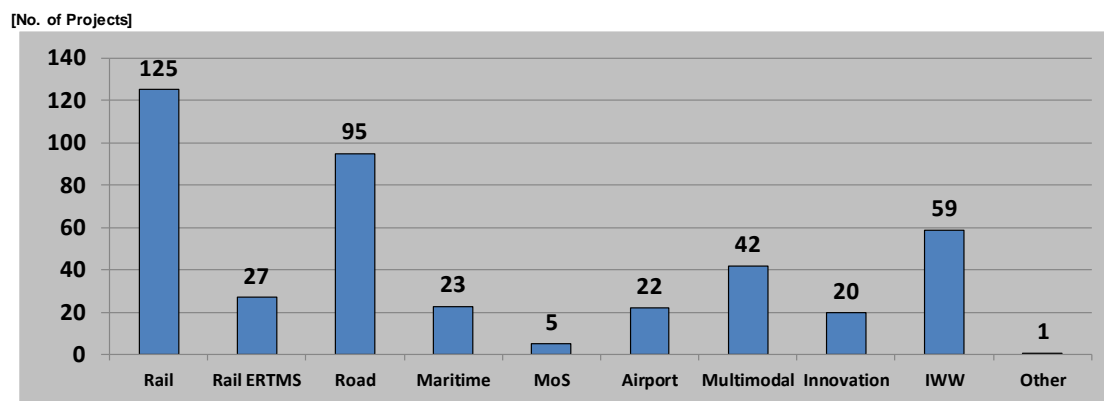
### 3.1.4 Analysis and exploitation of the project list

The following paragraphs summarise the most important results from the analysis of the updated project list, as delivered in May 2019 and supplemented by additional data for the new parameters by September 2019 (see chapter 3.1.3). These - and further - results have been presented before on the 13<sup>th</sup> Corridor Forum (17<sup>th</sup> June 2019) and on the 14<sup>th</sup> Corridor Forum (18<sup>th</sup> November 2019) or were published in the "Final charts on the project list" (see "output/deliverables" at the end of this chapter).

#### Sub-tasks 2.1 + 2.2: "2019 CNC Project List update"

The main key figures of the updated projects list, including comparison to the final list of project phase II (2017), are displayed in Figure 7.

**Figure 7: RALP 2019 corridor projects at a glance**



Source: KombiConsult analysis based on 2019 Project List of RALP Corridor / Basis: 419 projects; Status: May 2019

- **Total:** 419 corridor projects
- **Thereof:** 60 projects (14%) completed in 2014 – 2018  
94 projects (22%) with end date in 2019 – 2020
- **Investments:** € 121 bn (official costs)
- **Thereof:** 41.0 (CH), 40.2 (DE), 21.8 (IT), 9.6 (BE), 5.6 (NL), 2.8 (multiple)

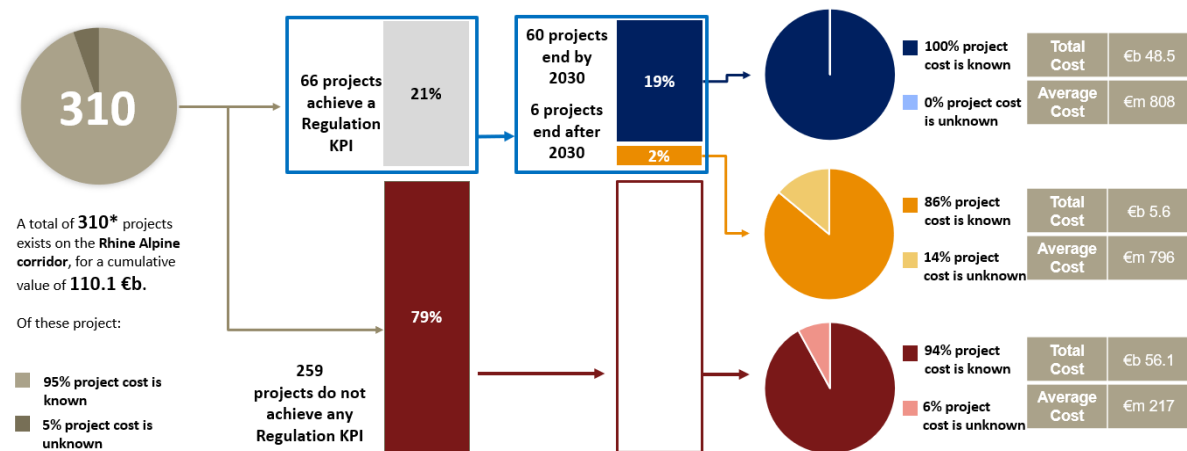
Source: HaCon analysis based on 2019 Project List of CNC Rhine-Danube, status: May 2019

In total, 419 projects were included in the Rhine-Alpine project list of May 2019. In comparison to the 2017 project list, this updated project list shows an increase of 101 projects or of 32%. The main origins for this growth are the 2016 and 2017 CEF calls as well as additional projects provided by the Member States. Concerning project categories, the main projects come from Rail and Rail ERTMS (152), Road (95) and Inland Waterways (59). The total official projects costs amount to € 121 bn.

#### Sub-task 2.3: "Critical review of projects"

The project list can be analysed through a series of lens, in order to shine a light on different aspects of the projects composing it. The first step in performing the financial analysis has been an assessment of the maturity status of the pipeline, summarised in the following figure. This exercise included counting the number of active projects and clustering them through different metrics, such as their contribution to at least one Regulation KPI, their timing and the availability of an official cost figure.

As depicted in the diagram below, the vast majority (95%) of the projects have information on cost, and this high share is also reflected through the three subcategories.

**Figure 8: Number of projects and values by category**


\* The analysis does not consider projects ending before 31/12/2018 and sub-projects, i.e. projects for which the cost is included in bigger projects

Source: PwC

The following step in the analysis consisted in determining the funding sources of the projects, with particular reference to the economic effort of the European Union. As of now we have clear and complete information on the funding sources of projects accounting for € 59.3 bn, or 53.9% of the list's value; of those, € 1.1 bn (1.8%) come from EU funding, with the vast majority of funding coming from CEF/TEN-T grants, and the remaining part accountable for ESIF grants. A really high share (94%) of the EU funding has already been approved, with the remaining share of funding still listed as "potential", i.e. yet to be confirmed.

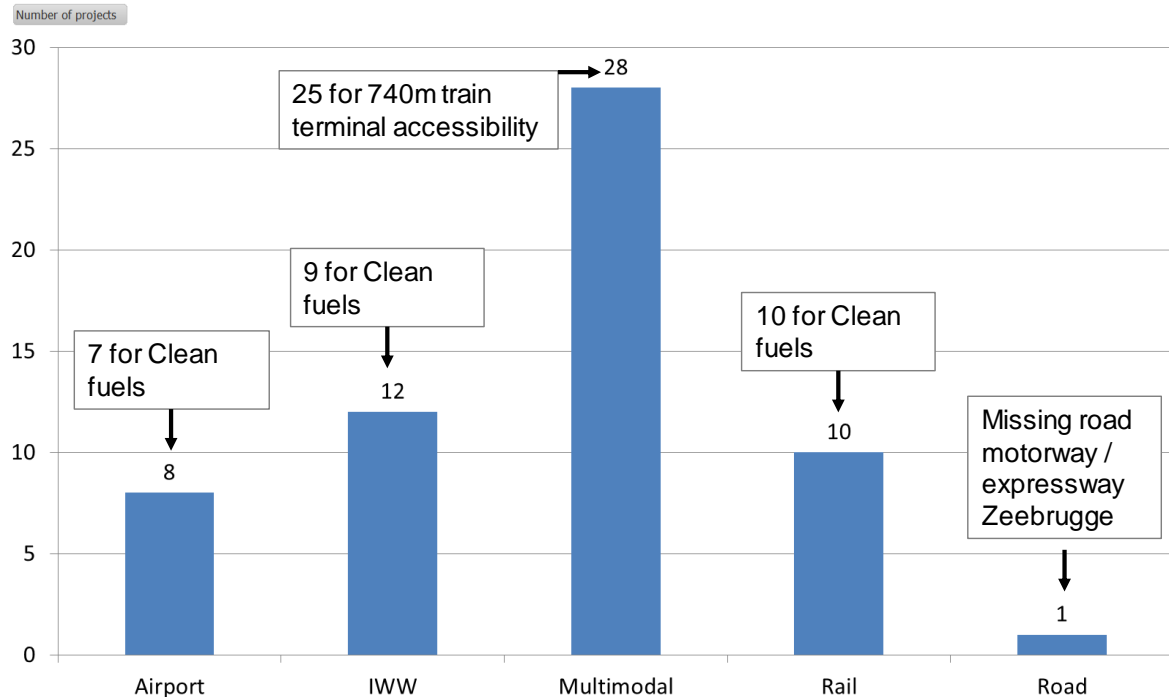
The final step of the analysis consists in determining the number and value of RALP projects able to generate returns from the market to cover the operating and possibly a share of the capital expenditure. According to our findings, over 15% of the projects are potentially financially sustainable. More specifically, from those:

- 16.7% of the total projects investment, for a total value of € 18.4 bn, are financially sustainable fall in this category. Projects fall in this group following either a direct assessment from the project owner promoter or a subsequent analysis of the consultants.
- 0.7% of the total projects investment, for a total value of € 0.8 bn, present Good potential for financial sustainability. Projects included in this category, are considered appropriate for it based on consultants' assessment.
- 82.6% of total projects investment, for a total value of € 90.7 bn, have Low to non-existent potential for financial sustainability. This was based either on a direct assessment from the project owner or on a subsequent analysis of the consultants.

