Report
policies, projects & best practices

Deliverable 3.1

Policy and user response to public transport services

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EU STRATEGY FOR THE BALTIC SEA REGION FLAGSHIP
INTER CONNECT
Interreg South Baltic
EUROPEAN UNION
European Regional Development Fund

Report on Policies, Projects & Good Practices

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Name: Policy and user response to public transport services

Description: A study report on good practice in making the public transport attractive to policies and users in South Baltic (SB) area and other regions, based on review of relevant policy documents and practical results of past cooperation projects/initiatives on public transport

Activity 3.1

Name: Screening of policy and user response to public transport services

Description: Review local/regional/national/international policy documents in SB area and Europe; Analyse practical results of past projects in SB area and other Interreg programmes; Identify good practice available elsewhere in Europe (cooperation schemes, organisational models and specific services)

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List of Abbreviations and Acronyms

ADFC	Allgemeiner Deutscher Fahrrad-Club [German Cyclist's Association]
AP	Associated Partner
ATM	Air Traffic Management
BATco	Baltic Adriatic Transport Cooperation
BGLC	Bothnian Green Logistic Corridor
BRT	Bus Rapid Transit
BSR	Baltic Sea Region
BTH	Blekinge Tekniska Högskola [Blekinge Institute of Technology]
CBF	Centrum Balticum Foundation
CDU	Christlich Demokratische Union Deutschlands [Christian Democratic Union of Germany]
CNC	Core Network Connections
CoBiUM	Cargo bikes in urban mobility
CO2	Carbon dioxide
CSU	Christlich-Soziale Union [Christian Social Union]
DB	Deutsche Bahn [German railway company]
EBSR	Eastern Baltic Sea Region
EC	European Commission
ELMOS	Electric Mobility in smaller Cities
ERDF	European Regional Development Fund
ERTMS	European Rail Traffic Management System
EU	European Union
EUSBSR	European Union Strategy for the Baltic Sea Region
FFPT	Fare-Free Public Transport
FSSD	Framework for Strategic Sustainable Development
GDP	Gross Domestic Product
GHG	Green-House Gas
HA	Horizontal Action
HIE-RO	Hanseatic Institute for Entrepreneurship and Regional Development at the University of Rostock
ILVP M-V	Integrierter Landesverkehrsplan Mecklenburg - Vorpommern
ITS	Intelligent Transportation System
LCD	Liquid-crystal display
LED	Light-emitting diode
LNG	Liquefied natural gas
LP	Lead Partner
LRIT	Long-Range Identification and Tracking
MA	Metropolitan area

MPOFUA	Mobility Plan for Olsztyn Functional Urban Area
MTAP	Macroregional Transport Action Plan
MV	Mecklenburg-Vorpommern [Mecklenburg-Western Pomerania]
MWP	Mecklenburg-Western Pomerania
NGO	Non-Governmental Organization
NS	Nederlandse Spoorwegen [Dutch Railway Company]
OECD	Organisation for Economic Co-operation and Development
ÖPNVG M-V	Gesetz über den öffentlichen Personennahverkehr in Mecklenburg-Vorpommern [Law on public transport in Mecklenburg-Western Pomerania]
OV	Openbaar Vervoer [public transport]
PA	Policy Area
PP	Project Partner
PT	Public Transport
PUMA	Polish Union of Active Mobility
P&R	Park and ride
RIS	River Information Services
RSAG	Rostocker Straßenbahn Aktien Gesellschaft [Rostock Tram Public Company]
RV 27	Riksväg 27 [Swedish national road 27]
RVG	Rostocker Verkehrsgemeinschaft [Rostock Traffic Association]
SB	South-Baltic
SBB	Schweizerische Bundesbahnen [Swiss Federal Railways]
SEK	Swedish Krona
SESAR	Single European Sky ATM Research
SPD	Sozialdemokratische Partei Deutschlands [Social Democratic Party of Germany]
SSN	Safe Sea Net
STIM	Strategia Transportu i Mobilności Obszaru Metropolitalnego [Metropolitan Area's Transport and Mobility Strategy]
SUMP	Sustainable Urban Mobility Plan
TCP	Transnational Cooperation Point
TEN-T	Trans-European Transport Networks
TTÜ	Tallinna Tehnikaülikool [Tallinn University of Technology]
UITP	Union Internationale des Transports Publics [International Association of Public Transport]
VVW	Verkehrsverbund Warnow [Traffic Association Warnow]
WP	Work Package
ZeEUS	Zero Emission Urban Bus System

Summary

The European Union Strategy for the Baltic Sea Region (EUSBSR) flagship project INTERCONNECT addresses the challenge of curbing the car-reliant mobility trend in the South Baltic (SB) area through user-adjusted and more sustainable public transport services for regional and cross-border travels. The current public transport offer hardly meets customer expectations for easiness and attractiveness of regional and cross-border journeys, with scarce range of integrated ticket options for multimodal rides, difficult access to one-spot passenger information and no clear benefits for users when choosing the public transport over car.

To enhance car-independent mobility in the SB area the partnership consisting of 9 project partners and 10 associated partners from 6 countries will carry out joint capacity-building, pilot demonstration and advocacy actions. These will tackle three dimensions of public transport in serving regional and cross-border travels – the demand, the supply and the governance.

This report represents the first deliverable (3.1, "Policy and user response to public transport services") of Work Package 3 which is focused on a collection of evidence, knowledge and experience through the screening of policy and user response to public transport services by collecting and analysing policy documents (relevant for the project area), good practices and projects.

To ensure the regional relevance in gathering the data, the HIE-RO at the University of Rostock as the leading organisation of WP 3 has involved the project partners in the development of the report's structure and in presenting relevant policies on public transport to be taken into consideration in the next analytical steps. Apart from that, all institutions involved in the project contributed to the analysis and selection of the good practices to create a document tailor-made for the partners' area.

The chapter on transport policies then provides an overview on the most important legal and strategic frameworks that have been divided into two groups of policy documents. First, a focus is set on the EU policy level consisting of: The general policy on transport as it is described by the European Commission in the White Paper from 2011 and the EU Strategy for the Baltic Sea Region. Second, the most relevant regional or local policies relevant for the project's geographical area are presented. To ensure certain level of pertinence, the INTERCONNECT project partners contributed to the report by selecting the policy documents and their content taking into consideration the specific character of their region and defined expectations to the project results. Thus, the chosen content information reflects the specific perspective of the project partners, their point of view including national, regional and local/city-level policies on e.g. public transport itself or regional development with components relevant for the future of public transport.

The two chapters on projects and good practices aim at showing information on past or ongoing EU projects on public transport in the SB or other Interreg programme areas that have been selected jointly by the INTERCONNECT project partners. The EU-project part is rather focussed on the project work itself. More practical examples with a focus on results and lessons learned are described in the chapter "Good Practice Examples".

Both parts of the report, i.e. on policies and on good practices / projects are concluded with remarks referring to INTERCONNECT's main areas of intervention: Urban-Rural-Linkages, Cross-Border Public Transport, Ticketing and Renewable Energy.

1. Introduction

1.1 INTERCONNECT Project: Background

The European Union Strategy for the Baltic Sea Region (EUSBSR) flagship project INTERCONNECT addresses the challenge of curbing the car-reliant mobility trend in the South Baltic (SB) area through user-adjusted and more sustainable public transport services for regional and cross-border travels. The current public transport offer hardly meets customer expectations for easiness and attractiveness of regional and cross-border journeys, with scarce range of integrated ticket options for multimodal rides, difficult access to one-spot passenger information and no clear benefits for users when choosing the public transport over car.

The underperformance of public transport is particularly visible on ferry links where the steadily growing cross-border travels are done mostly with cars – largely due to the customised services and price packages for motorised passengers. Consequently, the market segment of foot passengers on ferries is too marginal.

Public transport authorities in many SB areas have insufficient knowledge on regional and cross-border mobility needs in their communities – both now and in the future - and lack expertise how to respond to them with sustainable solutions. The usual planning and management tools, market incentives and promotion campaigns in the regional communities to change travel behaviour tend to fail, as they often not correspond with no-car travellers' preferences.

Although many interesting public transport services/products in the SB were developed locally, the experience is very scattered and the good practice has never been effectively exchanged at the region-to-region level. To enhance car-independent mobility in the SB area the partnership consisting of 9 project partners and 10 associated partners from 6 countries will carry out joint capacity-building, pilot demonstration and advocacy actions. These will tackle the three dimensions of public transport in serving the regional and cross-border travels – the demand, the supply and the governance. The project will deliver innovative multi-stakeholder planning approaches for sustainable public transport of the future and invest in new and more efficient services for no-car travellers both in and between the partner areas through three thematic work packages (WPs) on:

- Evidence, knowledge and experience (WP 3),
- Steering tools and business models (WP 4) and
- Future governance and institutionalization (WP 5).

User-adjusted and more sustainable public transport services for regional and cross-border travels have a large potential to stimulate socio-economic growth in the SB area e.g. by contributing to more competitive labour markets and tourism. This potential is, however, untapped because of weak understanding of public transport impacts and lack of cross-sectoral dialogue.

Through involving a broad range of stakeholders in designing and testing the planning and management solutions that will be compatible in the cross-border context and replicable elsewhere, the project aims at increasing political and community attention for public transport role in serving mobility needs in the SB area.

Because of its flagship status, the INTERCONNECT project's objectives, activities and outputs contribute to the EUSBSR in the specific policy area / horizontal action of achieving efficient and sustainable public transport systems in the BSR as replicable solutions are offered by providing

better user access to multimodal travel information and trip planning/ticketing services as well as offering easy mobility services to regional and interregional communities. The project also provides indirect links to the policy area of Tourism and the horizontal actions of Climate (by tackling fossil fuel emissions) and Capacity (by e.g. strengthening the ability of public transport stakeholders to plan, manage and take policy decisions on sustainable services for regional and cross-border travels).

1.2 Purpose of the report

This report represents the first deliverable (3.1, "Policy and user response to public transport services") of WP 3 focused on the collection of evidence, knowledge and experience through the screening of policy and user response to public transport services by collecting and analysing policy documents (relevant for the project area), good practices and other projects.

This document is therefore designed as an input for further discussion within WP 4 and thus for supporting the development of practical solutions to be tested in the partners' regions. It presents good practices in making the public transport attractive for users in the SB area and other regions within the context of relevant policy documents and presents practical results of previous cooperation projects and initiatives on public transport.

The corresponding actions performed within activity 3.1, which is the "Screening of policy and user response to public transport services", consist of:

- Reviewing local, regional, national and international policy documents from the SB area and Europe
- Analysing practical results of past projects in the SB area and other EU programmes
- Identifying good practices existing in other European countries (focused on cooperation schemes, organisational models and specific services).

The aim of analysing the relevant policies is to generate outcomes that are both fulfilling the aims of INTERCONNECT and being in line with the existing policy framework in regions covered by the project, taking into consideration their unique character and therefore sometimes significant diversity. This creates an additional challenge to be faced by the project towards an overall goal of strengthening the cohesion process of the EU. The authors' intention is to show different kinds of good practices identified by the project partners and how these ideas may fit into the existing policy context in the areas covered by the INTERCONNECT project. Therefore, the report should serve as an input for further discussion in the partners' regions and thus, accelerate the process of the development of the solutions to be tested and/or implemented within the WP4 activities of the project

1.3 Methodology used for the preparation of the report

As the report addresses specific challenges for the project partners' regions, the principle of the collection of the data was to match specific needs defined by the INTERCONNECT partners for the project area and lessons learnt from the other projects and initiatives treated as benchmarks. To ensure the regional relevance in gathering the data, the HIE-RO as the leading organisation of WP 3 has involved other project partners in development of the report's structure and in presenting relevant policies on public transport to be taken into consideration in the next analytical steps. Apart from that, all institutions involved in the project contributed to the analysis and selection of

the good practices to create a document tailor-made for the partners' area. To keep the coherent and comparable structure of the report, two standardised templates (addresses both: policy and good practice aspects) have been developed and disseminated among project partners as a road-map for collection of the relevant information for the report. First template has been used for the description of policies on international, national and regional level, whereas the second template addressed good practices to be presented in comparable form. The final template versions are attached to this document. To ensure the common understanding of the 3.1 activity, its aim and the definition of terms, following formulation has been used as an overall request:

Activity 3.1: Policy review template

– *Please describe a relevant policy (from a local/regional/national/international policy document) on public transport affecting your geographical area. Please use one template per policy. A Policy document can be i.e. a legal document, a strategy, program, action plan, white papers, etc.*

Activity 3.1: Good practice & project description template

– Please use this template to either describe:

- *A good practice of regional or cross-border public transport in your geographical area*
- *A good practice of regional or cross-border public transport elsewhere in your country or Europe if it is relevant for the project, or*
- *A past project on public transport in the South Baltic or other Interreg program areas with a focus on practical results and lessons learned.*

What is a good practice?

– Within the context of INTERCONNECT a good practice (GP) is considered to be a technological or non-technological solution, process, method or policy of regional and/or cross-border public transport (PT) in the project partner's area or elsewhere in Europe that has been successfully implemented, tested and proven to:

– *Enhance attractiveness of PT for one or more of the following target groups of e.g.:*

- Users,
- Commercial operators (e.g. ferry lines),
- Employers,
- Public authorities in the partner areas

– *Be successful within the following context / area of intervention of e.g.:*

- Urban-rural linkages
- Cross-border solutions
- Ticketing
- Information system
- Renewable Energy

– *Be focussed on e.g. :*

- Cooperation schemes,
- Organisational models and
- Specific services

2. Policy framework

This chapter provides an overview on the most important legal and strategic frameworks that have been defined in policy documents. The first part provides a description of two transnational EU policies: The general policy on transport as presented in the White Paper on transport from 28th March 2011 (see 2.1.1) as well as the EU Strategy for the Baltic Sea Region (see 2.1.2).

