# “Development of the Trans-European Networks or how to invest 200 billion Euro”

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## Samenvatting

*' Aanpassing TransEuropees Netwerk of hoe investeer je 200 miljard Euro? '*

Het doel van het TEN-STAC project is het opleveren van de volgende vier uitkomsten:
1) vervoersprognoses voor 2020, waaronder verkeerstoedeling, schatting van internationale vervoersbelasting op het netwerk en sociaal-economische effecten en milieubelasting volgens de verschillende scenario's;
2)een overzicht van nationale plannen voor transportinfrastructuur en macro-economische analyse om potentiële publieke financiering van transportinfrastructuur in te schatten tot 2020;
3)gedetailleerde analyse van 25 internationale corridors bestaande uit een weergave van bottlenecks en milieurisico's en richtlijnen voor het selecteren van projecten met een groot Europees belang binnen corridors;
4)uitgebreide financiële analyse voor een selectie van de belangrijkste projecten.
Het gebied dat bestudeerd wordt, bestaat uit de huidige Europese lidstaten, Zwitserland en Noorwegen, de 12 kandidaatlanden en transportstromen van en naar de rest van de wereld.

### Infrastructuur aannames

De vervoersprognoses worden sterk beïnvloed door de beleidsmaatregelen waar in de drie scenario's vanuit wordt gegaan. Een cruciaal punt hierbij is de toekomstige lidstaten in de Economische Unie, wat tot een meer open economie leidt. Dit gaat gepaard met een toename van de vervoerafstanden. Ook de modal-split ontwikkeling wijkt hier af: het aandeel van het spoor zakt hier.

## Summary

*"Development of the Trans-European Networks or how to invest 200 billion Euro"*

The TEN-STAC project objectives are to address the following four tasks:
1) traffic forecasts for 2020, including traffic assignment, estimate of international traffic load on the network and socio-economic and environmental impacts according to the various scenarios;
2) a review of national transport infrastructure plans and macro-economic analysis to estimate potential public financing in transport infrastructure until 2020;
3) detailed analyses of 25 international corridors comprising screening of bottlenecks and environmental risks and guidelines for selecting projects of great European interest within corridors;
4) extensive financial analyses for a selection of the most important projects.
The study area includes the present EU member states, Switzerland and Norway, the 12 candidate countries and transport flows to and from the rest of the world.

### Infrastructure assumptions

The transport forecasts are strongly influenced by the policy measures assumed in the three forecast scenarios. A crucial point in this connection is the future states in the Economic Union. At the same time, transport distances will also increase.
The modal split also shows a different development here, with the share of rail transport actually declining.

# 1 Introduction

### Towards new Guidelines and a declaration of European Interest

New conditions, such as the identification of network elements[1] of accession countries affected in the course of enlargement negotiations, led the Commission in October 2001 to propose an intermediate revision of the Guidelines, altering slightly the outline of the maps and the priority projects. In addition, slow progress[2] in implementing the Guidelines, and the need to reflect the new policy objectives set out in the White Paper[3] published in September 2001, such as the removal of bottlenecks and the promotion of the modal rebalancing, led the Commission to envisage proposing in 2003/2004 a major redefinition of the Guidelines with a new time horizon of 2020.

In order to inform the preparation process and, subsequently, the political discussions in the European Parliament and the Council of ministers, the Commission has launched the TEN-STAC study to update EU-wide transport scenarios, traffic forecasts and analyses of a number of international corridors and major projects, in the current and future Member States.

# 2 The TEN-STAC study: objectives

The objective of the TEN-STAC study was to produce updated transport scenarios, European traffic forecasts and detailed analyses of corridors of the trans-European network, including the accession countries. This work is based on the Commission's proposal made on 1 October 2003 (see COM(2003) 564 final).

The consortium has addressed the tasks in two phases, as requested. In the first phase the base year 2000 has been consolidated from modelling and data point of view. Three scenarios have been designed in such a way that they catch the effect of infrastructure policy on the development of the transport systems, traffic flows and related impacts for year 2020. Additional to the tasks mentioned, national plans have been reviewed in phase 1. In the second phase, the priority projects have been analysed in detail in order to derive indicators that describe the performances and impacts of the priority projects, which each consist of multiple sub-sections. The detailed analysis of the impacts takes place on this level.