#### Sub-tasks 2.4 ("Proposal for additional projects") + 2.8 ("Synchronisation of projects")

Additional projects have been proposed by the consultants for each corridor (sub-task 2.4). They are result of the compliance analysis (existing compliance gaps vs. ongoing/planned projects in the project list) and shall fill remaining compliance gaps on the corridor until 2030. These proposals should be understood as basis for discussions between the European Commission and the Member States.

For the Rhine-Alpine corridor, 59 additional projects (all modes) were proposed (see Figure 9). They show a clear focus on dedicated transport modes (Multimodal followed by IWW and Rail) and on KPIs (86% for Clean fuels and Train length in terminals).

**Figure 9: Proposed additional projects on the Rhine-Alpine corridor**


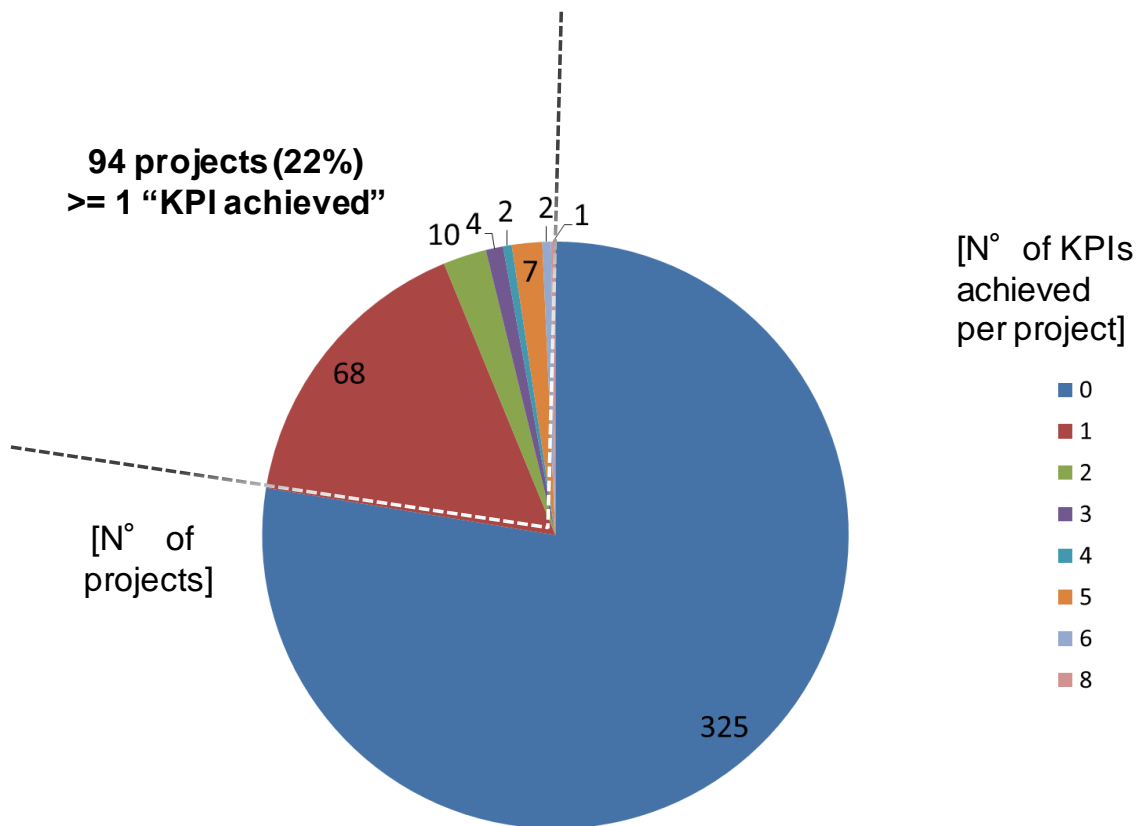
Source: HaCon analysis based on 2019 Project List of CNC Rhine-Alpine, status: May 2019

Within sub-task 2.8, the additional projects have been synchronised with the finalisation of existing projects in the same or neighbouring sections/nodes with the aim to have similar completion times. This will allow the European Coordinator to make appropriate suggestions to the Member States as regards the scheduling and timing of individual infrastructure projects.

Sub-tasks 2.5 ("Information on obtained parameters and realised KPIs") + 2.6 ("Project contribution to additional indicators")

94 of totally 419 Rhine-Alpine projects (22%) provided achievement of at least 1 KPI (TEN-T parameter, see Figure 10). In most of these cases (68 projects), only one KPI was achieved; only in exceptional cases, more than three KPIs were achieved by one project (n.b.: the number of theoretically achievable KPIs also depends on the mode: more than three KPIs are assigned only to Rail and IWW).

**Figure 10: Rhine-Alpine projects and number of achieved KPIs**



Source: HaCon analysis based on 2019 Project List of CNC Rhine-Alpine, status: May 2019

In turn, 78% of the projects in the Rhine-Alpine project list did not contribute to the compliance of the TEN-T parameters. This is partially due to the nature of the project (pure study). In most cases however, these projects contribute to the development of the corridor outside the KPIs of the Regulation.

Such impacts have been analysed in sub-task 2.6 in the form of "additional indicators". Such indicators are no KPIs according to Regulation, but important for smooth operation:

- Elimination of current or potential future capacity bottleneck (rail);
- Elimination of strong incline (rail);
- Removal of single track section (rail);
- Contribution to good navigation status (IWW).

113 Rhine-Alpine projects (27% of all Rhine-Alpine projects) contributed to these indicators, particularly to the alleviation of rail capacity bottlenecks (81 projects) and to good navigation status (14 projects).

#### Sub-task 2.7: "Projects' feasibility/maturity"

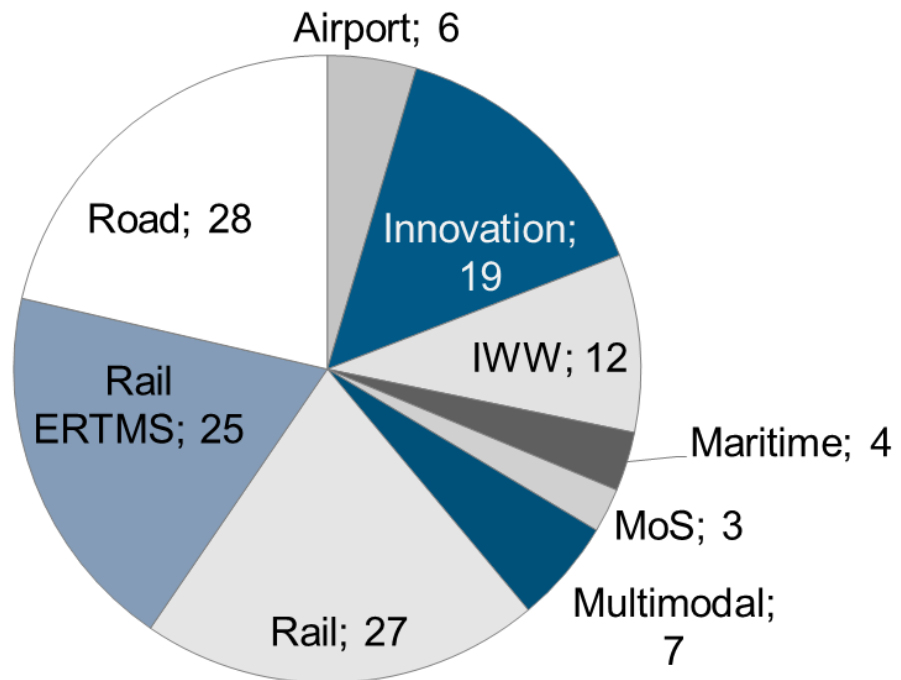
This topic is covered by Task 3 (Project Implementation Reports), see chapter 4.