The second part gives overviews on policies representing the geographical area of the project partners of INTERCONNECT who have selected the policies as well as the content being most important according to their point of view including national, regional and local/city-level policies on e.g. public transport itself or regional development with components relevant for the future of public transport.

2.1 EU policies

Transport was one of the first common policy areas of the European Economic Community and has its roots in the Treaty of Rome 1957 since competitive transport systems are vital for Europe's ability to compete in the world, for economic growth, job creation and for people's everyday quality of life. Transport connections represent a main pillar of the EU's economy by e.g. enabling supply chains and a European integration with an internal market. In 2014 the EU's transport industry employed around 10 million people, accounting for 4.5 % of total employment creating about the same percentage of gross domestic product (GDP) (EC 2014 b).

Also public transport can be seen as being in the focus of the European Commission, since, for example, public transport is described by the EC as (EC 2018):

"a good way to reduce congestion and environment and health-harming emissions in urban areas, especially when they [public transport vehicles] run on alternative, cleaner fuels. The European Commission strongly encourages the use of public transport as part of the mix of modes which each person living or working in a city can use".

Therefore, the policies on transport, created by the European Commission, also largely refer to the area of interest of INTERCONNECT which specifically is a Public Transport.

2.1.1 EU Policy on Transport: The White Paper on Transport (2011)

The White Paper on transport (EC 2011) "Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system" is currently one of the most important documents representing European policy on the future of transport with a time horizon until the year 2050.

This document is divided into three parts:

- Preparing The European Transport Area for the Future
- A vision for a competitive and sustainable transport system
- The Strategy – what needs to be done

The White Paper's first part outlines the current background of transport highlighting its importance

for society and economy as well as major challenges. In fact, "to complete the internal market for transport", as written in the document (EC 2011: 3), "a lot needs to be done" to overcome bottlenecks and barriers.

A main challenge is that transport is mostly dependent on oil covering 96% of its energy needs. This can cause, on the one hand, economical problems since it "will become scarcer in future decades, sourced increasingly from uncertain supplies" (EC 2011: 3). On the other hand, environmental concerns require significant action of reducing green-house gas (GHG) emissions in order to mitigate climate change and, at least, to keep the raise in temperature below 2° C. That means a GHG reduction of 60% or more has to be realised within the transport sector by 2050. Therefore, transport also needs to become more energy efficient and "new technologies for vehicles and traffic management will be key to lower transport emissions in the EU as in the rest of the world" (EC 2011: 4).

The White Paper (EC 2011: 4) depicts that "the race for sustainable mobility is a global one". New technologies and infrastructure investment programmes have therefore to be applied at sufficient pace to stay competitive – also in order to minimise negative environmental impacts and maximise economic growth. An appropriate infrastructure will also help to reduce congestion and increase accessibility.

Despite successful implementation of various measures since the White Paper from 2001, a lot needs to be done to terminate a continuation of the current "business as usual" (EC 2011: 4) to significantly improve the issues of oil dependence, congestion, accessibility, safety and pollution. The EC has therefore planned to build on lessons learned by looking "at developments in the transport sector, at its future challenges and at the policy initiatives that need to be considered" (EC 2011: 5).

The EC's vision for competitiveness and sustainability in the transport sector

The White Paper's second part outlines the vision on a competitive and sustainable transport sector. It is divided into 5 parts:

1. **"Growing Transport and supporting mobility while reaching the 60% emission reduction target" (EC 2011: 5)**

Since around 5% of the EU's GDP and 10 million direct employments are accounted to the transport system, policy action has to be planned carefully taking into account market based mechanisms and coherence across the EU member states. A vision is to end the transport sector's oil dependence by using energy more efficiently and from clean sources without restricting mobility. Applying information technology for traffic information and management will also help to make transport easier, more efficient and reliable.

Action has to be undertaken quickly since Infrastructure planning, building and equipment, e.g. with vehicles, takes a lot of time - today's decision shape the transport system in 2050. The EC describes that technological solutions are different per each of the three following segments:

- Urban transport
- Medium distance transport
- Long distances transport

In each of the segments, different actors will have different roles as written in the White Paper (EC 2011: 6):"The EU, Member States, regions, cities, but also industry, social partners and citizens will have their part to play".

2. "An efficient core network for multimodal intercity travel and transport" (EC 2011: 6)

For medium and long distance transport the EC sees a need to establish a core transport network where large numbers of passengers and large volumes of freight can be consolidated and transported over longer distances more resource efficiently across different modes of road, rail and waterborne transport. To make multimodal choices possible, infrastructure of each subsystem needs to be linked, platforms of information, booking and payment "should facilitate multimodal travel" (EC 2011: 6) and passenger rights across modes need to be ensured.

3. "A global level-playing field for long-distance travel and intercontinental freight" (EC 2011: 7)

The EC intends to establish "a global level-playing field for long-distance travel and intercontinental freight" (EC 2011: 7), since it particularly sees the maritime and aviation sector as being global. For instance, the EC wants to strengthen the EU's role as a global aviation hub and meet rising demand by optimising airport capacity and regulation as well as by using low-carbon fuels to minimise environmental impact. The maritime transport industry in the EU is to be supported by applying high standards of e.g. "safety, security, environmental protection and working conditions" (EC 2011: 8).

4. "Clean urban transport and commuting" (EC 2011: 8)

A quarter of CO_2 emissions from transport are caused by urban transport. With lower range requirements and higher population density, urban areas provide more favourable conditions for a transition to cleaner transport then other segments such as long distance transport. In terms of safety, 69 % of accidents happen in urban areas. Better land-use planning and demand management shall reduce traffic volumes while also walking and cycling are to be facilitated more.

For a better environmental performance road passenger vehicles are to be made more energy efficient by creating e.g. smaller and lighter vehicles using alternative propulsion systems. Urban transport can thereby help to form "a test bed for new technologies and opportunity for early market deployment" (EC 2011: 8).

5. "Ten Goals for a competitive and resource efficient transport system: benchmarks for achieving the 60% GHG emission reduction target" (EC 2011: 9).

The ten goals for transitioning the transport sector cover the three broader areas of sustainable transport, performance of multimodal logistic chains and the efficiency of transport and of infrastructure. The individual goals as cited from the White Paper (EC 2011: 9) are as follows:

> **Developing and deploying new and sustainable fuels and propulsion systems**
>
> *(1) Halve the use of 'conventionally-fuelled' cars in urban transport by 2030; phase them out in cities by 2050; achieve essentially CO2-free city logistics in major urban centres by 2030.*
>
> *(2) Low-carbon sustainable fuels in aviation to reach 40% by 2050; also by 2050 reduce EU CO2 emissions from maritime bunker fuels by 40% (if feasible 50%).*
>
> ***Optimising the performance of multimodal logistic chains, including by making greater use of more energy-efficient modes***
>
> *(3) 30% of road freight over 300 km should shift to other modes such as rail or waterborne*

transport by 2030, and more than 50% by 2050, facilitated by efficient and green freight corridors. To meet this goal will also require appropriate infrastructure to be developed.

(4) By 2050, complete a European high-speed rail network. Triple the length of the existing high-speed rail network by 2030 and maintain a dense railway network in all Member States. By 2050 the majority of medium-distance passenger transport should go by rail.

(5) A fully functional and EU-wide multimodal TEN-T 'core network' by 2030, with a high quality and capacity network by 2050 and a corresponding set of information services.

(6) By 2050, connect all core network airports to the rail network, preferably high-speed; ensure that all core seaports are sufficiently connected to the rail freight and, where possible, inland waterway system.

Increasing the efficiency of transport and of infrastructure use with information systems and market-based incentives

(7) Deployment of the modernised air traffic management infrastructure (SESAR[1]) in Europe by 2020 and completion of the European Common Aviation Area. Deployment of equivalent land and waterborne transport management systems (ERTMS[2], ITS[3], SSN[4] and LRIT[5], RIS[6]). Deployment of the European Global Navigation Satellite System (Galileo).

(8) By 2020, establish the framework for a European multimodal transport information, management and payment system.

(9) By 2050, move close to zero fatalities in road transport. In line with this goal, the EU aims at halving road casualties by 2020. Make sure that the EU is a world leader in safety and security of transport in all modes of transport.

(10) Move towards full application of "user pays" and "polluter pays" principles and private sector engagement to eliminate distortions, including harmful subsidies, generate revenues and ensure financing for future transport investments.

1 Single European Sky ATM (Air Traffic Management) Research
2 European Rail Traffic Management System
3 Intelligent Transportation System
4 Safe Sea Net
5 Long-Range Identification and Tracking
6 River Information Services

The Strategy – What needs to be done

The White Paper on Transport's third part outlines the strategy of what needs to be done in order to implement the vision. The strategy is composed of 4 parts:

1. A Single European Transport Area
2. Innovating for the future – technology and behaviour
3. Modern infrastructure, smart pricing and funding
4. The external dimension

A Single European Transport Area

First of all, a framework for users and operators of transport has to be established to ensure new technology deployment and infrastructure development. This includes the removal of obstacles that hinder the implementation of a genuine Single European Transport Area allowing competition across modes and countries by creating and enforcing common rules, standards and rights (EC 2011: 10). In fact, "a Single European Transport Area should ease the movements of citizens and freight, reduce costs and enhance the sustainability of European transport" (EC 2011: 10). The strategy of a common transport area includes e.g. the Single European Sky for aviation, the Single European Railway Area for rail traffic and the "Blue Belt" for maritime transport to reduce formal complexity for the travel of ships between EU ports. The opening of markets must be promoted accompanied by creating quality jobs, common working conditions, security standards incorporating improved technology. Besides the need for a further consolidation of passenger rights, the EC points out that "quality, accessibility and reliability of transport services will gain increasing importance in the coming years, inter alia due to the ageing of the population" (EC 2011: 12).

Innovating for the future – technology and behaviour

Second, to create a "modern, efficient and user-friendly system" (EC 2011: 12), another focus is set on research and innovation to apply most promising technologies, bring relevant actors together and support sustainable behaviour (EC 2011: 10). In fact, the transition from oil-based towards sustainable mobility requires different and innovative technologies and new mobility concepts including "new engines, materials and design; cleaner energy use through new fuels and propulsion systems; better use of network and safer and more secure operations through information and communication systems" (EC 2011: 12). Adequate research and innovation policy should therefore support development and deployment of key technologies including smart mobility systems. To encourage sustainable mobility, better planning through more available information is to be promoted. Also, "Smart inter-modal ticketing, with common EU standards that respect EU competition rules is vital" (EC 2011: 13). Another reference is made to planning in urban areas, since "Cities above a certain size should be encouraged to develop Urban Mobility Plans", that are "fully aligned with Integrated Urban Development Plans" (EC 2011: 13).

Modern infrastructure, smart pricing and funding

Infrastructural investments also need to be foreseen; an EU transport infrastructure policy with adequate resources and a common vision should be created (EC 2011: 10). In fact, a core network is needed that is composed of corridors across borders "carrying large and consolidated volumes of freight and passengers traffic with high efficiency and low emissions" (EC 2011: 13).

To modernise and integrate national patchworks of traffic infrastructure, the EU has indeed set up the Trans European Transport Networks (TEN-T)–project with the ambition to create a core

network by 2030 to help closing missing links across borders, reducing bottle necks and ensuring interoperability (EC 2014 b). While minimising environmental impact, the core network should also help to bridge the large infrastructural divergences between eastern and western EU parts. Helpful for the development will be the deployment of advanced technology including IT tools to simplify administration as well as refilling infrastructure for clean fuels (EC 2011: 14). Once established, the core network connections (CNC) "will be supported by a comprehensive network of routes that feed into it, regionally and nationally. Standards are set to ensure that trains, ships, planes, trucks and cars can use the infrastructure safely and without any technical problems" (EC 2014 b). In fact, the aim is, that "by 2050, the large majority of Europe's citizens and businesses will be no more than 30 minutes' travel time from this extensive network. Apart from smoother and quicker journeys, it will provide safer and less-congested travel" (EC 2014 b).

In reference to transport costs, it is noted in the White Paper on Transport from 2011 that they "should be reflected in its price in an undistorted way" (EC 2011: 10), i.e. the "'polluter-pays' and 'user-pays' principle" (EC 2011: 14) should be widely adopted by internalising externalities, eliminating tax distortions and unjustified subsidies and allowing free and undistorted competition. The reduction of green-house gas (GHG) emissions is being done via "two main market-based instruments": the taxation of energy and emission trading. Furthermore, "the cost of local externalities such as noise, air pollution and congestion could be internalised through charging for the use of infrastructure" (EC 2011: 14). The EC is therefore working on European guidelines for the internalisation of transport costs where each vehicle accounts for certain user charges that at least reflect the infrastructure's maintenance costs and the pollution of air and noise (EC 2011: 14).

The external dimension

Since transport has an international or even global dimension, also transport beyond EU borders is related to various challenges. For instance, as noted by the EC (2011: 15):

> "*Opening up third country markets in transport services, products and investments continues to have high priority. Transport is therefore included in all our trade negotiations (WTO, regional and bilateral). Flexible strategies will be adopted to ensure the EU's role as a standard setter in the transport field*".