Besides the challenge of addressing 27 European countries at a similar level of detail and applying policy tools to address both endogenous and exogenous developments of the transport systems in a consistent way, one of the most difficult tasks was to design the whole process in such a way that the effects of implementing different packages of infrastructure projects and related policy measures can be determined with the maximum level of confidence, which will differentiate the scenarios. The common base for the whole process consists of the new concepts emphasised by the White Paper 'European transport policy to 2010: Time to decide' (COM(2001)0370).

[1] To be added to the TEN-T after enlargement in 2004.
[2] Only around 20% of the total projects have been completed, with delays mainly on cross-border and rail projects.
[3] European Transport Policy for 2010: time to decide. http://europa.eu.int/comm/dgs/energy_transport/index_fr.html.

# 3 The TEN-STAC study: the process

The tasks to be addressed in the TEN-STAC study are not easy ones. Both the technical issues and the interpretation of the policy objectives and measures for a proper translation into quantitative and qualitative elements to be considered in the process have been challenging fro the project. The TEN-STAC project applies the European standards to both EU25 and accession countries Transport Networks.

The TEN-STAC project comprises two phases with the following tasks:

**Phase I** (January 2003 – July 2003)

Task 1: Traffic forecasts in 2020, including traffic assignment, estimate of international traffic load on the network and socio-economic and environmental impacts according to different scenarios.The traffic forecasts in 2020 consider several infrastructure and policy scenarios. The forecasts cover road, rail, sea, inland waterway and air transport as well as interconnection points (airports, ports, inter-modal terminals).

The work carried out includes:

1. Estimates of the current share of international traffic on the main routes (including at least the TEN routes) and of the origin-destination matrices between NUTS II (or NUTS III) regions

2. Development of the GIS based network models that integrate the infrastructure projects completed by 2001 and make reasonable assumptions on the infrastructure developments in the coming years.

3. Forecasts of the demand and assignment of the freight and passengers traffic on the TEN EU+CEEC12 network by 2020 taking into account links outside the enlarged EU, e.g. connections to Russia, Belarus, Ukraine and Turkey. Three scenarios including the Business As Usual scenario have been produced. The impact on social and economic cohesion and the impact on the environment (emissions of green house gases and regulated air pollutants, energy and land take) have been assessed. The results distinguish international and domestic traffic, freight and passengers, transport modes, and are expressed in tons, passengers and vehicles, and are illustrated by maps in GIS.

4. Sensitivity analyses on price, GDP and infrastructure policy have been carried out.

5. The study has proposed a generic definition of multi-modal international corridors. The definition is build on the experience from the Pan-European Corridors and Areas (the Helsinki Pan-European Conference), includes the concept of sea motorways and dedicated rail freight corridors, and focuses on origin-destinations with high loads of international traffic (taking into account potential European and intercontinental traffic). Based on the definition, a list of corridors has been proposed to illustrate the consequences of the proposed definition and GIS maps prepared to illustrate the relevant related corridors.

Task 2: Review of national transport infrastructure plans, and macroeconomic analysis to estimate potential public financing in transport infrastructure until 2020.

The aim of Task 2 is to summarise for each EU and new candidate country the overall transport infrastructure needs as assessed by Member States and their financing capacities. The task will cover regional, national and European transport infrastructure.

Phase I has been completed and both interim and final reports are available at: http://www.nea.nl/ten-stac. Phase II has also been completed and reports will be soon available at the same address.

**Phase II** (July 2003 - March 2004)

Task 3: Detailed analysis of 25 international corridors comprising screening of bottlenecks and environmental risks.

The aim of Task 3 is to draw up an inventory of the projects and analyse the traffic, the bottlenecks and the environmental and socio-economic impact on 25 multi-modal international corridors at a detailed level on each corridor. The selection of corridors has been done by the Commission by using the results of Task 1 and after discussions in the High Level Group and the TEN-T Committee.

Task 4: Financial plans for selected major projects.

The aim of Task 4 is to inform the Commission on the financial aspects of a set of 25-30 major infrastructure projects considered by the Commission to be included in the Annex III of the Guidelines. The tasks for each project include: a broad estimate of the costs, its economic viability and proposals for long-term financial plans by distinguishing Community, national and private financing. Any investigations deemed necessary to the better understanding of the characteristics of the project will be performed.