#### Sub-task 2.9: "Projects for sustainable and future-oriented mobility"

Projects for sustainable and future-oriented mobility are projects with innovation elements. They are characterised by impacting on alternative clean fuels, telematics applications or sustainable freight transport services. The project list allows filtering for these characteristics.

In total, 131 corridor projects fulfil these conditions (= 31% of all Rhine-Alpine projects). The largest share of the sustainable projects is assigned to Road (28 projects), followed by Rail (27 projects) and Rail ERTMS (25 projects), see Figure 11.

**Figure 11: Rhine-Alpine projects for sustainable and future-oriented mobility**



Source: HaCon analysis based on 2019 Project List of CNC Rhine-Alpine, status: May 2019

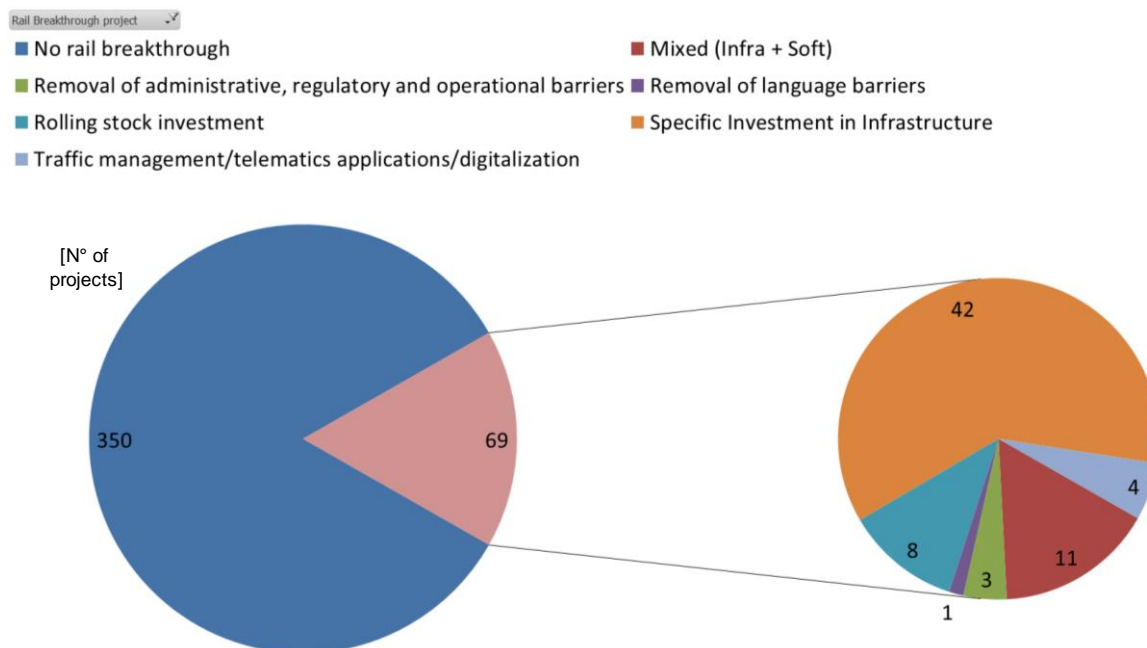
Regarding geographical allocation, 46 sustainable projects take place in several countries. Specific countries with many sustainable projects are Germany (33 projects) and Italy (25 projects).

The overall investments of the sustainable projects sum up to € 34.35 bn; they thus represent 28.4% of the total official costs of the Rhine-Alpine projects.

#### Sub-task 2.10: "Rail Breakthrough projects"

Rail breakthrough projects have been defined in a DG MOVE Paper elaborated by Coordinators GROSCH (OEM) and VINCK (ERTMS) in November 2017. Such projects aim at "Quick Wins" to support pure infrastructure investments. Their implementation shall take place until 2023.

The analysis of the updated project list revealed 69 projects to be classified as "Rail breakthrough" (16% of all Rhine-Alpine projects). As Figure 12 visualises, most of these projects are of type "Specific investments in infrastructure" (42 projects (61%)), followed by "Mixed" (11 projects (16%)) and Rolling stock investment (8 projects (12%)).

**Figure 12: Rhine-Alpine Rail breakthrough projects**


Source: HaCon analysis based on 2019 Project List of CNC Rhine-Alpine, status: May 2019

The Rail breakthrough projects represent total investments of € 32.8 bn, which is 27% of Rhine-Alpine overall official project costs. They are particularly allocated to Germany (21 projects), Switzerland (16 projects) and Italy (14 projects).

Output/deliverables: 2-3-A: "13th Corridor Forum – Rhine-Alpine: 2019 CNC Project List update (Task 2)"; Brussels, 17 June 2019

2-3-B: "Final charts on the project list - Supplement to the charts presented on Corridor Forum Meeting June/2019, supplemented by charts presented on Corridor Forum Meeting November/2019"

2-4-A: List of additional Rhine-Alpine projects (MS-Excel)

For more details on the task 2/3 conclusions and work steps, please take note of the guidance document ("Project list-short introduction\_20190506.pdf").

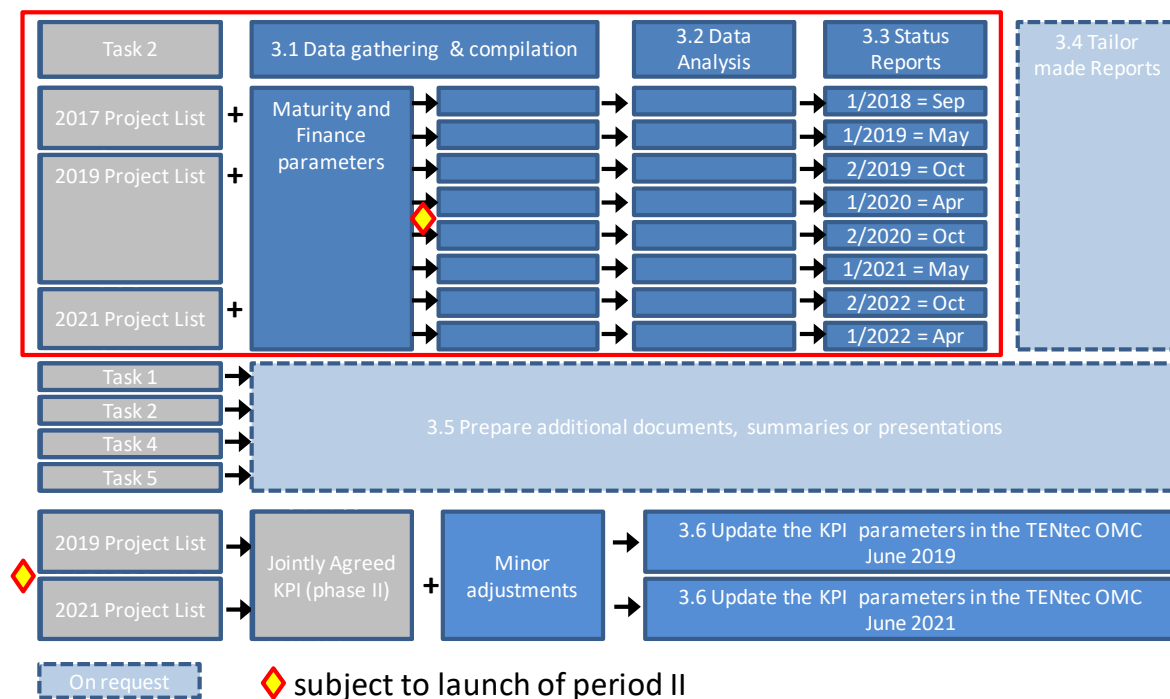


## 4 Task 3 - Monitoring and analysing the state of project implementation and reporting

### 4.1 Overview on efforts for project implementation monitoring

The project implementation monitoring builds on the requirement that biannual updating the entire project list (see Chapter 3) as well as the Work Plan of the European Coordinators (see Chapter 5) should be accompanied by a more frequent status analysis of the projects. This shall allow the Commission and the Coordinator to counteract in case of inconsistencies and delays. This project monitoring relates to sub-tasks 3.1-3.3 (see, Figure 13 red frame).