The EC is therefore promoting its policies, rules and standards within international organisations to ensure wider transport market access with "free and undistorted competition and environmentally sustainable solutions" (EC 2011: 15).

2.1.2 The EU Strategy for the Baltic Sea Region (EUSBSR)

The Baltic Sea is an inland sea connected to the Atlantic Ocean via the North Sea spanning over 377,500 km² forming "the world's largest brackish-water body" (Björck 1995: 20) between Denmark in the South-West and Finland in the North East surrounded also by the other bordering countries of Sweden, Russia, Estonia, Latvia, Lithuania, Poland and Germany (EC 2009: 2). The BSR is named a macro-region by the EC since 8 of these 9 states are EU members (all but Russia) that share common challenges and opportunities. The EC has thus decided to implement a single strategic approach represented by a strategy specifically for the Baltic Sea Region (BSR) – the EUSBSR. As the EC stated, EU membership provides several new opportunities that have "not yet been taken and the challenges facing the region have not yet been adequately addressed" (EC 2009: 2).

In fact, the BSR is characterised by cultural, environmental and economic heterogeneity while the countries are shaped by interdependence and shared common resources. Because of that, the BSR is seen as being predestined to serve as a test-bed for "regional co-operation where new ideas and approaches can be tested and developed over time as best practice examples" (EC 2009: 2).

The European Parliament has therefore suggested a BSR strategy in 2006. Thereupon the European Council invited the European Commission to present a European Union strategy for the BSR by 2009 with three basic parameter while taking regional specificities into account (EC 2009: 2):

- The Integrated Maritime Policy should not be affected – the EUSBSR is rather a first step in implementing Integrated Maritime Policy
- Urgent environmental challenges need to be addressed
- The basis for external aspects of co-operation should be provided

In October 2009 the EUSBSR was published and it represented the first EU macro-regional strategy (EC 2017: 7). The key challenges addressed by the EUSBSR (EC 2009: 3) were:

- *To enable a sustainable environment*
- *To enhance the region's prosperity*
- *To increase accessibility and attractiveness*
- *To ensure safety and security in the region.*

Regarding the environment, reducing the intake of nutrients and other pollution as well as mitigating climate change belong to the most pressing issues. Economic challenges first and foremost address the disparities between the BSR regions not only in research and innovation but also regarding the obstacles for creating a single market area and huge differences in accessibility requiring large amounts of infrastructural investments (EC 2009: 3).
Besides challenges, implementing an EUSBSR can mean various opportunities, i.e. "potential that can be better used" (EC 2009: 3), such as "well educated workforce, expertise in innovation – especially in knowledge-based industries – a spacious and relatively unspoilt land environment rich in natural resources and a strong tradition of intra-regional cooperation".

To address the challenges and opportunity, the European Commission calls for an integrated framework, "that allows the European Union and Member States to identify needs and match them to the available resources through coordination of appropriate policies" (EC 2009: 4), where e.g. the sustainable development of the BSR is supported taking the interrelatedness of issues into account and where everyone can benefit from a common approach. Key elements of the EUSBSR are composed of existing EU policies, such as the cohesion policy or the Common Fisheries Policy

(CFP), which also provide funding to the BSR targeted at certain objectives.

It is also highlighted that specific actions are required by stakeholders in the region "including governments and agencies, municipalities, international and non-governmental organisations". The EC has thus designed a specific action plan, discussed with member states and stakeholders, "to encourage the implementation of visible projects" (EC 2009: 4) that contribute to achieve different objectives.

To implement the EUSBSR, the EC has defined certain principles, such as: not creating additional institutions, implementing concrete and visible actions for specific priority areas as well as involving the EC beyond monitoring (EC 2009: 10).

The challenges related to accessibility are strongly related to transport issues. In fact, the Baltic Sea with its surface water area provided sufficient room for sea trade and communication since it became an inhabited region, except during the cold-war period 1994-1990 when political borders often formed impassable obstacles. Since then huge investments have been made but disparities between differently developed countries and region remain an issue. While minimising environmental impacts, land and sea routes have thus to be further developed. Another key to better accessibility lies behind targeting remote areas: Particularly the Northern Scandinavian as well as the Baltic countries often lack sufficient accessibility rates and connectivity to other EU parts which in turn can result in timely and financially less efficient transport. The EC emphasises that sustainable modes of transport should be used to make improvements e.g. internal and external transport links (EC 2009: 8).

With regard to maritime traffic, particularly safety and security are pointed out in the EUSBSR. Maritime accidents, pollution and also cross-border crime are to be minimised (EC 2009: 9).

The EUSBSR's Action Plan

The EUSBSR implementation taking into account its objectives is realised by concrete "joint transnational actions, projects and processes" (CBF 2016 a). The projects and processes are named Flagships of the EUSBSR that may serve as demonstration examples and visible progress indicators for intended changes by the EUSBSR. Since no new institution has been founded, funding is supplied by existing sources (CBF 2016 b). As a part of the EUSBSR, an action plan was released in 2009 outlining concrete actions to implement the strategy. Both the EUSBSR and its Action Plan were updated, such as to incorporate the Europe 2020 Strategy, several times and lastly in 2017 (EC 2017). Since 2012, the EUSBSR has been based on three overall objectives (EC 2017: 7):

- Save the Sea
- Connect the Region
- Increase Prosperity

First, the Save the Sea objective addresses "clear water in the sea, rich and healthy wildlife, clean and safe shipping" and better cooperation. Second, Connecting the Region is referred to "good transport conditions, reliable energy market, connecting people in the region" and "better cooperation in fighting cross-border crime". And third, the Increase of Prosperity aims at promoting the BSR "as a frontrunner for deepening and fulfilling the single market", "contributing to the implementation of Europe 2020 Strategy", improving global competitiveness of the Baltic Sea region" and adapting to climate change (CBF 2016 a).

The current Action Plan therefore consists of 13 policy areas (PAs) and 4 horizontal actions (HAs), "which represent the main areas where the EUSBSR can contribute to improvements, either by tackling the main challenges or by seizing key opportunities of the region" (EC 2017: 8). Besides within the policy area (PA) Transport, issues regarding transportation may be important for other PAs as well since topics are often interdependent and thus overlapping.

The Policy Area Transport

The PA Transport aims at "Facilitating a sustainable and efficient transport system in the Baltic Sea Region" (EC 2017: 148) and it is coordinated by the member states Lithuania and Sweden. To ensure the competitiveness of the BSR, good transport connections are seen as a pre-condition. Challenges first of all arise from the BSR's geography: The large water basin in its centre, long distances, unequal population densities and settlement patterns as well as harsh winter climates can all represent a burden for creating efficient transport and high accessibility levels (EC 2017: 148). Besides Germany, the BSR is characterised by relatively small market regions (EC 2017: 106) and is also because of that "strongly dependent on foreign trade and international exchange of knowledge and services" (EC 2017: 148).

Particularly infrastructural challenges are prevailing. Different states of development and network densities as well as fragmented transport planning and decision-making procedures require e.g. a high degree of cooperation between member states as well as different investment measures. Transport volumes are also expected to significantly increase in the future. Congestion is thus seen as a major issue. Further challenges arise from transport externalities through pollution and noise as well as from demographics due to an aging population (EC 2017: 148).

Administrative challenges are associated to regulatory frameworks where constraints often hinder the unfolding of the full transport's multi-modal potential. Sustainable development may also require adjustments of decision-making processes; multi-level governance shaped by e.g. extensive cooperation, transparent communication and shared priorities may thus need to be applied.

To meet the common challenges, common actions are required. The joint TEN-T core network approach represents a major project of the vision to remove bottlenecks, improve accessibility and close missing links particularly regarding cross-border transport, multimodality and interoperability. Other visionary components of the PA Transport include "National and regional transport links [...], Ports, airports and intermodal terminals [...],Efficient local and regional public transportation [...], infrastructure for alternative fuels and electro-mobility solutions [...], Platforms for cooperation between public administration, research and business sector" and "Compatible and consistent transport planning and management processes between the governance levels and across the administrative borders" (EC 2017: 149-150).

To monitor improvements undertaken within the PA Transport, several indicators and targets have been defined that are summarised within three broader objectives as shown in Table 1 (EC 2017: 150-151):

Table 1: PA Transport Monitoring: Objectives, Indicators and Targets. Source: EC (2017: 150-151)

Objective	Indicator	Target (2019)
Capitalise on the TEN-T core network corridors for better connectivity, accessibility and cohesion	*No. of thematic events within PA Transport attended by European Coordinators*	*Once a year*
	No. of core network corridors in the Baltic Sea Region covered with networking projects for more sustainable growth, better accessibility and territorial cohesion	*3*
Improve transport cooperation with the third countries	*No. of thematic events within PA Transport attended by representatives of the third countries*	*Once a year*
	No. of joint projects initiated under the auspices of PA Transport with partners from the third countries	*2*
Encourage macro-regional transfer of sustainable solutions in passenger and freight transport	*No. of thematic events arranged within PA Transport on exchanging best practice between the EU Member States*	*Once a year*
	No. of joint projects on topics of shared interest initiated under the auspices of PA Transport	*4*

INTERCONNECT as a Flagship Project of the EUSBSR

Since December 2017 INTERCONNECT has become part of the EUSBSR implementation by becoming a Flagship-Project. INTERCONNECT therefore serves as a concrete example for change in the BSR's public transport system with high macro-regional impact, contributions to meeting the EUSBSR's objectives as well as relations to one or more actions of the corresponding PAs/HAs (INTERCONNECT 2017). In this case, the project is mainly connected to the PA Transport with indirect links to PA Tourism, HA Capacity and HA Climate.

2.2 National, regional and local policies

2.2.1 Sweden

Swedish National Infrastructure Plan

The proposal for a national plan for the transport system 2018-2029 includes measures that represent an important step towards a modern and sustainable transport system.

On August 31, 2017, the Swedish Transport Administration reported the draft national plan for the transport system for the period 2018-2029 to the government. The plan contains proposals for measures in the state infrastructure on roads, railways, sea and aviation.

Starting points for the Swedish Transport Administration's priorities

The starting points for the Swedish Transport Administration's priorities are the transport policy goals, the Riksdag's decision on the infrastructure proposal for Infrastructure for the future - innovative solutions for strengthening competitiveness and sustainable development, as well as the government's directives. The directive identifies six social challenges, in which the transport system plays a major role:

- Conversion to one of the world's first fossil-free welfare countries
- Investments in an increased housing construction
- Improving business conditions
- Reinforcement of employment across the country
- Utilize the effects of digitization and it's opportunities
- An inclusive society

The financial framework

The financial framework for the plan is 622.5 billion SEK, which is just over 100 billion SEK more than the current plan. In addition, there are 90 billion SEK from congestion tax, rail charges and co-financing.

The four step principle is applied

The Swedish Transport Administration has worked interchangeably and measures have been prioritized to contribute as far as possible to achieving the following transport policy objectives:

- Customers should be given great freedom to decide how they want to travel and how a transport is to be carried out
- Decisions on transport production should take place in decentralized forms
- Collaboration within and between different traffic modes should be promoted
- Competition between different road operators and transport options should be promoted
- The socio-economic costs of traffic should be a starting point when transport policy instruments are designed

The four step principle has been applied to ensure good resource management and to ensure that the measures contribute to sustainable social development:

1. The first step (Think about) is to consider first and foremost measures that may affect the needs of transport and travel as well as the choice of modes of transport, e.g.: taxes, fees, parking fees, subsidies, collaboration, non-free meetings, speed limits, coordinated distribution, information, marketing, travel plans and programs and so on

2. The second step (Optimize) involves implementing measures that result in more efficient utilization of the existing infrastructure, e.g.: redistribution of surfaces, bus lanes, signal priority, ITS solutions, special operation, coordinated train plan, increased frequency, logistics solutions, travel planners and so on

3. If necessary, the third step (Rebuild) involves limited rebuilding, e.g.: reinforcements, trimming actions, support measures, widening, platform extension, bypass trails, pitch fields, diverting in fares, ITS solutions, flat crossings, setup trails, and more

4. The fourth step (Build new) is implemented if the need cannot be met in the three previous steps. This means new investments and / or major rebuilding measures.

Dialogue and openness

The Swedish Transport Administration has sought to create dialogue and openness about the development and content of the plan and the proposal for a new national plan has been developed in dialogue with stakeholders. Hearings and seminars have been conducted in several places in the country and at different stages of the work process. Ongoing contacts with the outside world actors have mainly taken place through the Swedish Transport Agency's regions and in different collaborative groups.

The draft proposal is now under discussion at the relevant agencies. Remarks were submitted to the government by 30 November 2017, which is expected to be scheduled in spring 2018.

The Swedish Transport Agency draws up the draft National Transport Infrastructure Plan based on infrastructure proposals and government directives. This is done in cooperation with county planners and other stakeholders. The government determines the national plan.

The work started in 2015 when the Swedish Transport Administration was commissioned by the government to develop a roadmap for transport infrastructure planning. The basis was the bill (2016/17:21 Infrastructure for the Future - Innovative Solutions for Enhanced Competitiveness and Sustainable Development) presented by the government in October 2016.

The current national plan for years 2014-2025.

Strongly increased funding for railways enables rail refurbishment and restoring its functionality on much of the network, while providing funding for development. New technologies will be used to modernize the railroad network. The measures will eventually lead to a more robust rail with increased capacity, i.e. a more reliable railroad with fewer disturbances. An increased focus on maintenance means that many jobs will be planned into an already heavily loaded railway. In a shorter perspective this can cause disturbances.