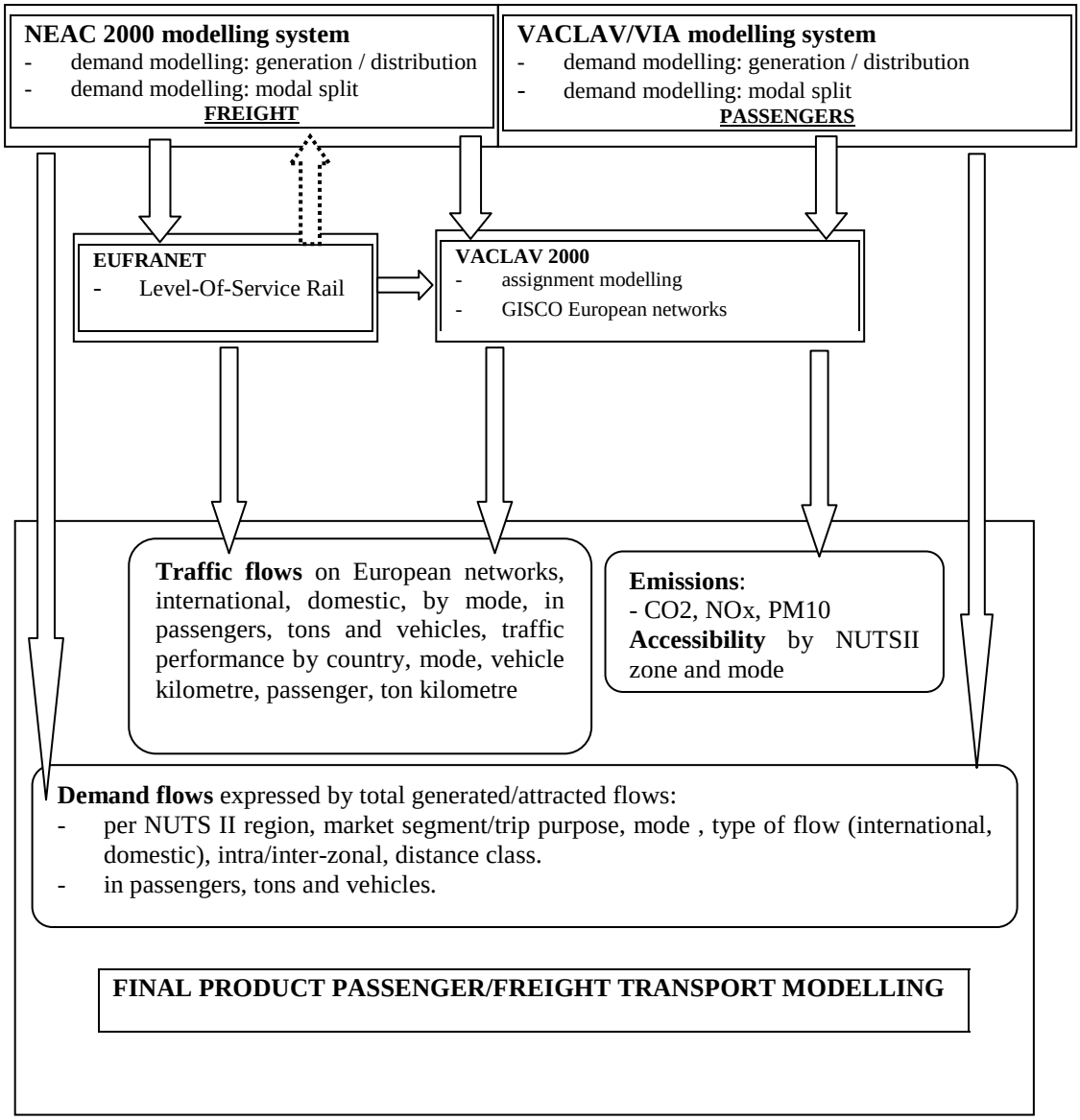
### A challenge for the European modelling systems

The base of the modelling consists of a Common Modelling Platform built up to join together strategic European transport modelling tools:

- **NEAC** model system (European trade and transport demand modelling: trip generation and distribution, modal split, assignment rail, inland waterways, sea)
- **VACLAV** model system (demand modelling passenger and assignment freight and passenger road, rail)
- **EUFRANET** for rail transport assignment parameters and intermodality approach for freight.