**Figure 13: Task 3 - Detailed work programme and interrelations**



Source: Consultant's presentation at Kick-off meeting, updated for Working Group Meeting on 12/7/2018

For this purpose, "narrow updates" of the project list are performed every six months between the regular complete updates (2019 and 2021) in order to trace the implementation progress of existing projects. "Narrow update" means that Member States and other stakeholders are requested to update selected project parameters, which are particularly relevant for the semi-annual monitoring:

- Project maturity and implementation;
- Project costs and financing/funding.

The complete and the "narrow" updates of the project list are then exploited within Project Implementation Reports (PIRs). By end of project phase III, the following "narrow" updates and PIRs have been performed:

- PIR 1/2018, submitted by 29 October 2018; basis: final project list of phase II (2017);

This Project implementation report includes a common approach for all nine CNCs, which had been jointly elaborated in the Task 2/3 cross-Corridor Working group and was provided by KombiConsult on behalf of all consortia on 29 August 2018 to DG MOVE. It includes a detailed approach of analysis, results and detailed structure to be applied in each subsequent PIR.

- PIR 1/2019, submitted by 28<sup>th</sup> June 2019; basis: complete project list update 05/2019);
- PIR 2/2019, submitted by 17<sup>th</sup> December 2019; basis: narrow project list update 10/2019;

This “narrowly updated” version of the project list has also been used as basis for 4<sup>th</sup> Work Plan (see Chapter 5);

PIR 1/2020, submitted by 28<sup>th</sup> April 2020; basis: narrow project list update 04/2020.

#### **4.1.1 Main results of the Project implementation monitoring**

The following paragraphs comprise the most important results from the Project Implementation Reports. The detailed outcomes of the analyses are available in the PIR documents attached (see listing at the end of this chapter).

##### Project maturity - Completion time clusters:

Figure 14 and Figure 15 visualise the number of projects per completion time cluster, as absolute figures and as relative shares, cumulating to 100%.

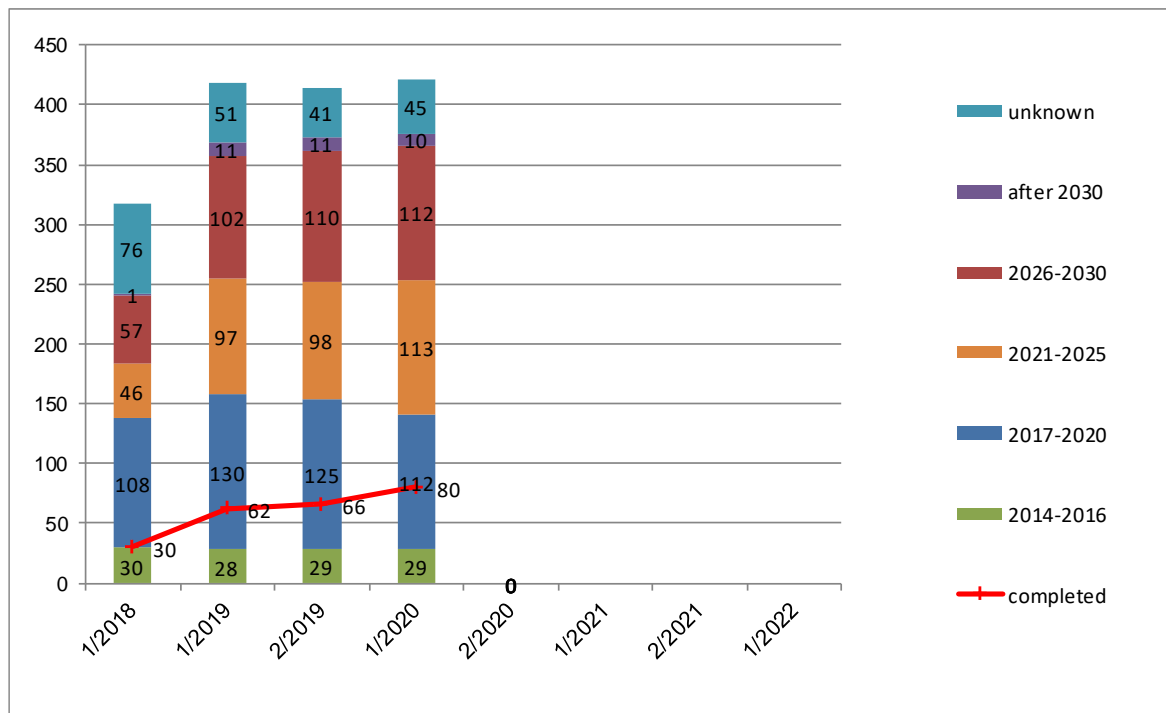
Compared to the complete project list update in 05/2019 (see chapter 3, the number of RALP projects has increased from 419 to 421 in PIR 1/2020.

At the same time, the number of completed projects increased from 62 (PIR 1/2019) to 80 (PIR 1/2020). In consequence, the share of completed projects in the total number of projects increased from 15% (PIR 1/2019) via 16% (PIR 2/2019) to 19% (PIR 1/2020). These completed projects are still included in the PIRs in order to document the progress made on the Corridor since implementation of EU Regulations 1315/2013 and 1316/2013.

The allocation of the projects to the completion time clusters shows a slight tendency to shift finalisation of projects from 2017-2020 to the subsequent time clusters, in particular to 2021-2025. In consequence, the number of projects, which have been already concluded or shall be finished by 2020, has decreased: from 158 (PIR 1/2019) via 154 (PIR 2/2019) to 141 (PIR 1/2020). In the “critical” time window 2026-2030, over 26% of the projects are still to be finalised.

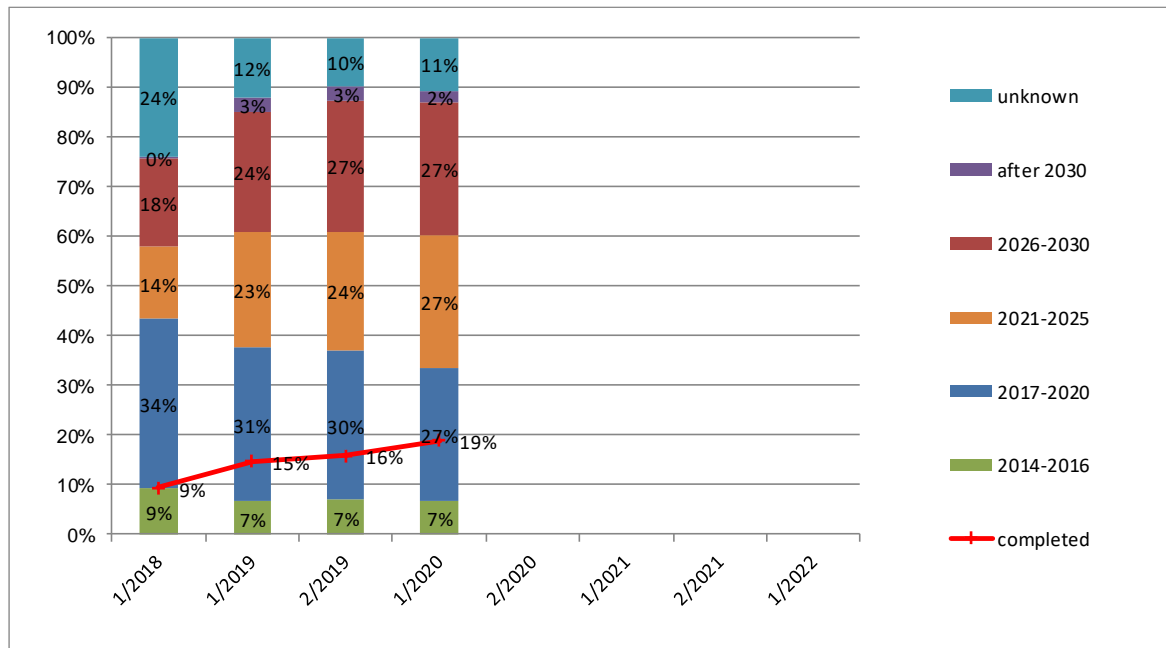
In total, it can be stated that by PIR 1/2020, 87% of the projects are expected to be completed by end of 2030, against 85% in PIR 1/2019 and 87% in PIR 2/2019. However, ten projects have a finalisation date after 2030.