Measures to increase the load capacity and ensure the accessibility of the commercial heavy traffic on roads and bridges favours competitiveness. Traffic of longer and heavier trains creates better accessibility in important rail freight trains, even on the more low-traffic rail network. Changes included increased axle loads on Malmbanan and railings along the north coast, infrastructural improvements such as in the port of Malmö, the locks in Södertälje and the fairway from Landsort

to Södertälje. The work to replace the locks in Trollhättet channel, linked to Vänersjöfarten, is also proposed to commence during the planning period. Several of the shipping measures aim to be able to travel with larger vessels than is currently possible. Low-traffic roads and railways will be prioritized, among other things.

A prerequisite for achieving the transport policy goals is that the potential of digitization is taken care of and its risks are managed. There is ongoing extensive modernization of the transport system. New services enable combinations of efficient travel chains door to door with different modes of transport and improved traffic information, online and digitized infrastructure. Online, automated and electrified road vehicles combined with mobility services have the potential to radically change road transport.

In order to create the positive effects of digitizing the transport system, the Swedish Transport Administration may need to work with commercial and public operators. To increase knowledge about the potential of digitization and to develop implementable solutions, Swedish Transport Administration plans to conduct a number of demonstration projects in both freight and passenger transport: Bus Rapid Transit (BRT), automated freight flows between a port or a terminal to any logistics.

County infrastructure plan in Blekinge

The document includes political decisions regarding the prioritisation of infrastructural investments in Blekinge. This determines, for example, if buses, trains or cars will have better conditions in the future. Infrastructure is an important part of planning public transportation and will influence how people will travel. Other dimensions, such as urban-rural linkages and renewable energy are two areas that are also affected.

The Blekinge County Transport Infrastructure Plan for 2014-2025 includes investments in the regional road network consisting of all roads except the E22. In addition to investments in the road network, Blekinge has signed an agreement with the Swedish Transport Administration on co-financing capacity-enhancing measures on the Blekinge coastal railway.

The Transport Infrastructure Plan aims at creating an attractive and sustainable transport system and it thus constitutes an important part of the regional development strategy for the county Blekinge Strategy 2014 - 2020.

The OECD report on Småland-Blekinge points to deficiencies in the infrastructure where the county has less accessibility via the road and rail network to EU markets than regions that are geographically further away. However, Blekinge has a strategic position in the South Baltic region, which is considered a strength for the county. The position as a natural gate towards major population centres in Eastern Europe and Central Europe make it an important transit country for increased freight transport to emerging markets. However, Blekinge is a small region with a small population and, thus, has marginal resources to invest to support the development of the transport system. Significance for Sweden to develop a functional transport network over the Baltic Sea via Blekinge must therefore be reflected in National transport system plan.

The funds in the county plan are primarily aimed at increasing accessibility between the county's two TEN-T ports in Karlshamn and Karlskrona and the country's designated road and rail network for goods. The roads in the county have a prominent role in linking the transport system where RV 27 has significant deficiencies that need to be addressed.

Proximity to work and education requires good public transport. It will be possible to live and work in Blekinge or to commute to work and education in neighbouring countries. Proximity to the Øresund region and between the county's university and university centres are important for the county development. Therefore Blekinge plans to increase the capacity of the Blekinge coast and contribute to investment in the expansion of public transport. Together with the municipalities it can - with common resources - continue to expand the cycle road network for increased commuting.

Strategy for climate and energy in Blekinge

The document is based on the Agenda 2030 and describes objectives in a number of areas to reach the main goal to make Sweden climate neutral by 2050. Region Blekinge plans to reduce energy use, change to renewable energy sources and recycle more to reduce the amount of waste. The key to achieve this is to work together with various organisations in Blekinge and it has been part of the development of the document. The responsibility to make demanded changes is also put on a number of actors in the society to make it a shared task. The strategy includes many measurable actions to make the results possible to follow up.

Regional strategy for public transport in Blekinge

This document describes ambitions and frameworks for planning public transport in Blekinge. The public transport should be constructed to support the main goals of Blekinge to reach economical, ecological and social sustainability. Public transport should make Blekinge more attractive to live in and to visit. Blekinge wants to be competitive in areas where the demand for travel is high and that Blekinge citizens will choose public transport over the car. In rural areas public transport should offer an alternative to cars particularly for e.g. commuting to school and work. Blekinge also puts a lot of effort to attract tourists through a well-developed boat service in the archipelago. Public transport should also be a base for sustainable fuels to make it available for the public and at the same time to make public transport the best choice for reducing the climate footprint.

2.2.2 Poland

Polish National Transport Development Strategy until 2020

The main goals of the Transport Development Strategy apply to the creation of an integrated transport system through investments in infrastructure (strategic objective 1), as well as favourable conditions for the efficient functioning of transport markets and development of effective transport systems (strategic goal 2).

The implementation of the main transport goal in the perspective of 2020 and beyond is associated with five specific objectives referring to different modes of transport:

- specific objective 1: creation of a modern and coherent network of transport infrastructure
- specific objective 2: improvement of the organization and management of the transport system
- specific objective 3: improvement of the safety of traffic users and transported goods
- specific objective 4: limiting the negative impact of transport on the environment
- specific objective 5: building a rational model of investment financing infrastructure

The goals and directions of intervention mentioned above result both from the need to make up for the past negligence and entering new technological and economic trends in Europe and the World. Currently, many areas in Poland do not yet have easy access to local destinations centres of economic growth (in particular larger cities). They can therefore not function as a natural resource base for rapidly developing territories. As a result, areas of social exclusion are created, having unused human capital resources. With good territorial accessibility, they could be activated. The challenge for Poland is removing the backlog in the expansion, modernisation and revitalisation of transport infrastructure including connections of the most important growth centres to areas of lower development dynamics and their inclusion in the European transport networks (TEN-T). In the second period, a focus is set on increasing the level of infrastructure saturation and creation of an integrated infrastructure transport system. Only a coherent network of highways, railways, developed network of airports, seaports and inland waterways and PT systems will allow taking full advantage of so far hidden potentials of Polish economy, education, science and culture.

The Pomorskie Voivodeship Development Strategy

The Pomorskie Voivodeship Development Strategy is the most important document in the Voivodeship setting regarding mid-term policy directions; it was adopted by the Pomorskie Regional Assembly in 2012. The strategy points out three complementary and equally important development priorities: modern economy, active residents and attractive space.

The main goal is ensuring the development of the region - offering unpolluted environment; high quality of life; development based on knowledge, open communities; strong and diversified economy; partnership; attractive and cohesive space; multicultural heritage as well as maritime and solidarity traditions.

The document identifies many activities towards the implementation of the policy - financial, social, organisational and other changes. For example in the transport area: Pomorskie's Self Government plans to establish a Regional Management Board of Public Transport, which will organize the public transport of people using railways, buses and other means.

Regional Strategic Programme for Transport "Mobility of Pomorskie"

The Regional Strategic Programme for Transport "Mobility of Pomorskie" is one of six essential implementation tools of the "Pomorskie Voivodship Development Strategy". The program plays a leading role in thematic areas such as public transport, accessibility of peripheral regions and multimodal key nodes of public transport.

The programme defines most important challenges up to 2020 in the area of transport:

1. Balancing long-distance mobility between individual road transport and public transport to maximise sustainability.
2. Increasing the share of public transport through the comprehensive integration of public transport subsystems (infrastructure, rolling stock, organisation and information), creating an efficient linear and nodal transport infrastructure supported by high quality services.
3. Increasing the effectiveness and efficiency of transport infrastructure (road, rail and waterways) taking into account the region's social and economic needs
4. Reducing negative impacts of transport on the environment
5. Increasing user safety
6. Increased transport accessibility, especially concerning connections with the countries of the European Union and the metropolitan areas of the Baltic Sea Region.

The thematic scope of the programme includes an operational objective of the "Pomorskie Voivodeship Development Strategy": An efficient transport system and three directions of activities:

a) Development of public transport systems;

b) Development of a road network linking the district towns of the region with the Tri-City and their surroundings.

c) Improvement of the infrastructure connecting multimodal nodes with the regional transport system

The document identifies many activities towards the implementation of the policy, such as:

- modernisation of key railway lines
- electrification of railway lines
- construction of new roads and modernisation of existing ones
- purchase of rolling stock
- construction of integration nodes
- implementation of IT systems improving the operation of public transport

The Regional Strategic Programme for Transport "Mobility of Pomorskie" was adopted in 2013 and is subject to constant evaluation. The purchase of rolling stock and the reparation of roads belong to the main achieved results.

Metropolitan Area's Transport and Mobility Strategy until 2030 (STIM)

The Metropolitan Area's Transport and Mobility Strategy sets goals and the priority of actions into perspective with a time horizon until 2030, taking into account local, regional, national and EU strategic documents on transport policy and socio-economic and spatial development as an important dimension conducting interventions in the field of cohesion policy.

STIM in the main part presents the overall concept of transport development for the Gdańsk-Gdynia-Sopot Metropolitan Area including:

1. A detailed report on surveys concerning transport behaviour residents of the Metropolitan Area (MA) and traffic measurements and filling public transport vehicles
2. A diagnosis of the transport system in MA
3. The Program of Metropolitan Transport Development 2014 - 2020,
4. A travel model for the MA
5. An analysis of the development possibilities of the transport system of the MA
6. A strategic environmental impact assessment of the Transport and Mobility Strategy Metropolitan Area until 2030

The Strategy applies only to these aspects and transport services that potentially have a strategic and metropolitan nature. The objectives, principles and activities included in the Strategy relate to:

- joint initiatives undertaken or supported by MA self-governments, covering at least two municipalities
- organisational and investment tasks that are a continuation of those started before 2020 or new, based on the principles of a modern approach to the development of transport and using the latest technologies
- mobility by means of individual and collective transport, road, rail, water and air, as well as forms of active mobility

The main goal is to improve transport services through the implementation of investments and improve transport management throughout the MA by organisational and planning-design work. The document identifies many activities towards the implementation of the policy (Metropolitan Area Transport Development Program in Perspective 2014 – 2020):

- road, railway and waterway infrastructure development
- implementation of an integrated public transport management system (by bus and rail)
- extension of the Gdańsk tram network
- purchase of public transport vehicles
- adaptation of transport infrastructure to the needs of people with disabilities
- extension / modernisation of trolleybus lines in Gdynia and Sopot
- integration of dynamic information into public transport
- improvement of the bicycle infrastructure
- construction of off-road regional bicycle routes
- creation of a metropolitan bicycle system

The Metropolitan Area's Transport and Mobility Strategy until 2030 was adopted in 2015 and is currently being implemented.

Mobility Plan for Olsztyn Functional Urban Area 2025 (MPOFUA)

The document addresses transport problems resulting from the functional linkages between the core and the hinterland. It specifies how the public transport system will be developed and changed to promote sustainable mobility in its whole functional area. The focussed areas of intervention include:

- Urban-rural linkages – e.g. key roles of transport hubs (especially passengers interchanges) with emphasis on intermodal aspects, integration of municipal transport systems (ways of co-operation between different levels of public administration responsible for the transport services), solving of commuting problems (i.e. parking policy, possibilities for municipal railway development)
- Ticketing – plans for integrated ticket offers and a better ticketing system in the whole functional area,
- Information system – further development of integrated passenger information system (ITS).

The main objectives of the MPOFUA are:

- Equal transport opportunities for everybody in the functional urban area
- Promoting the alternative modes of transport - environmentally friendly
- Spatial integration of different modes of transport for better interchanges
- Higher safety level in transport, reduction of air pollution and excessive noise
- Reduction of greenhouse gases and energy consumption
- More efficient transport of goods and people
- Harmonious urban development including proper transport accessibility for citizens and other users
- Higher attractiveness of the functional urban area: a good place to live

Targets:

- Less CO2 emission
- Reduction of road congestion
- Higher percentage of urban public transport users
- Easy travels in the urban functional area
- Higher safety and quality of life for citizens
- Reduction of traffic in the city centre
- Traffic calming in residential areas
- Development of public spaces at the city

The MPOFUA was adopted on 27 September 2017 and the implementation period spans until 2025.

2.2.3 Germany

Coalition agreement between the ruling parties CDU, CSU and SPD *(Koalitionsvertrag)*

The elections for the German Bundestag in 2017 did not lead to an absolute majority of a single party so that a coalition was necessary to ensure the capacity to act of the future government. Therefore, and to have a national strategy, the CDU/CSU defined a coalition agreement together with the SPD in order to have a guideline for action for the government itself and to inform the population as well as public authorities. The document was finalised in February 2018 for the coming period of governance of Germany until 2021.