The common modelling platform considered for the modelling process is defined as shown in the figure hereunder.

***Common Modelling Platform***




The main reasons for the choice for this modelling platform are the following:

- **NEAC** is a complete modelling system and has proven good results in all demand modelling aspects for freight.
- **NEAC** geographical scope covers EU15, Norway, Switzerland and Candidate countries at NUTS 2 and/or country level in the following way:
    - ***NUTS2 region*** *EU25 plus CH and Norway to* ***country*** *CEE, Rest Europe and* ***group of countries*** *Rest of the World,*
    - ***NUTS2 region*** *CEEC to* ***country*** *CEE, Rest Europe and* ***group of countries*** *Rest of the World,*
- **NEAC** was considered to up-date the SCENES/EXPEDITE flows with respect to intercontinental and CEEC relations.
- **NEAC/VACLAV** integration to derive strategic traffic flows at European level are tested and have been proved successful in the **'2020 Forecasting**' project and in the **'Traffic forecast**

**on the Ten Pan-European Transport Corridors of Helsinki' (1999), commissioned by the Commission**, for all transport modes and transport organisations.

- **EUFRANET** is the most recent and relevant simulation tool for European rail freight transport operation.

## 4 Main results forecasts 2020

Three scenarios are defined for the horizon year 2020: TREND+ – EUROPEAN – EUROPEAN+. All scenarios incorporate the same common socio-economic assumptions[4], meaning a "normal" economic development in all countries is considered. In the TREND+ scenario, basic policy actions are used to ensure the realisation of the White Paper aimed at the continuing liberalisation and harmonisation of EU transport for 2020. The infrastructure projects globally included in the TREND+ scenario[5] mainly constist of the projects to be finalised in the year 2007.

The EUROPEAN scenario includes a number of assumptions in addition to those in the TREND+ scenario. In this scenario, White Paper measures are not only applied globally, but also specifically on the trans-European Network and on specific infrastructure projects. The focus in the EUROPEAN scenario is on the accompanying measures dedicated to the selected infrastructure projects in order to support the intermodal transport. This scenario globally includes the infrastructure projects[6] that will be finalised in the year 2013.

The EUROPEAN+ scenario includes all the assumptions of the EUROPEAN scenario. In addition, the accompanying measures have been intensified and all infrastructure projects[7] are included that are planned to be finalised in the year 2020.

*Percentage growth in traffic performance EU-27, 2000-2020 (pass km/ton km)*

| | TREND+ | EUROPEAN | EUROPEAN+ |
|---|---|---|---|
| **Total growth passenger** | 31% | 32% | 34% |
| **Growth passenger int'l** | 53% | 54% | 55% |
| **Total growth freight** | 75% | 75% | 79% |
| **Growth freight int'l** | 91% | 91% | 98% |

The transport forecasts generated within TEN-STAC reveal considerable growth rates of transport performance in the EU27 countries. The total transport performance, both for freight and for passenger, is expected to increase slightly along the forecast scenarios TREND+ – EUROPEAN – EUROPEAN+, with a disproportionately strong increase in the market segment of international traffic, particularly international rail transport. The growth of traffic demand along the three forecast scenarios goes along with the assumption of an increasing dimension of infrastructure investments along these scenarios. The effect of demand growth along the three forecast scenarios is mainly caused by two effects: Firstly, the number of long-distance passenger trips tends to increase slightly along the forecast scenarios TREND+ – EUROPEAN – EUROPEAN+. Secondly, routings for some O/D

[4] See European Energy and Transport Trends 2030
[5] See Deliverable 3, Description of the base year 2000 and forecasts 2020, page 107-110
[6] See Deliverable 3, Description of the base year 2000 and forecasts 2020, page 120-123
[7] See Deliverable 3, Description of the base year 2000 and forecasts 2020, page 130-133

relations change and are shifted to the new or upgraded infrastructure sections, representing a longer distance, which finally results in a higher transport performance.

An example of the rail freight traffic flows of the total interregional flows for EUROPEAN scenario 2020 is shown in the figure hereunder.

***Rail freight total interregional, EUROPEAN scenario 2020***


The *environmental* assessment reveals a differentiated evolution by the type of emission considered. Since by far the largest share of transport $CO_2$ emissions is generated by the road mode, the changes in total emission – covering road, rail and air – is largely influenced by the performance of road.