**Figure 14: Diagram of maturity criterion “expected completion time” in the Implementation Reports [N° of projects]**



Source: KombiConsult analysis based on CNC Rhine-Alpine project list (respective updates)

**Figure 15: Diagram of maturity criterion “expected completion time” in the Implementation Reports [share of projects]**



Source: KombiConsult analysis based on CNC Rhine-Alpine project list (respective updates)

Project maturity - Detailed project maturity parameters:

For the detailed monitoring of implementation progress, the highest implementation level of the maturity parameters is of particular relevance (“Concluded”, “Completed”

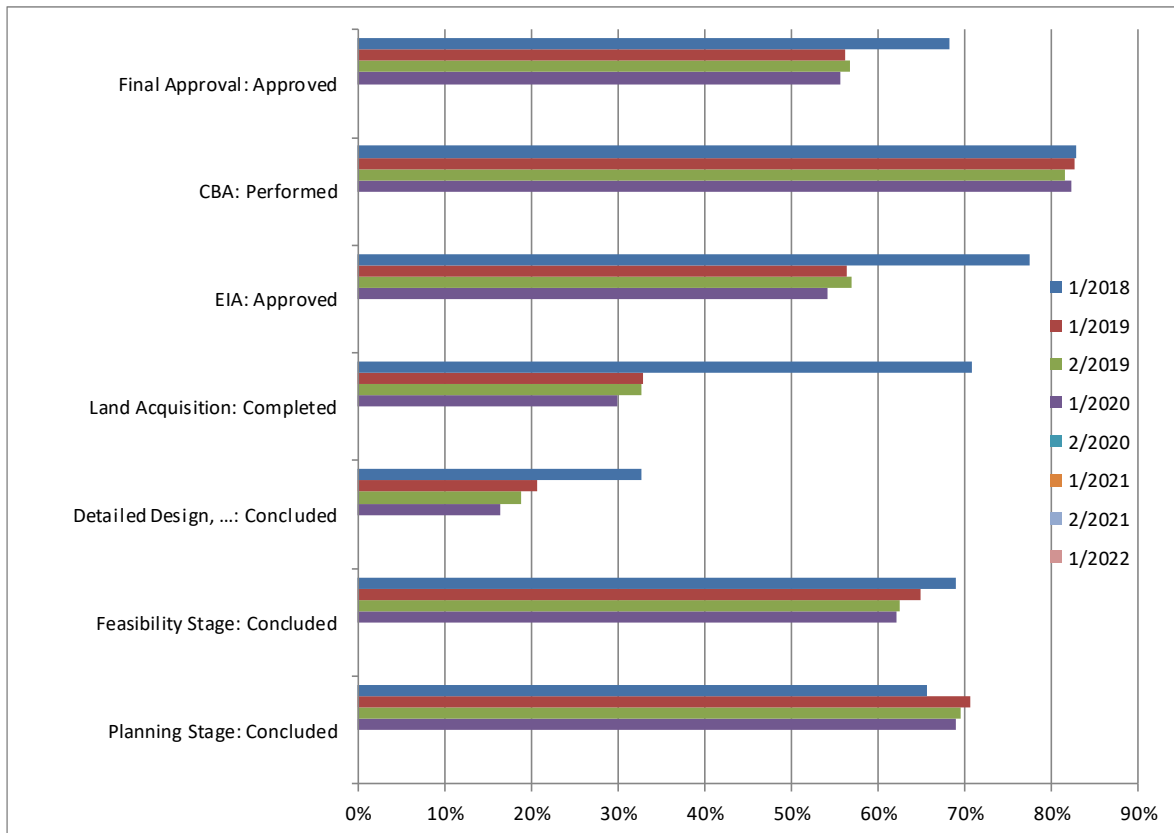
etc.). Moreover, a standardised display is requested in order to allow comparing maturity levels of different parameters. This standardisation is realised by referring to the number of "relevant" projects. The "relevant" projects consider that not all maturity parameters are necessary for each project (indicated by "not necessary" or [empty]). Moreover, finalised projects are excluded from this analysis, as they cannot show any further development of maturity.

Figure 16 displays the maturity parameters and the share of relevant projects with highest maturity level. Most of the parameters show only slight variations since the first PIR. "Planning stage" "Feasibility stage" and "CBA", which often are prerequisites for the "Final approval", show particularly high maturity grades. The low maturity level of "Land acquisition" is due to the fact that this issue tends to be long-lasting and complicated in many projects. Reasons for this might be unclear land ownerships, negotiations about land purchase or even court proceedings on land expropriations, which often extend over several instances.

The "Final project approval by relevant governmental & administrative authorities" remains at only slightly more than 50%. A cross-check with the planned start-date of the projects with a lower maturity level revealed that about two third of these projects have indeed not started yet; pending final decisions by the authorities are therefore plausible.

Generally, there is no continuous increase of the maturity levels, as one could have expected. However, such an assessment does not take account of the fact that completed projects - with naturally very high maturity degrees - drop out of the calculation with the subsequent PIR. Projects that follow in completion time only partially equalise this effect by increasing their maturity levels. Newly added projects often even have a contradictory impact, because they are introduced into the project list with a low "entry maturity value". Therefore, a more or less constant overall picture is plausible. This overall picture can also be observed in other corridors.

**Figure 16: Status and evolution of maturity parameters (share of relevant projects with highest maturity level by parameter)**



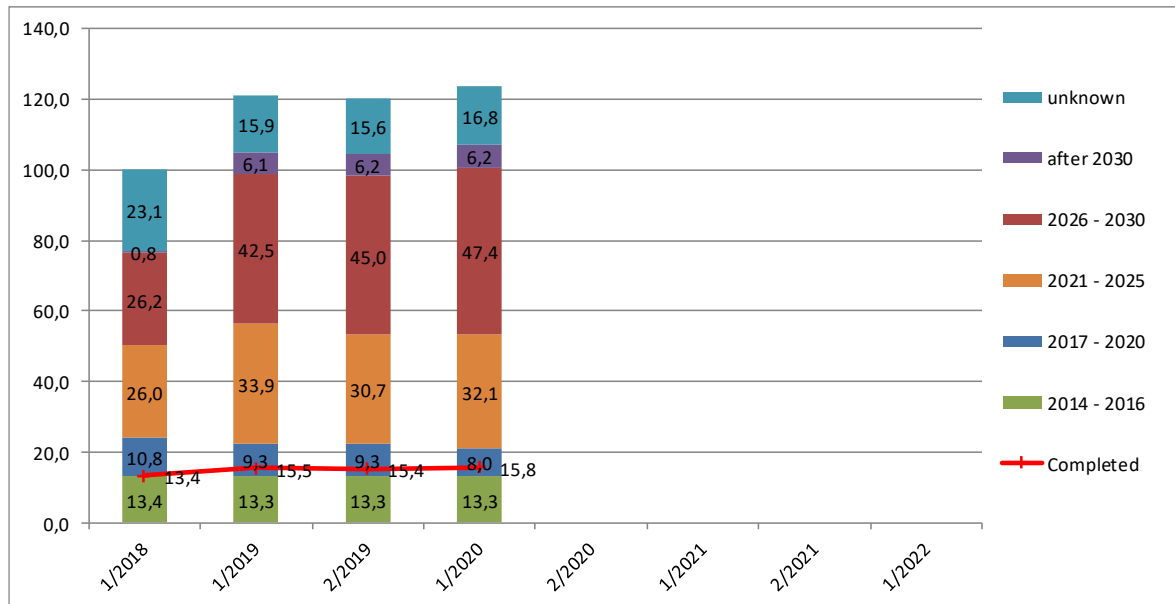
Source: KombiConsult analysis based on CNC Rhine-Alpine project list (respective updates)

Project finance – Official costs by completion:

Figure 16 and Figure 17 visualise the number of official project costs (i.e. cost figures verified by the project promoters) per completion time cluster, as absolute figures and as relative shares, cumulating to 100%.