In this document common goals of the common government consisting of the parties CDU/CSU and SPD are formulated. Regarding public transport, the following areas of intervention congruent with INTERCONNECT are named:

- Cross-border solutions
    - Regarding transport between countries, the parties particularly aim at improving cross border mobility to strengthen the European cohesion.
- Ticketing
    - A cash-less, nation-wide, preferably smartphone-app-based, e-ticket system is to be introduced
- Information system
    - Digital innovation shall be utilised more strongly such as for digital planning, automated and connected driving
    - Better interconnectedness by providing better real-time information
- Infrastructure
    - Germany's transport infrastructure is to be further developed. This shall continue with at least the current level of investments. It is also said that projects from the Bundesverkehrswegeplan 2030 are to be prioritised. Regarding MWP this means a focus on the rail connection Lübeck / Hagenow Land – Rostock – Stralsund
    - Moreover, actions shall be planned to further electrify rail infrastructure
- Environmental impacts
    - It is aimed at a stronger utilisation of alternative propulsion for transport such as LNG for ship traffic or the electrification of vehicles (target: 100000 new charging stations and a battery production facility). This topic can also relate to INTERCONNECT's focus named as renewable energy, depending on the type of fuel and the energetic sources used for its production. The government aims at supporting innovation and use of hydrogen and bio fuels
    - Cleaner air, particularly in stronger polluted inner cities shall be supported and emissions shall be reduced at its source, i.e. through technical improvements and emission-free vehicles in public transport, especially for busses
    - To create ensure the compliance with emission laws, a monitoring and sanctioning system is to be introduced
- Organisation / Management
    - To successfully manage traffic infrastructure in the future, an association shall be created that involves trade unions and staff councils in decisions
    - Keeping Deutsche Bahn state-owned, profit maximisation will not be 1st priority. Instead maximising rail traffic

Since the coalition agreement represents the guidelines for future actions, concrete steps towards implementation of the policy as well as outputs cannot yet be identified and reported here.

Public Transport Law
(Gesetz über den öffentlichen Personennahverkehr in Mecklenburg-Vorpommern [ÖPNVG M-V])

To regulate responsibilities for public transportation and to provide a legal framework, the law on public transport (Gesetz über den öffentlichen Personennahverkehr in Mecklenburg-Vorpommern [ÖPNVG M-V]) has been created by the German federal state of Mecklenburg-Western Pomerania (MWP). This legal framework is targeted at public authorities and organisations relevant for the planning of PT services.

The law has been published on 15. November 1995 and it is valid for the German federal state of Mecklenburg-Western Pomerania (MWP).

Within the legal framework provided by this law the responsibilities of different authorities such as the federal state of MWP, administrative districts (Landkreise), urban municipalities (Kreisfreie Städte) or even local communities are defined. In general, the state of MPW, represented by the ministry, is responsible for public transport within the area of MWP, whereas local/regional authorities coordinate public transport if the service area and influence is limited to its local administrative borders. And interregional traffic connections are to be coordinated with responsible institutions of the other regions or, particularly in reference to rail traffic, with the federal state. The responsible Ministry can also define certain PT service areas if interconnections exceed a single region. The provision of PT is, however, assigned to PT companies

The policy furthermore defines general aims for providing public transportation (PT) in MWP, such as:

1. The PT offer has to be in line with the demand and the needs of the local population
2. PT has to cover all the geographical regions including the underpopulated areas taking into account environmental protection, profitability and thriftiness. PT should provide an adequate alternative to individual motorised traffic
3. PT should offer a needs-based connection of residential areas to workplaces, schools, public, social and cultural facilities and recreational areas
4. Including all modes of transport, PT is to be developed as an integrated system with coordinated timetables and tariffs. Competing routes on the road parallel to the rail should be avoided. Safe and easy transitions from private transport to public transport are to be strived for.
5. In the planning and development of transport infrastructure, priority should be given to the traffic-related issues of public transport in larger centres and in their surrounding area.
6. The planning and design of transport infrastructure and PT services must take into account the specific needs of women, children, the elderly, cyclists and, in particular, persons with reduced mobility
7. In low-traffic regions and at low-traffic times, the appropriate forms of operation, such as alternative PT services with minibuses, taxis and rental cars, should be used to complement or design the PT system according to the needs
8. Special transports of vocational and student traffic are to be integrated as far as possible in scheduled PT traffic

This policy's addressed areas of intervention and problems can be summarised such as:

- Accessibility of public transport including remote areas and urban-rural linkages

- Environmental protection
- Needs-based (demand oriented) service quantity and quality (including special needs of different user groups)
- Multimodality including safe and coordinated transition between modes

Integrated federal-state transport plan of MWP
(Integrierter Landesverkehrsplan Mecklenburg - Vorpommern (ILVP M-V))

According to § 6 of MWP's transport law (see the policy above), the federal state is the responsible authority for rail transport and state-wide coordinated public transport. MWP is therefore obliged to create the integrated federal-state transport plan for its area of responsibility in order to provide a framework for the public transport's further development for itself, public authorities and public transport operators in MWP. The current document has been published 16th February 2016 and its time horizon extends into the year 2030.

The plan faces three major challenges (a) demographic change in a sparsely populated area, (b) declining funding for transport infrastructure and (c) the need for a resource-efficient transport system. The policy contains statements on:

- The long-term state-wide planning for the services and infrastructure of public transport,
- Existence and future development of the rail PT offer,
- Stock and development of demand for rail PT services as well
- Financing and organization of public transport.

It is mentioned that existing funds shall be invested to make public transport more efficient and attractive. The overriding goal is an appropriate, economically and ecologically reasonable range of mobility services for all regions in the state. To achieve this, the ILVP M-V identifies the following priorities:

- Integrated mobility instead of individual transport services with better networking of trains and buses, easier transfer between modes, flexible modes of operation, etc.
- Strengthen main networks of rail but also bus traffic by improving passenger long-distance services; Expansion of the main rail network; modernization railway stations; Adjusting time tables, improving multimodality and elimination of barriers
- Improvement of interfaces between different means of transport: i.e. by providing parking facilities for bicycles and cars at public transport stops
- Application of an integrated tact schedule (clock-face scheduling or pulsed time table) as a basis for the coordination of different PT services
- Avoidance of inefficient parallel traffic between buses and trains
- Improvement of service and communication to increase attractiveness
- Increase of efficiency through target-oriented PT services and examination and development of a more incentive-based public road transport financing.

Relevance for INTERCONNECT may also be derived from other mentioned topics that can be further elaborated if necessary, such as: cycling, ship traffic (including the importance of ports and environmental friendliness), rural mobility, mobility of tourists (less cars / car-free tourism), alternative fuels including a development of a competence centre for electro mobility and a state-wide strategy, accessibility, traffic security, mobility management and the strengthening of cross-border PT between Poland and Germany.

Regional Transport Plan Middle Mecklenburg / Rostock
(Regionaler Nahverkehrsplan Mittleres Mecklenburg / Rostock)

According to § 7 of MWP's transport law (see the corresponding paragraph on this law), Middle Mecklenburg and, respectively, the rural district Rostock and the Hanseatic city of Rostock are the responsible authorities for public transport within its borders. The city and its surrounding districts are therefore obliged to create the Regional Transport Plan for its geographical area of responsibility (Middle Mecklenburg and Rostock) in order to provide a framework for the public transport's further development for itself, public authorities and public transport service operators. The current document was published in 2005 and its time horizon originally extended into the year 2010 but this plan is still valid today. In 2016 it was agreed to provide a new version by the end of 2018.

The aim of the transport plan is to review the success of the preceding plan from 1997 and the demand development from 1997 until 2003 as well as to ensure and define quality standards of public transport.

Since the policy is about PT within the borders of the city of Rostock and its surrounding district, it mainly refers to intra-urban and urban-rural linkages as well as rural PT and, in general, the degree of PT service provision.

Referring to the urban area of and around the city of Rostock, the plan contains statements on the existing PT service system and its future development, its rolling stock, the evolution of PT service demand, financing, organisation and it addresses five broader areas for defining quality standards:

1. Service quality
2. Transport quality
3. Environmental Standards
4. Provision of operating data
5. Quality control

Regarding service (1), defined quality standards correspond to basic minimum standards, service areas, network hierarchy, urban catchment area (including distance to stops), operating hours, operating frequencies and intermodal hubs. Transport quality standards (2) are set in reference to infrastructure, vehicle design and equipment occupancy, punctuality, acceleration systems, reliability, tickets and fares, information, customer support, cleanliness and safety. The consideration of environmental standards (3) serves the general population by reducing air pollution and mitigating climate change. Corporate policy and environmental protection also help improving the image of PT service companies. To understand performance figures of PT, the service companies are contracted to provide data on their operation (4). And, eventually, the transport plan determines that the quality of PT services is to be controlled to provide transparency and incentives to further quality improvements by PT service organisations.

Rostock 2025 – Guidelines for urban development
(Rostock 2025 - Leitlinien zur Stadtentwicklung)

The policy is a strategic concept for the future development of the Hanseatic City of Rostock on its way to becoming a more sustainable city. The document was released for the first time in 2000. Because changing conditions (particularly in the areas of energy / climate protection, international cooperation, science and research, demography and culture) required significant updates, the city assembly agreed on a new version that was published in 2012 by the city of Rostock. Its time horizon extends into the year 2025 and it is addressed to, first, authorities occupied with city planning issues, in particular the local city government as the responsible institution deciding on the order and degree of implementation actions and, second, to inform the public on current city planning related topics.

The policy represents the basis for all municipal specialist concepts and sectoral planning. It contains the fundamental goals of the city's traffic development. Rostock wants to i.e. better integrate public transport between the rural district and the city centre, improve multi-modal infrastructure in the port and become a more sustainable city. Provision of energy from renewable sources is thus targeted.

1. The plan is divided into 8 major guidelines:
2. City of science and research
3. Port city and business centre
4. City of tourism
5. Rostock is a trailblazer in climate protection
6. City of education, culture and sport
7. Social city
8. Urban planning and architecture in high quality
9. Green city by the sea

In particular the third component of guideline 2 "Ensure mobility, reduce traffic congestion" is related to public transport and, thus, relevant for INTERCONNECT. For instance, regional traffic networks are to be better integrated with (a) efficient transport links to other economic areas, (b) reliable transitions from long-distance public transport to urban public transport and (c) linkages of the city centre to the surrounding area through attractive connections. Other aims include the order of prioritization for regional planning strategies. Non-motorised traffic (1st) and local public transport (2nd) are prioritised over commercial traffic (3rd), motorised private transport (4th) and other motorised private transport (5th).

It is stated that the stake of PT and non-motorized individual traffic should rise from 65% to 70% and that public transport will be made faster, more comfortable and more flexible with a better price-performance ratio. And special offers, such as district buses, ferries across the river Warnow and CarSharing, are to be made to supplement the public transport system.

Main actions towards implementation include:

- Closer link of Rostock to surrounding urban areas by utilising faster trains with a higher frequency
- Applying an integral timetable to ease the change between modes.
- Gradual networking of the information and control systems of road traffic, commercial traffic and public transport.
- Keeping a long-term focus on a light rail project as an option to link city centres by also using regular train tracks.

- Upgrade of the Warnemünde train stations to make it more suitable for long-distance-trains and cruise ship passengers.
- Prolongation of the city train (S-Bahn) to the Overseas-Port and its ferry terminal.
- Promotion of special offers for different population groups such as for children.
- Further development of the bus network to better supplement to the rail network including electro mobility as well as flexible forms of operation.
- Infrastructure improvements for walking with less barriers

Promotion of cycling by providing more short and secure bicycle paths between city areas and the district as well as other infrastructural measurements such as bicycle parking, signage, multi-modal links and cleaning of cycle paths.

It is also mentioned in the plan that the measurements shall include permanent marketing and monitoring to be effective and, to achieve the goals, the personnel, institutional and financial prerequisites have to be created.

With this Urban Development Guidelines from 2012, fundamental goals of traffic development in Rostock were decided. During the process of preparing a strategic mobility plan, the Mobilitäts Plan Zukunft (MOPZ), these goals were again checked for their completeness regarding traffic planning requirements, discussed and modified, and finally communicated to the citizens in 2017 (see the following policy on the MOPZ).

Mobility Plan Future *[Mobilitätsplan Zukunft (MOPZ])*

The Mobility Plan Future or "MOPZ", i.e. "Mobilitätsplan Zukunft" is the succession plan of the traffic concept document from 1998: "Integrierte Gesamtverkehrskonzept der Hansestadt Rostock (IGVK 1998)". The MOPZ as a planning tool represents an informal framework plan for the development planning of the Hanseatic City of Rostock. Unlike the Urban Development Guidelines "Rostock 2025" (see policy above) the MOPZ is solely focussed on mobility. In fact, fundamental goals of traffic development in Rostock were already defined with the "Rostock 2025" guidelines from 2012. But in the process of preparing the MOPZ, these goals were again checked for their completeness (regarding traffic planning requirements), discussed, modified and finally communicated to the citizens in 2017 by the city in collaboration with IVAS, an engineering company for traffic systems and systems. Its time horizon extends to about 10 to 15 years and it is aimed at informing the city's inhabitants as well as stakeholders involved in city planning (primarily the Department of City Planning).

The MOPZ constitutes the foundations for the medium- and long-term development of mobility and traffic in the Hanseatic City of Rostock. Its goals have been readjusted and aligned with the current and future requirements and perspectives of urban development taking also into account the European Union's requirements for Sustainable Urban Mobility Plans (SUMP).

The MOPZ's main aims are divided into the following four "overall objectives":

1. Securing the traffic conditions of urban development for housing, economy, tourism and culture, the (inter-) regional accessibility of the Hanseatic city of Rostock as well as the connection of all city areas / ensuring road safety and the participation of all population groups and the economy in mobility and traffic

2. Efficient use of transport infrastructures and economic use of financial resources, taking into

account long-term effects

3. Increasing the urban and environmental compatibility of the transport system and reducing negative effects

Taking into account the opportunities and risks of future developments / Special promotion of innovative mobility (e-mobility, car-sharing, etc.)

The MOPZ focuses on inner-city traffic and some urban-rural connections and it is mainly infrastructure oriented by focussing on developing and optimising traffic routes for e.g. trains, trams, buses, bicycles and pedestrians.