Change in emissions road transport (passenger and freight) 2020 vs base year 2000 (EU15+2 and CEEC12)

| | TREND+ | EUROPEAN | EUROPEAN+ |
|---|---|---|---|
| **$CO_2$** | 38% | 16% | 16% |
| **NOx** | -39% | -52% | -52% |
| **Particulates** | -48% | -49% | -49% |

Due to assumed improvements in engine technologies and a more widespread use of soot filters, the road transport sector's emission volumes of $NO_X$ and particulates are forecasted to decrease. A strong growth is expected for air transport, together with a highly-developed engine technology, which does not allow the assumption of significant improvements of emission factors in the future. Therefore, the emissions of $NO_X$ and particulates by the air mode are forecasted to increase substantially.

## 5 Detailed analysis of the 29 priority projects: traffic forecasts and impact indicators

In the TEN-STAC project a uniform and consistent framework has been developed to compare and assess the expected future impacts of various proposed transport infrastructure projects in Europe. The year chosen for the assessment and comparison is the year 2020.

The infrastructure projects considered within TEN-STAC include the list of priority projects (see COM(2003) 564). When speaking of "project appraisal" and "impacts of projects" one generally refers to answers to the following questions:

- ⇒ What will be the changes in the size, composition, modal split and spatial distribution (routing) of future transport flows as a consequence of the realisation of the infrastructure project(s)?
- ⇒ What are the changes in the use of transport infrastructure networks as a consequence of the realisation of the infrastructure project(s)?
- ⇒ What are the benefits for the economy and society of the changes in transport flows and network use of the realisation of the infrastructure project(s)?
- ⇒ What is the dimension of these benefits for the society compared to the costs for the realisation of these projects?

The priority projects/sub-sections to be analysed in TEN-STAC are those to be finalized after 2007, illustrated in the figure hereunder.

***Sub-sections to be finalised after 2007 (included in the 'all projects scenario')***


A part of the work in the TEN-STAC project consists in working out the questions above in more detail and proposing an indicator set that is capable of answering such questions. These indicators are applied to all of the projects to be assessed, in a way that the measurements of indicators are comparable across projects.

An appraisal of the relative merits of different infrastructure projects from a European perspective being applied within TEN-STAC, can not be done by collecting all individual (national) cost-benefit assessment studies, taking from these studies the projected performance and starting the comparison. Even if such studies reported the same type of indicators and used similar time horizons,

this would be a misleading procedure, because the studies are usually based on a number of (economic, political, technological) assumptions. These assumptions may differ significantly across the studies.

A first step in the analysis of projects is the grouping of sub-sections in priority projects. This concept intends to capture the first and most obvious linkages between individual priority project sub-sections. So a priority project in TEN-STAC is a set of strongly interrelated infrastructure project sub-sections on a part of a (modal) infrastructure network.
E.g. various sub-sections on railway line (line upgrading, tunnels etcetera) or a river (locks, bridges, dredging works etcetera).

In order to measure the *net* impacts of priority projects, it is necessary to filter out all changes in transport flows which can be expected to occur in the future (in 2020) but which are not directly causally connected to a specific priority project. This filtering out of "noise" has been attempted in various ways:

- By defining a uniform economic and political environment for the year 2020 in which all project and the societal and economic effect of those projects will be examined (only the additional or incremental impacts of the priority projects will be investigated);
- By including in the scenarios for 2020 the effects of other (White Paper) policies and the effects of already decided up priority projects (avoiding "double counting" and attributing other policy impacts to priority projects);
- By looking at the impact of the combined sub-sections in a priority project, as well as the individual sub-sections.
- By looking at the marginal impacts of sub-sections and at the impact of the priority project in a) the situation where all other priority projects are implemented and b) when none of the other priority projects are implemented.

For describing the methodologies applied for the generation of performance data for quantitative impact variables, the impact criteria can be subdivided into four groups:

- Impact criteria based on transport impedance matrices (e.g. potential changes in travel times, centrality)
- Impact criteria based on transport flows on the corridor (e.g. share of international traffic)
- Impact criteria based on transport flows in the whole transport sys1tem (e.g. modal split, environmental indicators)
- Impact criteria independent from modelling results (e.g. appraisal of project planning status)

The estimation of performance data for *impact criteria based on transport impedance matrices* does not require the application of the transport models, as no transport demand reaction is considered. The impedances are derived from the infrastructure measures implemented in the network models.