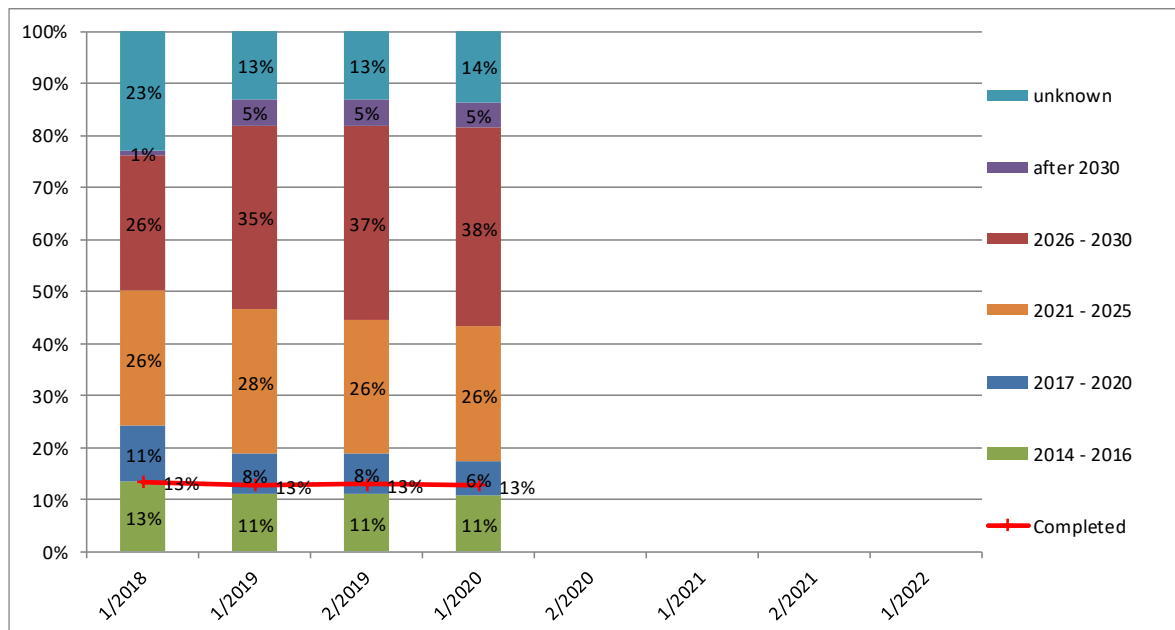
Since the first Project Implementation Report 1/2018, the overall official projects costs have increased from € 100.3 bn to € 123.8 bn.

**Figure 17: Diagram of finance criterion “project costs (official)” by completion time in the Implementation Reports [€ bn]**



Source: KombiConsult analysis based on CNC Rhine-Alpine project list (respective updates)

**Figure 18: Diagram of finance criterion “project costs (official)” in the Implementation Reports [share of completion time clusters]**



Source: KombiConsult analysis based on CNC Rhine-Alpine project list (respective updates)

Summarising, the PIRs show the following main developments:

- Since the first Project Implementation Report, costs of completed projects increased from about €13.5bn to €15.8bn, but keeping its share at 13%;
- The project costs in the several timeframes from 2017 to 2020 decreased, there while the project costs in the timeframes from 2021 to “after 2030” increased;

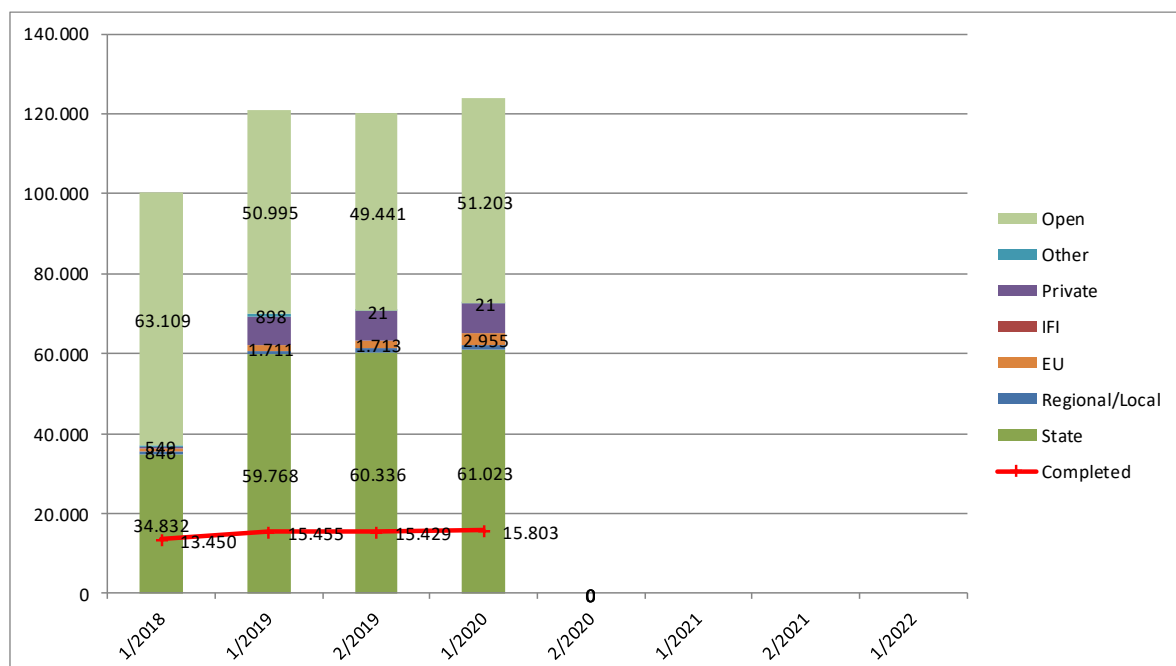
- The project costs allocated to projects of which the completion time is not known decreased from €23.1bn to €16.8bn; it is still a high amount for projects where it is not known when they will be finished, but, in comparison with the 2017 list and taking into account that there are 103 RALP relevant projects more in the April 2020 project list, it means that either the planning of many projects is well in progress, more projects are in the realisation phase, or the quality of the project list has improved;
- Projects with late (2026-2030, after 2030) finalisation particularly refer to transport mode Rail + Rail ERTMS with 58 projects in these time clusters, also representing the biggest share with €35.2bn costs, followed by Road (€15.6bn costs) and IWW (€1.3bn costs);
- Most costs allocated to projects where the finalisation is unknown are Rail + Rail ERMTS (€13.8bn costs), followed by Airport (€2,4bn). The other categories cumulate to €0.5bn costs altogether;
- Of the 80 projects that are completed so far, most project costs refer to project category Rail + Rail ERTMS with €13.0bn, followed by Road (€1.5bn costs), IWW (€0.6bn costs) and Airport (€0.3bn). The other categories have “only” costs of ~€0.4bn altogether.

#### Project finance – Financing sources:

Figure 19 and Figure 20 allocate the official project costs to the financing and funding sources in absolute and relative figures, regardless if this financing has been classified as “approved”, “potential” or “unknown”.

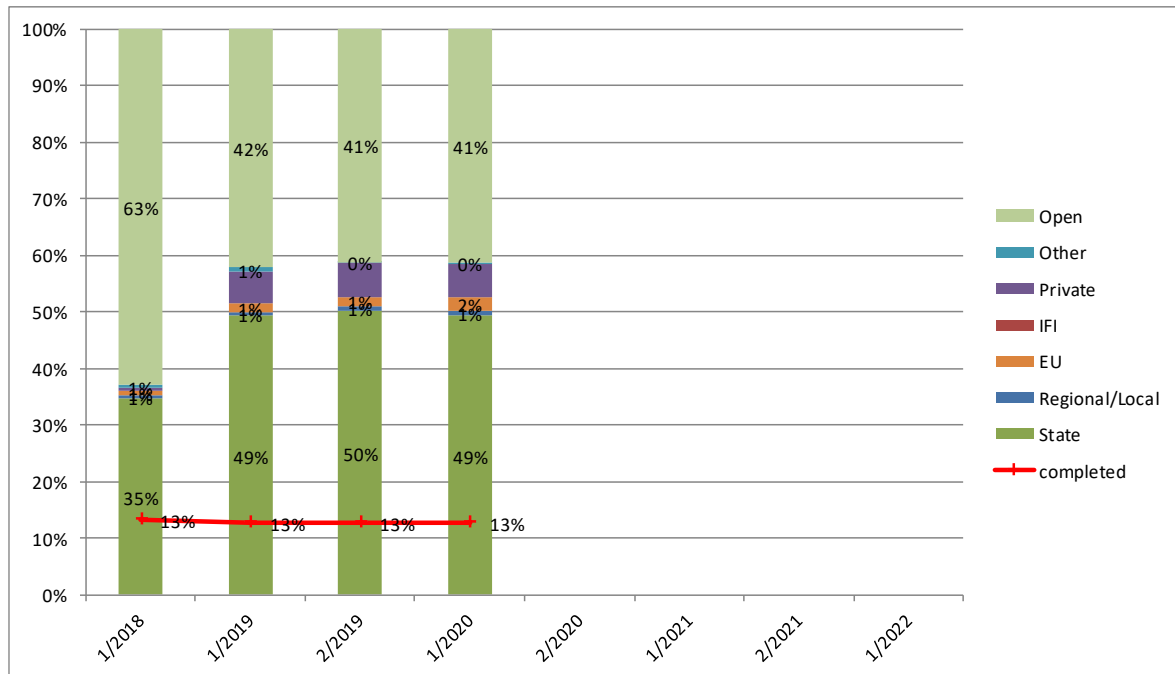
State budgets are the main contributors to the project cost coverage in all Project Implementation Reports. Next to these main funding sources, only “Private” financing” has nameable importance and accounts for another 6% share of the overall financing. In contrast, “Regional/local”, “EU”, “IFI” and “Other” financing play only a minor role. In PIR 1/2020, a high share with 41% of the official project costs were not assigned to any financing source, though decreased from formerly 63% in PIR 1/2018.