Renewable energy can be of importance since the city is according to the plan "constantly looking for alternative technologies". An e-bus connection is planned in the sea-resort of Warnemünde. And an inner-city e-ferry connection is planned between Rostock City and Rostock-Gehlsdorf.

Planned actions towards the plan's implementation are e.g.:

- Creation of a study on light rail connection to the Scandinavia ferry terminal
- Re-introduction of the interurban train (S-Bahn) to the seaport on its still existing track
- Further development of the city's Park + Ride system
- Qualitative development of a green network that includes cycling paths
- Use of innovative propulsion technologies in public transport

2.2.4. Denmark

Guldborgsund Municipal Plan 2017 – 2029 *(Kommuneplan 2017-29)*

The Municipal Plan 2017-29 outlines the overall planning guidelines for the municipality's physical development. It is the first digital municipal plan in Guldborgsund Municipality. This policy was approved by the Guldborgsund City Council in 2017 and is valid until 2029. However, every fourth year a new plan is produced; always covering a time horizon of 12 years. It is addressed to citizens, businesses and other public institutions and authorities in the Guldborgsund Municipality.

The objective of the plan is to make Guldborgsund Municipality a better place to live and visit, to increase the number of municipal citizens, increase job creation and increase the number of young people that obtain a qualifying education. The document includes political decisions on overall frameworks for:

1. Towns and living areas,
2. Business and labour market,
3. Nature and landscape,
4. Leisure management and tourism,
5. Environment protection and
6. Infrastructure, energy and traffic

It is stated that all new initiatives and decisions, e.g. for new buildings and roads, should be in line with the Municipal Plan, where the geographic locations for town development and living areas, locations for business development and the (international) transport corridors, as well as areas for nature protection are outlined.

A specific public transport component does not exist in the policy. The 6th overall objective is, however, related to traffic and the aims to achieve sufficient transport services and traffic safety are mentioned.

The section on road management defines the framework conditions for e.g. maintenance, protection and the upgrade with new traffic information technology. Road transport infrastructure consists of transport corridors E47 and E55, local municipal roads and small private roads. The state roads are maintained and paid by Danish national government. Municipal roads are maintained by the municipal and private roads are maintained by their private owners (see Figure 1).

Strategy of the Infrastructure and Environment Committee

Beyond the municipal plan there is the Infrastructure and Environment Committee of the Guldborgsund Municipality City Council with a four-year strategy for their time in office. Regarding transport, this strategy states the following focus topics and objectives:

- To provide a good framework for secure roads (particularly to schools), bicycle lanes, and need-based bus routes
- Focus on connecting infrastructure that supports the citizens' and business company's mobility.
- Coordination and optimisation of different transport means and routes

Figure 1: Guldborgsund state roads (red), municipal roads (green) and private roads (blue).
Source: Guldborgsund Municipality (2018)

2.2.5 Lithuania

National Transport Development Programme 2014-2022

The National Transport Development Programme 2014-2022 has been developed taking into account the multifaceted benefits provided by the transport sector to the state, society and the economy of the country. The program is necessary for the sustainable development of the Lithuanian communication system, efficient management of state resources and the use of structural funds of the European Union, to increase the competitiveness of the transport sector.

The program is a medium-term strategic planning document setting strategic goals, common goals and objectives for achieving these goals, as well as their evaluation criteria and the institutions implementing the program. The program analyses the prospects for the development of the transport sector - transport (roads, railways, sea and inland waterways, air), logistics and postal services. The program highlights horizontal priorities for the development of transport: multimodality of transport, integrated urban transport, application of intelligent transport systems for all modes of transport, road safety and security, and increasing energy efficiency in the transport sector, development of environmentally friendly transport.

The strategic goal of the program is to create a sustainable, environmentally friendly, competitive and high value added Lithuanian transport system. Upon reaching the strategic goal, the communication system ensures high-quality, efficient, continuous and sustainable mobility of members of the public and the transport of goods, high-quality logistics and postal services.

Main objectives of the programme:

- The first objective of the programme is to increase cargo and passenger mobility by improving the corridors of the EU TEN-T core network and connecting them to the transport network of state and local importance and developing the interoperability of different modes of transport.
- The second objective of the Program is to pursue an active transport policy, increase the competitiveness of the transport sector, and improve the quality of transport and logistics services.
- The third objective of the programme is to promote the coherence of the local (urban and suburban) transport system.
- The fourth objective of the programme is to increase the efficiency of energy transport in transport and reduce the negative environmental impact of transport.
- The fifth objective of the programme is to increase traffic safety.

Klaipeda Strategic Plan 2013-2020 / Klaipeda SUMP (will be approved 2018) / 'Quattro' agreement between 4 regional municipalities

The new vision of the city's future covers almost every urban development area. It covers the increase in the citizenship and community sense amongst the people, providing quality health care and providing conditions for the healthy lifestyle of the citizen and the city it-self.

The sustainable development of the city is undoubtedly remains a top priority, increasing the attractiveness of the city, its rational infrastructure development is also very important. During the period of 2013-2020 there is a plan to build new roads and reconstruct the existing ones,

take proper care of parks, squares and areas near water, to revive the centre of the city and the residential areas, to reconstruct objects of heritage and adapt them for public use.

Klaipeda should become a green, environmentally-friendly city where a sustainable transportation system will be actively developed and promoted – residents and city guests will choose public transportation and bicycles rather than individual cars. Ecologic and environment-friendly vehicles will be presented to the wide public.

The main measures of the Klaipeda Strategic plan 2013-2020 include the following:

- Develop special transportation services for the recipients of social services
- Prepare Klaipeda city traffic development study and the sustainable mobility plan
- Develop a public and private transport cooperation system for constructing vehicle and bicycle parking lots
- Develop a public transportation network comfortable for residents by optimizing it with the means of taking the regular passenger traffic flow studies' results into account and consideration
- Integrate regular public transport (buses, fixed route taxi and other) route and schedule networks along with the ticket systems in the city and suburbs by 2018
- Provide opportunities for new, environment friendly transport types to be used in the city
- Promote environment friendly individual transport development by constructing electric vehicle zones
- Develop bicycle, pedestrian paths and pedestrian only streets system by increasing its integrity, interconnection and quality
- Prepare electricity driven public transportation bus development program for Klaipeda
- Increase the use of environment friendly fuels in public transport
- Increase Klaipeda's accessibility by different means of transportation

2.2.6 Estonia

Transport Development Plan 2014 – 2020

The Transport Development Plan for 2014-2020 is a national-level policy elaborated by the Ministry of Economic Affairs and Communications as well as the Ministry of the Interior, Estonian Road Administration and local governments. It provides a framework of guidelines that mostly public authorities use for developing the transport sector until 2020.

The plan also contains directions and principles to solve specific questions of transport development and it is a basis for legal changes of regulations for the transport sector. The objectives and measures set in the plan form a basis for the financial planning of transport infrastructure development with resources from the national budget or EU structural funds. The main objectives relevant for transport are:

- To improve the national public transport network
- To improve the regional public transport network
- To integrate the regional public transport and ticketing system
- To improve flight, railroad and ship connections
- To increase the share of public transport for commuting from 22.8 % to 25 % by 2020
- To increase the number of railroad passengers from 4.416 Million to 8.832 Million by 2020

Key areas for the development of the transport sector are e.g. introducing smart mobility, intelligent transport systems and improving the integration of the public transport network on the national and local level. The activities planned for the period of 2014 – 2020 amount to more than one hundred. Examples include:

- Continuation of the reconstruction of the Tallinn-Tartu highway into a four lane road
- Decreasing the share of cars in cities by improving the conditions for walking, cycling, using public transport and utilising smart solutions to offer various new services, particularly short-term bicycle and car rental
- Increasing the number of departures and travel speed of train traffic to become the most favoured means of transport connecting Tallinn and other towns
- Improving the train connection with Latvia on the Tartu-Riga line (Rail Baltica) and Russia (the trip to St. Petersburg should be shorter than 5 hours)
- Improving traffic safety to decrease the average number of fatalities to less than 50 per three years and, in a long term perspective, to zero
- Increasing the share of vehicles powered by renewable energy. Bio methane or compressed gas generated from domestic bio mass and waste should become the main alternative type of fuel in Estonia

Viimsi Parish (municipality) Development Plan and Financial Strategy for 2018 - 2022

This development plan as a long-term conceptual document was created in 2017 by the Viimsi municipality for its region for the period 2018 – 2022. It is particularly addressed at politicians and officials of the Viimsi Municipality Government. The plan includes strategical objectives with a roadmap for the municipal development, and the necessary resources to achieve them in order to create a better future for the inhabitants of Viimsi rural municipality. The aims that refer to public transport are:

- Improved infrastructure for more sustainable transport modes including reconstructed roads and stations for public transport
- Improved traffic safety for pedestrians, cyclists and public transport users
- Better multimodal transport solutions including the integration of walking, cycling and car traffic into a public transport system
- A better developed public transport network system including better connections with neighbouring municipalities such as the City of Tallinn and Maardu
- A developed P&R system

3. Conclusion on policies

Within the INTERCONNECT project, 5 main areas of intervention have been identified by the project partners during the project preparation. Since INTERCONNECT is focussed on interconnecting regional public transport systems in the BSR, Urban-Rural-Linkages have been taken into account as these kind of connections represent a main important element of regional PT systems within the areas of the project partners. As INTERCONNECT aims at interconnecting these PT systems to help creating a single transport area, including the Cross-Border is crucial. Better interconnected solutions, however, need to be accepted by the PT user and macro-regional integration cannot only happen on an infrastructural or administrative level. Integrated Ticketing shall help easing the process of usage and payment while Information Systems can provide the user with the required information to plan and use PT. Changes in the transport system shall also be accompanied by measures minimising environmental impact and making transport more sustainable. Renewable Energy is thus another main area of intervention in the focus of INTERCONNECT.

3.1 Urban-Rural Linkages

Urban-rural linkages are addressed by EU policy on transport such as by the White Paper on Transport from 2011 as well as by the EUSBSR by e.g. concentrating on the accessibility of remote areas or areas with underdeveloped infrastructure. Urban-rural linkages are also highlighted by referring to urban transport and commuting as an important area where the consumption of fossil fuels can be reduced, i.e. "cleaner" mobility can be promoted by higher energy efficiency and a fleet using alternative propulsion systems, a higher share of public transport in general and better infrastructure for e.g. walking and cycling (EC 2011: 8).

Swedish national policy on transport (the National Infrastructure Plan) addresses spatial accessibility by e.g. supporting rail infrastructure development and enabling combinations of efficient door to door travel chains with different modes of transport and improved traffic information, online and digitized infrastructure.

Accessibility is also a major topic on regional level of the German state Mecklenburg-Western Pomerania to provide an adequate alternative to individual motorised traffic: Its transport law addresses the necessity to cover all geographical regions including the underpopulated areas by aiming at a needs-based and integrated public transport offer with different modes, new alternative PT services as well as coordinated timetables and tariffs. Prioritised infrastructure planning and development are, however, the traffic-related issues of public transport in larger centres and in their surrounding areas.

Because of their geographical scope, urban-rural linkages are of main importance in regional and local level policy documents. Also in Lithuania, for instance, as Klaipeda plans to increase the accessibility of its city centre from outside to better integrate different modes of transportation. In Germany, the city of Rostock aims at better integrating public transport between the rural district and the city centre, by e.g. improving multi-modal infrastructure and the connection to the port, utilising (faster) trains with a higher frequency and applying integral timetables to promote PT and to become a more sustainable city.

In general, regional and local strategies with a focus on urban-rural linkages rather perceive the role of public transport in ensuring the quality of living for residents and satisfying their mobility needs. They embrace public transport as an instrument which contributes to (1) sustainable regional, urban, suburban development, (2) local/regional competitiveness and attractiveness, and (3) good living standards for the local and regional communities. These documents therefore often call for a better integration of urban and sub-regional public transport systems, in order to match the intraregional connectivity needs in the wake of advancing urban sprawl to the region's rural areas.

3.2 Cross-border solutions

The cross-border dimension, as referred to in the White Paper on Transport from 2011 or the EUSBSR, is addressed by the fact that the single European market and transport area includes all EU member states. Hence, it is aimed at integrating national public transport systems to form a larger single network instead of keeping a puzzle of national patchworks of infrastructure, technological and incompatible standards and rules. A single, competitive, efficient, sustainable, interoperable and multimodal transport system will support the EU's cohesion processes and ensure future economic growth, job creation and a high quality of life for its citizens. Competition of transport services should be possible within the EU without obstacles across borders. This is also reflected in the German coalition agreement where the improvement of cross border mobility to strengthen the European cohesion is named.

However, besides the above EU policy documents, neither of the considered strategic documents of relevance to the project partner areas sufficiently highlight the cross-border dimension of transport. Since barrier-free mobility across borders can be one of the possible drivers for socio-economic convergence processes and more internationalised labour markets (commuting options, attractive workplaces for foreign workforce etc.), this gap will be addressed by the INTERCONNECT project in Work Package (WP) 5).

3.3 Ticketing

According to the EC (2001: 13), "smart inter-modal ticketing, with common EU standards that respect EU competition rules is vital". However, the ambition of providing (cross-border) ticketing standards is not (yet) reflected as a main focus in the described EU policy documents.

In fact, the national government of Germany aims at introducing a nation-wide, cash-less, preferably smart-phone-app-based, e-ticketing system as described in the current Coalition Agreement. The Klaipeda Strategic Plan (Lithuania), the Mobility Plan for Olsztyn Functional Urban Area (Poland) as well as the Estonian Transport Development Plan briefly refer to the challenge of integrating their ticketing systems. It nevertheless seems that the provided information on the described policies do not represent Ticketing as being in a major focus.