For the assessment of a priority project's impact on criteria based on transport impedances following two situations are compared: the situation in which all sub-sections in all priority projects are realised besides the sub-section under evaluation, and the situation in which the sub-section under evaluation is realised, together with all other sub-sections belonging to the priority project.

*Impact criteria based on transport flows on the project*, e.g. the total transport volume or the share of international transport demand, can be retrieved directly from the assignment results. Impact criteria belonging to this type are raised for each corridor without a comparison to a reference case. The calculation of performance data for *impact criteria based on transport flows in the whole transport system* – thus covering all modes, like criteria related to modal split or environmental criteria, requires the analysis of all traffic flows of all modes. In a first step the assignment results are generated at the level of priority project.

Performance data for *impact criteria independent from modelling results*, like qualitative appraisal of a priority project's contribution for an intermodal transport system or appraisal of the project planning status, are generated by expert judgements. The expert judgements are largely based on further available information on the corridor from different sources, mainly from European or national level.

The impact variables applied for priority project assessment within TEN-STAC phase II is based on the Commission's proposal made on 1 October 2003 (see COM(2003) 564 final), Article 19. The relationship between the criteria mentioned in this proposal and the impact variables defined in TEN-STAC is illustrated in the table hereunder.

**TEN-STAC group of indicators**

| Criterion as specified in COM 2003/564, Art.19 | Corresponding group of STAC indicators |
|---|---|
| (a) (priority projects) aim to eliminate a bottleneck or complete a missing link on a major route of the trans-European network, in particular projects which cross natural barriers; | **ECONOMIC IMPACTS IN THE TRANSPORT SECTOR** |
| (b) (priority projects) are on such a scale that long-term planning at European level brings high added value; | **CREATION OF EUROPEAN VALUE ADDED**<br><br>**GENERAL TRANSPORT RELEVANCE** |
| (c) (priority projects) provide significant added value in facilitating the mobility of goods and people between Member States, including contributing to the interoperability of national networks; | |
| (d1) (priority projects) demonstrate, in terms of the overall project, potential socio-economic profitability and other socio-economic advantages | **FINANCIAL AND ECONOMIC FEASIBILITY**<br><br>**CREATION OF EUROPEAN VALUE ADDED** |
| (d2) (priority projects) demonstrate, a commitment on the part of the Member States concerned to carrying out the studies and evaluation procedures in time to complete the work in accordance with a date agreed in advance; | **MATURITY AND COHERENCE OF THE PROJECT** |
| (e) (priority projects)contribute to the territorial cohesion of the European Union by integrating the networks of the new Member States and improving connections with the peripheral regions; | **ENVIRONMENTAL SUSTAINABILITY**<br><br>**IMPROVEMENT OF ACCESSIBILITY** |
| (f) (priority projects) contribute to sustainable development of transport by improving safety and reducing environmental damage caused by transport, in particular by promoting a modal shift towards railways, intermodal transport, inland waterways and maritime transport. | **ENVIRONMENTAL SUSTAINABILITY**<br><br>**MATURITY AND COHERENCE OF THE PROJECT** |

The list of indicators estimated for each priority project and sub-section is given hereunder.

*TEN STAC Phase II indicators; Cost-benefit analyses*

| Objective | Indicator | Ind.# | Unit of measure |
|---|---|---|---|
| ECONOMIC IMPACTS IN THE TRANSPORT SECTOR | | | |
| IMPROVEMENT OF ROAD LEVEL SERVICE | Changes in time costs caused by road congestion | 1 | Mln. € / year |
| REDUCTION OF TRAVEL TIME | Changes in monetary value of the reduction of passenger travel time | 2a | Mln. € / year |
| | | 2b | passenger * hour / year |
| | Changes in monetary value of the reduction of freight travel time | 3 | Mln. € / year |
| ENVIRONMENTAL SUSTAINABILITY | | | |
| GLOBAL WARMING | Change (in monetary value) of the transport contribution to global warming | 4a | 1000 € / year |
| | | 4b | Mln. kg CO2 / year |
| ATMOSPHERIC POLLUTION | Change (in monetary value) of the NOX transport emission | 5a | 1000 € / year |
| | | 5b | Mln. kg NOx / year |
| | Change (in monetary value) of particulates' emissions of transport | 6a | 1000 € / year |
| | | 6b | Mln. kg particulates / year |
| TRANSPORT SAFETY | Variation on monetary value of accidents | 7 | Mln. € / year |
| FINANCIAL AND ECONOMIC FEASIBILITY | | | |
| INVESTMENT COST | Total project costs | 8 | Mln. € |
| ECONOMIC FEASIBILITY | Ratio 2020 monetary benefits / project total cost | 9 | % |