**Figure 19: Evolution of project financing sources and value of completed projects (official costs only) [€ bn]**



Source: KombiConsult analysis based on CNC Rhine-Alpine project list (respective updates)

**Figure 20: Shares of project financing sources [shares] and value of completed projects (official costs only)**



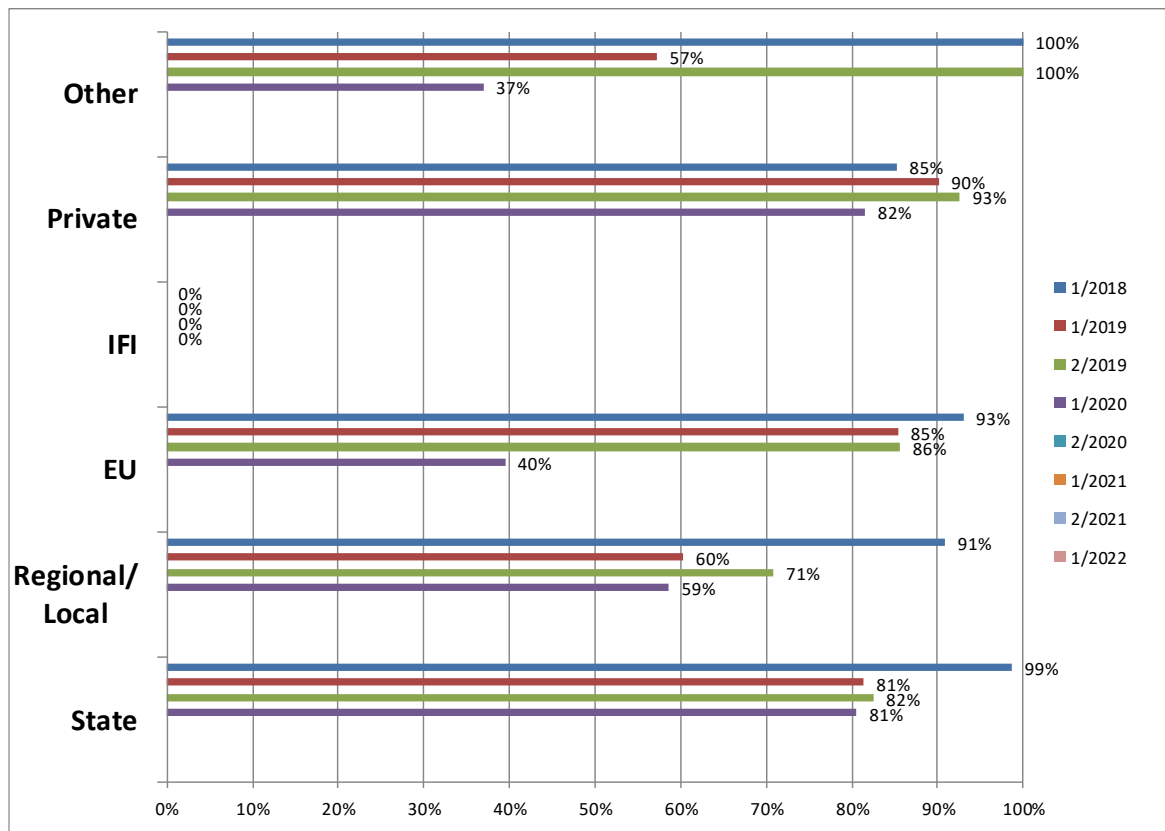
Source: KombiConsult analysis based on CNC Rhine-Alpine project list (respective updates)

#### Project finance – Levels of financing commitment:

The level of financing commitment is an important indicator for evaluation of the project implementation. This is expressed by the share of “approved” against “potential” and “unknown” financing. This analysis includes official costs of ongoing and planned projects only; they are basis for the calculation of “relevant costs”. In contrast, finalised projects are excluded, as these projects must have already been financed completely.

Figure 21 shows the development of the highest financing level (“approved”) since the first PIR.



**Figure 21: Evolution of share of “approved” financing by source on the CNC RALP**


Source: KombiConsult analysis based on CNC Rhine-Alpine project list (respective updates)

The overall “relevant” project costs increased from € 86.8 bn (PIR 1/2018) to € 105.6 bn (PIR 1/2019). In PIR 2/2019, they showed a decrease to € 104.7 bn, to rise again to € 108.0 in the current PIR.

Out of these costs, ~€70.5bn have an indicated financing source and for another ~€56.6bn the financing is already approved. “Private” and “State” financing sources show the highest approval rates with 82% and 81% respectively, followed by “Regional/Local” financing with about 63%, meaning that for each of those three financing sources more than half of the costs is secured. The approval rates for “EU” and “Other” financing sources are below 50% with 44% and 37% respectively. For the RALP corridor relevant projects there are still no IFI financed costs indicated at all.

#### Project implementation difficulties:

Based on the methodology provided in PIR 1/2018, Corridor Forum Members were asked in the course of the project list update to state any difficulty in the implementation of a specific project by answering the following questions:

*“Does this project show any difficulties, which jeopardize the completion of the Corridor by 2030?”*

*“If yes: Please describe the nature of the difficulties and explain why they jeopardize the completion of the Corridor. Please indicate, if and what kind of support you may need from the European Coordinator. Please describe the nature of the difficulty, why it jeopardizes the completion of the Corridor as well as why and how the European Coordinator should act.”*

In PIR 1/2020, the first question was answered with “yes” for two projects by Rhine-Alpine Member States/stakeholders. However, none of them requested support by the European Coordinator.

In addition to these explicit statements by the stakeholders, projects deserve special attention, if their expected end date is “unknown” or “after 2030” and if they have particular relevance for the completion of the corridor. The latter condition is expressed by at least one “KPI achieved”. In total, 12 projects were on this “critical list” in PIR 1/2020.

Output/deliverables: 3-1-A: RALP Project Implementation Report 1/2018  
3-1-B: RALP Project Implementation Report 1/2019  
3-1-C1: RALP Project Implementation Report 2/2019  
3-1-C2: RALP project list (narrow update 10/2019)  
3-1-D1: RALP Project Implementation Report 1/2020  
3-1-D2: RALP project list (narrow update 4/2020)

Overview on efforts regarding the use and update the technical parameter data in TENtec OMC

The upload of compliance data for TEN-T parameters for the years 2016/2017 is technically prepared by the TENtec unit with compliance maps and XLS tables since the 3<sup>rd</sup> Management Meeting. The consultant’s service to transfer existing compliance data of these years into prefabricated XLS files has been taken place in June and July 2019.

## 5 Task 4 – Providing the elements for the updates of the Work Plan

### 5.1 Overview on efforts

The Consultants provided the needed support to develop the fourth Work Plan of the European Coordinator. The related activities have been developed in an organic manner, aiming at preparing all work plan's sections in a logical way, fully exploiting all relevant input received from the analysis of the data, the examination of relevant literature, the consultation of the stakeholders, as well as from the project activities themselves.