3.4 Information system

Although the importance of integrating information technology into transport is highlighted by the EC's White Paper on Transport from 2011, the challenge of providing favourable passenger information systems (across borders) is not yet sufficiently reflected by the described EU policies. The German government names, however, that digital innovation shall be utilised more strongly such as for interconnected real-time information, digital planning as well as automated and connected driving. Estonia's national policy refers to information systems by its goal to introduce smart mobility and intelligent transport systems. Similar intentions have also been mentioned in the described policy documents Sweden, Poland and Denmark.

3.5 Renewable Energy

Oil dependency and greenhouse gas emissions are major concerns reflected in EU policy

documents, such as in the White Paper, since 96% of the energy needed by transport is still fossil fuel based. The EU therefore targets an emission reduction by 60% by 2050 (compared to 1990) (EC 2014 a).

In the Swedish National Infrastructure Plan sustainability represents a major element by e.g. strongly supporting rail traffic, its infrastructure development and the electrification of road vehicles.

In the Polish National Transport Development Strategy, fossil fuels are characterised as negatively impacting the environment. This is being addressed by the strategy's specific objective 4: limiting the negative impact of transport on the environment, but also by the Pomorskie Voivodeship Development Strategy that aims at creating an unpolluted environment.

In the German Coalition Agreement, environmental impacts represent a major concern in reference to transport issues. The government aims at stronger utilising alternative propulsion such as LNG for ship traffic, electricity for road vehicles as well as hydrogen and bio fuels. This shall help to reduce emissions at its source and hence to ensure cleaner air, particularly in stronger polluted inner cities through e.g. technical improvements and emission-free vehicles in public transport, especially for busses. To support the compliance with emission laws, a monitoring and sanctioning system is to be introduced.

In the Klaipeda Strategic Plan, for example, the aim of becoming a green, environmentally-friendly city with an active promotion and development of a sustainable transportation system is stressed. Choosing PT or bicycles over individual cars shall be encouraged – also by utilising ecologic and environment-friendly vehicles. Therefore, the city plans to construct electric vehicle zones but also to establish an electric bus implementation program.

Also in Estonia (in the Transport Development Plan) the share of vehicles powered by renewable energy is to be increased: Bio methane or compressed gas generated from domestic bio mass and waste shall become the main alternative type of fuel in Estonia.

3.6 Other areas of intervention and addressed topics

Besides the five main intervention areas focussed by the INTERCONNECT project, four other areas of intervention and addressed topics stood out in the policy documents suggested by the PPs:

- Infrastructure and technical facilities
- Management / Organisation
- Behavioural aspects
- Cycling

Infrastructure and technical facilities

EU policies, particularly in the White Paper also mention challenges of e.g. congestion (in particular in the sky and on roads) and infrastructure (its quality often differs substantially within the EU). Also in Sweden, national transport policy focusses on the provision of optimal infrastructure for future (sustainable) passenger and freight transport, by mentioning proposals on e.g. measures regarding the state infrastructure on roads, railways, sea and aviation.

Blekinge (Sweden) mentions the topic of infrastructure with regard to its County Transport Infrastructure Plan for 2014-2025 that includes investments in regional roads with a focus on the coast area.

In the Polish national policy, infrastructure is referred to by specific objective 1 (creation of a

modern and coherent network of transport infrastructure) and by specific objective 5 (building a rational model of investment financing of infrastructure).

Infrastructure is also a key topic in Germany's coalition agreement where the aim of further developing the transport infrastructure is described: The current level of investment has to be continued and projects from the Bundesverkehrswegeplan 2030 are to be prioritised. A focus is e.g. set on further electrifying the rail infrastructure. On regional level, the federal state Mecklenburg-Western Pomerania (MWP) stresses the need to strengthen main networks of rail but also bus traffic by promoting the expansion of the main rail network; modernising railway stations; adjusting time tables, improving multimodality, eliminating barriers and providing parking facilities for bicycles and cars at public transport stops. In fact – as it can be seen in Germany and other countries, infrastructure represents a major focus particularly of regional and local level policy to provide, e.g., minimum standards of PT services and thus to contribute to certain standards of living and mitigate environmental impacts of individual car-based transport.

In the Danish Guldborgsund Municipality, infrastructure is the major topic, particularly in reference to road development and maintenance to make this region a better place to live and visit.

Estonia emphasises the need for decreasing the share of cars in cities by improving the infrastructural conditions for walking, cycling and using public transport including utilising smart solutions. In particular rail traffic will be improved by improving connections and safety as well as by creating the conditions for higher travel speed and frequency. On local level, the Estonian municipality Viimsi adds the aim to develop the infrastructure for a P&R system.

Management / Organisation

In its national level strategic document, Poland names the improvement of the organisation and management of the transport system (specific objective 2). Pomorskie, for example, plans to establish a Regional Management Board of Public Transport, to better organise public transport.

Also Germany plans to establish a new organisation representing an association involving trade unions and staff councils in decision-making. Regarding the organisation of rail traffic, it is mentioned in the coalition agreement to keep the Deutsche Bahn state-owned; first priority will be maximising rail traffic rather than profit maximisation. Germany's federal state of Mecklenburg-Western Pomerania (MWP) also aims at the application of an integrated tact schedule ("clock-face scheduling" or "pulsed time table") as a basis for the coordination of different PT services. At the same time inefficient parallel traffic between buses and trains should be avoided.

Behavioural aspects

Although behaviour-related measurements were sometimes mentioned in transport related policies, they do not represent a major focus. In Germany (MWP), for instance, improvements of service and communication shall lead to a perceived increase of attractiveness. Another example is the promotion of special offers for different population groups such as for children on local level (in Rostock).

Cycling

The promotion of cycling is often referred to with regard to the objective of decreasing the negative impacts of car-based individual traffic. For instance, Klaipeda aims at implementing new high quality and interconnected paths exclusively for cyclists and/or pedestrians. In Rostock's "2025" policy, cycling is to be encouraged by providing shorter and more secure bicycle paths between city areas and the district as well as by applying other infrastructural measurements such as creating proper bicycle parking, signage and multi-modal links as well as by proper cleaning of cycle paths.

4. EU Projects

The presentation of good practices and projects has been divided into two chapters. This chapter "EU Projects" aims at showing information on past or ongoing EU projects on public transport in the South Baltic or other Interreg programme areas that have been suggested by the INTERCONNECT project partners. In this part general information about the projects is presented based on existing documents. In the subsequent chapter "Good Practice Examples", more practical examples with a focus on results and lessons learned are described.

4.1 Interconnect project (7th Framework Programme)[7]

Interconnect (INTERCONNECTion Between Short- and Long-Distance Transport Networks) was a joint research project in 2009 – 2011 (led by the Transport Research Institute at the Edinburgh Napier University with 7 partners from 6 countries) on the encouragement of integration, cooperation and competition in the provision of local and regional interconnections in the context of long-distance passenger journeys. The addressed target group consisted of a wide group of stakeholders, such as infrastructure owners, transport operators and planners, local or regional authorities, passenger organisations, strategic national and European decision makers and lobby groups, as well as the research community.

The project's focus was on those journeys that might benefit from more effective interconnections between different transport modes and services, and on those journeys where effective interconnection was hampered by institutional barriers, lack of investment, or failure to innovate. Therefore, 13 case studies across Europe, including the Tri-City area of Gdansk-Sopot-Gdynia and the ferry terminals in Rostock and Helsingborg were conducted. Identified key problems were e.g.:

- Non-provision (or inadequate standard) of the infrastructure for local links
- Poor design, maintenance or operation of modal interchange points
- Inefficient procedures for interchange (e.g. delays while waiting for luggage)
- Inadequate provision of local transport services (e.g. no fast public transport from an airport to city centre)
- Local transport services exist but do not serve the needs of connecting long-distance travellers (e.g. timetables are uncoordinated, nearest bus stop requires a long walk)
- Inadequate provision of information
- Unavailability of integrated tickets (covering the local as well as the long-distance parts of the journey)

Combined with an extensive literature review and feedback process, potential solutions to improve interconnectivity were identified. The presented conclusions were grouped into the following thematic areas: infrastructure planning, service management, organisational issues and intelligent transport systems. This resulted in the final output: the Interconnect toolkit containing 94 potential solutions to the identified problem areas related to interconnectivity. These solutions were systematised in the following categories: 1. Local link infrastructure, 2. Local transport services, 3. Improvements at the interchange point, 4. Check-in and luggage transfer, 5. Ticketing and pricing, 6. Marketing, information and sales and 7. Enabling solutions.

The toolkit with solutions and the final project recommendations are considered to be highly transferable as a policy and knowledge-lever. A analysis of the proposed solutions can be of high relevance for the current Interconnect project.

Further information can be found at this web page: http://www.interconnect-project.eu/

7 Provided by LP Region Blekinge

4.2 NSB CoRe project (North Sea Baltic Connector of Regions)[8]

Besides logistics, transnational community building and transport branding, public transport represents a main focus of the NSB CoRe project concentrating on long distance commuting and aiming at improving the sustainable accessibility of the Eastern Baltic Sea Region (EBSR) to passenger transport. The initial situation of the region is characterised by lacks of synchronisation between long distance and urban transport systems, deficits in infrastructure, interoperability and spatial planning from a cross border perspective.

The viewpoints of transport operators and ITS solutions are, thus, brought into passenger transport development on a transnational level, and policy making will be complemented through a transnational perspective of spatial planning by the project for a better synchronisation between countries. This will lead to producing a joint transnational vision of regional development with recommendations for policymakers in passenger transport to e.g. connect second level nodes and access routes to core network connections (CNC). This will improve the accessibility of cross-border areas as well as strengthen the role of urban nodes as service points between remote areas and the CNC.

Therefore, the lead partner Helsinki-Uusimaa Regional Council, 16 formal partners and more than 40 associated partners from countries along the TEN-T North Sea-Baltic Corridor work on realising the project within the Interreg framework (Baltic Sea Region Programme 2016-2019). The project is addressed at a wide group of stakeholders, such as infrastructure owners, transport operators and planners, local or regional authorities, transport and logistics operators and strategic national as well as European decision makers.

The project contains a wide array of activities; it is intended to enhance interaction between infrastructural development (passenger terminals), planning of transport services (timetables and tariffs) and smart mobility services. A benchmark report on ITS services will be compiled using an empirical data collection in the project area. Taking into account the results of the benchmarking exercise, the process of development for open data on mobility along the Tampere-Helsinki-Tallinn commuting growth corridor will be started. The implementation of a business model will be one of the questions under scrutiny.

In the current stage (first half of 2018), the project carries out a number of thematic studies. One of them is a benchmarking study on transport services that is completed and available on the project website (*https://www.uudenmaanliitto.fi/files/20887/Benchmark_report_24.10.2017.pdf*). The objective of the study was to benchmark existing smart passenger transport concepts and service developments in urban nodes and along commuting growth corridors. This study is part of NSB CoRe project plan.

Regarding transferability, the benchmark study might be of interest for the INTERCONNECT project; its focus was to find the barriers of entry to markets, best practices and public sector action points – mainly through interviewing transport service providers. However, for a stronger knowledge input for INTERCONNECT, further analysis and/or contact with the project's LP might be necessary.

Further information on the project can be found at this web page:

https://www.uudenmaanliitto.fi/en/projects/nsb_core_north_sea_baltic_connector_of_regions/project_info

8 Suggested by LP Region Blekinge

4.3 Scandria2Act project[9]

The project approach of Scandria®2Act follows an initiative of regions located along the Baltic Sea Region stretch of the Scandinavian-Mediterranean Core Network Corridor for a harmonized corridor development. Representing urban as well as multimodal nodes along the corridor, regional development challenges associated with transport are addressed by the 19 formal partners and 23 associated organisations from countries along the TEN-T Scandinavian-Mediterranean Corridor, led by Joint Spatial Planning Dept. Berlin-Brandenburg (DE) with in this project of the Interreg Baltic Sea Region Programme, 2016-2019.

The project's main objective is to foster clean, multimodal transport to increase connectivity and competitiveness of corridor regions while minimising negative environmental impact induced by transport. For this purpose, project partners have developed a joint project approach addressing the:

- Deployment of clean fuels
- Deployment of multimodal transport services and
- Establishment of a multilevel governance mechanism, the Scandria®Alliance

Expected beneficiaries of the project are a very wide group of stakeholders, such as: infrastructure owners, transport operators and planners, local or regional authorities, transport and logistics operators as well as strategic national and European decision makers.

The main actions necessary for project completion include improving passenger transports in the Scandria Corridor through better transnational real-time information and ticket purchase information services. Pilot actions on a mobile real-time info system are, therefore, planned for price, ticket and traffic information, by means of integrated information from different countries in a smart phone app for instance.

It is expected that first outputs will be revealed in the first half of 2018. The solutions achieved may contribute to the knowledge base of INTERCONNECT. To uncover transferability to other projects, however, require further analysis and/or contact with the project's lead partner.