*TEN STAC Phase II indicators; Non-monetised impacts*

| Objective | Indicator | Ind.# | Unit of measure |
|---|---|---|---|
| GENERAL TRANSPORT RELEVANCE | | | |
| TOTAL TRAFFIC VOLUME ON THE PROJECT | Total passenger traffic on the project section | 10 | Mln. passengers / year |
| | Total freight traffic on the project section | 11a | Mln. tons / year |
| | | 11b | Mln. tons / year |
| | | 11c | Bln. ton km /year |
| INTERMODALITY | Quantitative appraisal of the project's contribution for an intermodal transport system | 12 | Mln. tons |
| CREATION OF EUROPEAN VALUE ADDED | | | |
| DEVELOPMENT OF INTERNATIONAL PASSENGER TRAFFIC | Share of international passenger traffic on total traffic on the project | 13 | % |
| | Volume of international passenger traffic on the project | 14 | Mln. passengers / year |
| DEVELOPMENT OF INTERNATIONAL FREIGHT TRAFFIC | Share of international freight traffic on total traffic on the project | 15 | % |
| | Volume of international freight traffic on the project | 16 | Mln. tons / year |
| INTEROPERABILITY | Reduction of passengers waiting time at borders for international traffic | 17 | - |
| | Reduction of freight waiting time at borders for international traffic | 18 | - |
| | Length of networks becoming interoperable because of the project | 19 | - |
| IMPROVEMENT OF ACCESSIBILITY | | | |
| PASSENGER ACCESSIBILITY | Variation of the STAC centrality index for passenger transport | 20 | % |
| FREIGHT ACCESSIBILITY | Variation of the STAC centrality index for freight transport | 21 | % |
| PERIPHERAL ACCESSIBILITY | Variation of the STAC centrality index for passenger transport in regions identified as peripheral | 22 | % |
| | Variation of the STAC centrality index for freight transport in regions identified as peripheral | 23 | % |
| ENVIRONMENTAL SUSTAINABILITY | | | |
| MODAL REBALANCING | Volume of road freight traffic shifted to rail, IWW or sea transport | 24 | Mln. t·km / year |
| | Volume of road and air passenger traffic shifted to rail | 25 | Mln. passenger·km / year |
| LEVEL OF CONCERN: TRAFFIC TRANSFER | Transfer of traffic from infrastructure lying in sensitive zones to the projected infrastructure | 26 | % of road traffic transferred from sensitive areas |
| LEVEL OF CONCERN: DISTANCE | Percentage of the length of the project lying in a sensitive area | 27 | % length |
| LEVEL OF CONCERN: EMISSIONS | Changes of inhabitants' level of concern caused by emissions of NOx and particulates | 28a | % NOx |
| | | 28b | % Particulates |
| LEVEL OF CONCERN: PROXIMITY | Synthetic appreciation of the proximity of the project from specially protected areas (SPAs) or densely populated areas | 29a | Proximity of the project from SPA (km) |
| | | 29b | Number of inhabitants living in the zone traversed by the project |
| MATURITY AND COHERENCE OF THE PROJECT | | | |
| DEVELOPMENT OF THE PROJECT | Appraisal of the project planning status | 30 | - |
| INSTITUTIONAL SOUNDNESS | Qualitative appraisal of the project's compliance with national plans | 31 | - |
| COHERENCE OF THE PROJECT | Qualitative appraisal of the project's coherence with main international traffic corridors | 32 | - |

Final results of the Phase 2 of the TEN-STAC are available on the project web-site.

## References

http://www.etis-eu.org/

http://www.nea.nl/ten-stac/

http://www.nea.nl/neac/