A working group led by Panteia (with the corridor consultants IC, CSE COE, Systema, HPC, KombiConsult, Stratec, TIS, TPlan and PwC) was created to discuss and propose an agreed common structure and contents of the work plans.

On the 1<sup>st</sup> of July 2019, some indications from EC were received. The proposed work plan structure and content was concluded by the working group and discussed with the advisors at a management meeting on 10<sup>th</sup> October 2019.

After receiving some feedback from the EC, the structure, content and an indicative number of pages per chapter was agreed upon.

- 2<sup>nd</sup> July 2019 Preliminary indications from EC regarding the work plan;
- 19<sup>th</sup> July 2019 Working group created and discussions amongst the group;
- 10<sup>th</sup> October 2019 Management meeting- discussion about Task 4/WP;
- 18<sup>th</sup> October 2019 Draft structure of the WP content including a proposal for pages layout to be sent to advisors;
- 23<sup>rd</sup> October 2019 Draft structure agreed by EC;
- 18<sup>th</sup>-22<sup>nd</sup> November 2019 Corridor Forum week – WP elements presentation;
- December 2019 Submit the draft WP to Corridor advisors.

A short description of the structure is provided below:

- Section 1 comprises an introduction of the European Coordinator.
- Section 2 is describing the results of the current compliance analysis for the transport mode and the expected compliance by 2030 including the description of persisting bottlenecks.
- Section 3 presents the key results of the Multimodal Transport Market Study for all defined scenarios, including a reference to modal split and decarbonisation challenges.
- Section 4 shows the identified RALP projects to be realised by 2030. It also includes a description on still existing challenges structured according transport modes.
- Section 5 deals with the funding needs of the Corridor, analysing the economic and financial aspects of the projects. Additionally, a short description of the concept of innovating financing instruments and the respective financing framework together is included.
- Section 6 provides recommendations and an outlook by the European Coordinator.

## **5.2 Status of the Work plan**

The 4<sup>th</sup> Work plan was submitted to Member States in March 2020, comments were received, and a new updated version was resubmitted for approval on 18<sup>th</sup> May 2020.

The process of formal approval the Work Plan of the RALP Corridor is currently ongoing.

Task 4 will be repeated for the second time in the current loop of studies in the second half of 2021.

## **6 Task 5 - Preparing, supporting and following up of the meetings of the Corridor Forum and its Working Groups**

### **6.1 Meetings of the Corridor Forum**

The European Coordinator is assisted in the performance of his tasks concerning the Work Plan by the Corridor Forum. In the third phase, again all meetings were held in the scope of half a day in the premises of DG MOVE in Brussels, in a similar setup to 2015-2017.

- the 12<sup>th</sup> meeting of the Rhine-Alpine Corridor Forum was held on 19<sup>th</sup> November 2018;
- the 13<sup>th</sup> Corridor Forum of the Rhine-Alpine Corridor Forum was held on 17<sup>th</sup> June 2019;
- the 14<sup>th</sup> Corridor Forum of the Rhine-Alpine Corridor Forum was held on 19<sup>th</sup> October 2019
- the 15<sup>th</sup> Corridor Forum planned for June 2020 was cancelled due to the COVID-19 crisis.

For all meetings, the agenda and invitation letter have been prepared in coordination the Corridor advisor. A presentation has been prepared and sent to the Corridor advisor. After approval, all relevant information has been sent out to the Forum members by email. The list of Corridor Forum Members has been permanently updated. Minutes of the meetings have been drafted and coordinated with DG MOVE. Final minutes and presentations have been sent to the Forum members.

### **6.2 Working Group Meetings of the Corridor Forum**

This section describes the working group meetings which were held in Phase 3 of the RALP CNC study:

The second meeting of the Working Group on Regions and Urban nodes and Airports took place on the 1<sup>st</sup> April 2019 in Milano organised together with the Mediterranean Corridor. The agenda and the official invitation letter have been sent out mid of March 2019 to the representatives of Member States, urban nodes and regions.

About 80 stakeholders participated in Milano. The minutes of meetings were drafted by the contractor and have been sent to the stakeholders together with the list of participants. All presentations have been provided prior to the meeting.

The third Working Group on Inland Waterways and Ports was organised in close cooperation with CCNR. This meeting has been carried out as a workshop focussing on inland waterway transport and multimodality and was executed on 27<sup>th</sup> September 2019 in Basel (Switzerland). Together with CCNR, an agenda has been elaborated including a list of potential stakeholders to be invited. After the meeting, minutes have been drafted and coordinated with DG MOVE. Final minutes and presentations were sent to the participants.

## 7 Project and quality management

### 7.1 Overview on PM/QM efforts

Project management and coordination activities are a continuous activity in order to fulfil the subtasks of each work package. Reference is made to the QM criteria set out in the technical offer. Main efforts in this field are:

- Regular communication of team leader and senior experts with the Policy Advisor at DG MOVE by phone and email and through management meetings;
- Permanent knowledge and information exchanges within the CNC study team by means of phone conferences and emails;
- Regular checks of quality, timeliness and language quality of analyses and deliverables;
- Active participation in cross-Corridor working groups resp. follow-up and discussion of intermediate results achieved;
- Integration of Senior Experts for internal supervision of quality and efficiency.

Besides the present Intermediate Report, further main results of this activity are:

- The Inception Report (provided end-July 2018).
- The regular Monthly Progress Report issued by the CNC study team leader for the interest of and discussion with the Corridor Advisor.
- Participation and follow-up of the Management Meetings and connected bilateral meetings between study team leader and the Corridor Advisor.

### 7.2 Management Meetings

Management meetings of the 2018-2022 Core Network Corridor Studies (CNC) are scheduled by DG MOVE and are jointly prepared by the Contractors responsible for the nine CNCs and the DG MOVE and are held as one-day meetings in Brussels.

The pre-noon meetings are attended by the technical Advisors of the European Coordinators of the CNCs, MoS and ERTMS, other representatives from the Units B1 and A3 of DG MOVE, as well as the team leaders and representatives of the consortia involved in the delivery of the nine Core Network Corridor Studies plus other relevant participants, e.g. the MoS study team. The Consultants are also in charge to record the minutes of the meetings. Afterwards, a bilateral afternoon meeting between team leader and Corridor Advisor is held, in order to clarify on-going issues regarding the CNC exclusively.

- The Kick-off meeting has been held in Brussels at the premises DG MOVE on 15<sup>th</sup> June 2018. Minutes have been sent by HaCon on 28<sup>th</sup> June 2018.
- The 2nd Management meeting with the Consortia's team leaders was held on the 24<sup>th</sup> October in Brussels in order to agree on the MTMS methodology (Task 1.1), Update of Project list (Task 2), TENtec update issues, etc. (Task 3), dates of next meetings, new coordinators/advisors etc. The Minutes of meeting was provided by 1<sup>st</sup> November by Panteia and approved on the 27<sup>th</sup> November by Silke Brocks.
- The 3rd Management Meeting, also involving the contractor responsible for the MoS study, was held in Brussels on 21<sup>st</sup> May 2019 in order to agree on MTMS intermediate results (Task 1.1), the efforts for Task 2+3, TENtec update issues, as well as CEF/TEN-T policy etc.

- The 4<sup>th</sup> Management Meeting was held in Brussels on 10<sup>th</sup> October 2019 in order to inform the corridor consultants about the state of play of ERTMS deployment along the CNCs, the current status of Motorways of the Sea study and its link with the CNC studies. Additionally, the procedure for the drafting of the Fourth Work Plan and the upcoming meetings have been discussed.
- The 5<sup>th</sup> Meeting was scheduled for May 2020 and planned to be held in Brussels. Due to the COVID-19 crisis, it was postponed to the end of June 2020. It is planned to hold this meeting as a web conference.

## 8 Summary and next steps

The two years of the 3<sup>rd</sup> phase of the Studies on the TEN-T Core Network Corridors and the support of the Coordinators have shown a professional conduct regarding the analysis and reporting on behalf of the Consultants, laying at the same time a solid basis for a good cooperation between the Corridor Forum and the Work of the Coordinator. All agreed tasks were performed by the Corridor consultants, and all outputs were delivered in a timely manner as well as in the foreseen quality.

Consultants will continue the work on the Corridor Study during the next two years with the main focus being a continuous update of the project list, identification of new projects, re-assessment of Corridor compliance with TEN-T requirements, new Multi-annual Financial Framework 2021–2027 impact on the Corridor development, updated regulatory framework and other relevant issues.