Further information on the project can be found on the official web page:

http://www.scandria-corridor.eu/index.php/en/projects/scandria2-act

9 Suggested by LP Region Blekinge

4.4 ZeEUS - The Zero Emission Urban Bus System[10]

The Zero Emission Urban Bus System (ZeEUS) project aims at testing busses using electric propulsion by implementing live demonstrations in real-life urban bus systems to help the transition to an electrified bus system. This flagship EU project has been initiated by the European Commission, within the framework of the European Green Vehicle and Smart Cities & Communities, together with various public and private partner organizations, the ZeEUS consortium with more than 40 participants of "the entire stakeholder spectrum: public transport authorities and operators, bus manufacturers, industry suppliers, energy providers, national and international associations, research centres and consultancies" (UITP 2016). With this variety of partners and "a budget in excess of 22 million euros of which the European Commission co-finances 13.5 million [...], ZeEUS is the most important European project focusing on electric buses" (UITP 2016).

It was intended to show the economic, environmental and societal feasibility and benefits of adopting electric buses to users, public transport operators as well as public authorities; whilst relating to the European Commission's target to create competitive and sustainable transport systems. And besides piloting actions, the ZeEUS project also set up the ZeEUS Observatory to closely monitor world-wide developments of innovative transport solutions with e-buses.

The implementation from 2013 – 2017 took place in 10 different core demonstration cities: Barcelona (Spain), Bonn (Germany), Cagliari (Italy), Eindhoven (The Netherlands), London (Great Britain), Münster (Germany), Paris (France), Plzen (Czech Republic), Stockholm (Sweden) and Warsaw (Poland). Each demonstration site was unique representing a distinct combination of certain charging technology infrastructure, geographical and topographical characteristics and climate.

Major obstacles were particularly detected regarding charging infrastructure in almost all cities, according to the report on demonstration actions (UITP 2018). PP Münster regarded it as being the key for ensuring the reliability of the bus system. The implementation of charging infrastructure represented the greatest challenge for London; it was time consuming and from an administrative point of view often complicated (Plzen and Warsaw); especially occurring costs and delays made cooperation with the city council essential (Barcelona). Also the training of driver should be done "in advance so that the drivers are ready when the project launches" (Warsaw, UITP 2018: 19).

As stated by PP Barcelona, electronic-propulsion technologies are indeed sufficiently mature to be implemented further, PP Bonn (UITP 2018: 5), however, claims that "from an economic perspective, we need to be patient" and that "reliability and range of the vehicles has to be improved, particularly for low-temperature operations". In fact, when technical failures occurred frequently but these were rather "related to operating errors or vehicle malfunctions [...] than to the electrical propulsion technology" (Münster, UITP 2018: 13). Moreover, PP Cagliary points out that e busses consume much less energy than diesel buses. Nevertheless, both drivers and passengers gave positive feedback as in Plzen, London or Münster. Because of a lot of positive feedback, all PP cities plan to either continue or often even to expand actions initiated by the project related to the appliance of electric buses.

Because of ZeEUS' testing activities and positive experiences, the pilot actions have the potential to serve as blueprints for other cities and public transport operators; described obstacles and learned lessons can help to improve their learning curve.

Further information on the ZeEUS project can be found on its official web page:

http://zeeus.eu

10 Information provided by PP 3 (HIE-RO)

4.5 INTERFACE and INTERFACE Plus[11]

Cross-border ferry transport in the South Baltic (SB) region is generally characterised by a decreasing share of foot passengers. The EU financed (ERDF) INTERFACE and INTERFACE Plus project aimed at reversing this process by i.e. restructuring SB ports, harmonising time-tables and introducing cross-border tickets. Therefore, the INTERFACE project was initiated covering the time period from April 2009 until April 2012 (36 months) and its continuation, the INTERFACE PLUS project, from October 2010 to April 2015. Activities were focussed on following transport axes

- Karlskrona (Sweden) - Gdynia (Poland)
- Gdynia- Baltijsk (Russia)
- Trelleborg (Sweden) – Rostock (Germany) and
- Gedser (Denmark) - Rostock

Therefore, 21 partners from Germany, Sweden, Denmark, Poland and Russia, including local and public authorities, traffic and port operators as well as the most regionally important ferry companies were forming the partner structure in the INTERFACE project. The INTERFACE PLUS partnership consisted of 7 ports, local authorities and public transport providers from Poland, Denmark and Germany, with three of them being new to the project and four partners from INTERFACE.

The projects mainly addressed cross-border foot passengers on ferries including commuters and tourists as well as handicapped persons (with a focus on accessibility) by developing more comfortable, attractive and cheaper connections with improved service quality. Besides the users, beneficiaries were traffic operators (by improving its customer base, its connection and services) as well as SB cities (by attracting e.g. visitors, commuters, students or other customers targeted by promotion activities and special tickets, developed within the INTERFACE projects).

The project's main aims were concentrated on revitalising cross-border, environmentally friendly and car-free passenger traffic, and, therefore, setting minimum service quality for ports and terminals, closing gaps between PT systems of cities and its ports by improving intermodal PT, as well as by harmonising and improving cross-border passenger information systems.

In Denmark this has been done by focussing on the Gedser – Rostock axis by e.g. improving infrastructure and technical facilities through connecting the bus station to the Gedser ferry terminal, building PT operator networks including setting up a cooperation and communication structure between traffic associations, bus operators and ferry companies and optimising bus time tables to better align to the ferry arrivals and departures. On the German side, measurements on this axis included improvements of bus connections between the city centre and the port and the introduction of a joint intermodal combined ticket (ferry/train/bus) – the Danish-German Intercombi-Ticket (*http://www.intercombi-ticket.de*). In 2015, the first real-time cross-border information system within the Baltic Sea Region has been set up providing passengers with PT information on schedules, transfers and delays via screens at bus and train stations, and ferry terminals.

Measurements in Poland included e.g. an analysis of foot passenger demand for cross-border ferry journeys; feasibility studies for bus connections to ports, a new bus route to the ferry terminal in Gdynia as well as the introduction of a ferry link between the Tri-city (Gdynia, Sopot, Gdansk) and Baltijsk (Russia) with support of the INTERFACE project. A project wide implementation was represented by the launch of an online information portal for foot passengers in the South Baltic (*www.portlink.eu*). During the INTERFACE PLUS project, the focus was shifted to the connection between Poland and Nexø on the Danish island of Bornholm. Based on lessons learned from

11 Information provided by PP 2 (Innobaltica), PP 3 (HIE-RO) and PP 5 (Guldborgsund Municipality)

INTERFACE, existing ferry lines were promoted and improved by e.g. optimised time tables and (re-) constructed Nexø (2013) and Darłowo (2015) ferry terminals.

The INTERFACE project resulted in easier and faster travel and better informed travel planning e.g. on the Denmark – Germany (Gedser-Rostock) axis. However, a significant increase in the number of passengers using public transport on this route is not visible at first sight. This is mainly caused by low economic interest in foot passengers and foot passenger related policy of the ferry operator on the Rostock-Gedser axis. Different actors on this axis may also have different priorities. For instance, as Rostock's project manager A. Schubert notes, a ferry company may be very cautious to sell a combined ticket since they may then become liable for the service of the whole, intermodal journey. In this case, it is necessary that all stakeholders agree (pay) to share the risks among each other. Also existing business models may have a different focus than on foot-passengers. In addition, usual costumer behaviour is rather oriented on car-based traffic because of low knowledge and a lack of awareness about the improvements made for foot passengers. It has also been rather difficult to bring all PT operators together, since their local and regional service areas are much more in their core focus than cross-border routes - unlike e.g. the ferry companies directly operating between the countries. For instance, convincing the Deutsche Bahn to adjust their time-tables to local PT providers and ferries can be hard to impossible.

Further obstacles are represented by e.g. economic viability. New connections, such as the new direct bus line from Rostock's centre to the ferry terminal, are not always used to sufficient capacity and multimodal offers like the "InterCombi-Ticket" have to be presented much more visibly for example at the tourist office and on tourism related websites to attract more travellers. A. Schubert, however, notes that an advertisement campaign is planned. In fact, the benefit of such ticket offers and improvements have to be communicated. Events such as the Hanseatic Day or the partnership between Rostock and Guldborgsund can be used as an organisational structure for that.

According to A. Schubert time is another crucial factor to induce major change: Multimodal cross border offers for foot passengers on the Berlin – Copenhagen axis (via Rostock-Warnemünde and Gedser) have been of high quality and widely accepted until around the 1960s, when it became forbidden for the citizens of the German Democratic Republic (GDR) to travel to Denmark. Thus, until 1990, almost two generations had no chance to become familiar with this transport route, while using the car became much more popular. Under current circumstances, the re-establishment of the same standard as e.g. 100 years ago will need a longer time than the duration of a project. Looking into the future, A.Schubert says, people need to become aware that if somebody wants/ needs to make the trip, this can be done without a car and that sufficient information on e.g. transfers is provided.

With regards to transferability, F. Danborg, EU coordinator of the Danish PP Guldborgsund Municipality, mentions that the achievements can be transferred to other regions to provide easier and faster travel service for those who choose public transport, but this will not be a guarantee for a significant increase in passenger numbers. A. Schubert, however, stresses the need for hiring a development manager to ensure progress outside the PP's field of work. A PT service company is mainly paid to deliver public transport but not to cooperate within larger international projects. External budgets and a specialised and authorised project manager are therefore required.

Further information on the Interface project can be found on the official web page:

http://www.interfaceproject.eu/interface-project/welcome.html

4.6 ABC.multimodal[12]

To raise the importance of cycling in urban transport, the lead partner Hanseatic City of Rostock together with the German Cycling Association Rostock, Municipality of Kalmarthe and the Pomeranian partners Miasto Gdańsk, Polska Unia Mobilności Aktywnej and Pomorskie Stowarzyszenie Wspólna Europa have carried out the ABC.multimodal (Access by Cycling - Integrating cycling into multimodal transport system and mobility culture) project from 2011 - 2014. The local activities within the project focused on three different groups of potential users:

- Rostock: Travellers from the suburbs to the city centre
- Kalmar: Clients and shop owners in the main commercial districts
- Gdańsk: Staff of media companies

To promote cycling in public transport, it was planned to develop methods that will effectively change the thinking of local politicians, road managers and residents to better integrate bicycle transport into the public transport system and existing transport culture. Actions have therefore been focused on two main areas:

- Urban planning / traffic management and
- Promotion of bicycle transport by the creation of an exemplary master plan

The project started with pro-cycling campaigns in all three cities involving non-governmental organizations (NGOs) such as the Allgemeiner Deutscher Fahrrad-Club (ADFC) - the German Bicycle Association represented by its Rostock branch office and the Polish Union of Active Mobility (PUMA) from Gdansk. Together with the project partners, the main result has been created: the "Cycling implementation book" – publication that was firstly disseminated in 2015 at the Velo-City international conference in Nantes and at the German National Bicycle Congress in Potsdam.

Further information on the ABC.multimodal project can be found on the official web page:

http://www.abcmultimodal.eu/

12 Information provided by PP 2, InnoBaltica

4.7 BATco - Baltic Adriatic Transport Cooperation[13]

The Baltic-Adriatic Axis is a transport corridor on the European Continent spanning North-South connecting the Baltic and the Adriatic Seas by mainly linking Italian with Polish ports via Austria, Czech Republic and Slovakia. This transport corridor consists of an intermodal railway axis, namely the Trans-European Networks - Transport (TEN-T) Gdansk – Warszawa – Katowice - Brno/Zilina – Bratislava/Wien (railway priority project 23) and its extension to the south along the cities of Wien - Graz – Klagenfurt/Villach – Udine Trieste/Venice - Bologna/Ravenna (Schuschnig 2010).

To increase the importance of the Baltic-Adriatic Axis and to positively influence transport planning including a past TEN-T revision following the BATco project, organisations along the transport corridor have partnered to create a support project, the Baltic-Adriatic Transport Cooperation (BATCo). Led by the PP Region of Kärnten, the project also included partners from Pomerania: Instytut Morski w Gdańsku and Zarząd Morskiego Portu Gdańsk S.A. The project has been run for 3 years (2010 - 2013) and it was primarily targeting public authorities in the partner areas.

The main goal of the BATco project was to effectively manage the logistics potential along the transport axis. Activities therefore aimed at analyzing the potential, developing methods of joint management of the logistic potential, establishing cooperation, optimising the flow of goods and passengers and reducing CO emissions. For instance, to achieve these goals, a harmonized international database on transport data has been created, the potential of "green" transport has been defined, a model to reduce transport risks to the environment has been designed and economic potentials and opportunities for enterprises along the Baltic-Adriatic Corridor have been identified.

An important project output was the BATCo Transport Model covering rail and road connections within the partner areas affected by the transport corridor. It includes an analysis of traffic volumes and infrastructural conditions. This work in turn led to the creation of the Transnational Cooperation Point (TCP) at the Maritime Institute in Gdańsk.

Further information on the BATco project can be found on the official EU web page:

https://ec.europa.eu/transport/modes/rail/ertms/corridors/baltic-adriatic-corridor_en

13 Information provided by PP 2, InnoBaltica

4.8 BGLC - Bothnian Green Logistic Corridor[14]

Improving internal and external transport links belongs to the main pillar of the EU-BSR strategy in reference to the objective of connecting the regions (EUBSR 2018). In fact, the Bothnian Corridor is of high importance for cross-border cargo flows as well as passenger transport in Europe and its neighbouring regions. Transport needs are also likely to increase in coming decades, regarding cargo particularly for raw materials such as "forest, sea food, iron ore and other minerals" (EUBSR 2018 b).

The BGLC was an international project from 2011 until 2014 by Region of Västerbotten from Sweden (lead partner) together with 28 partners from 5 countries (Sweden, Finland, Norway, Germany and Poland) and 57 associated partners. The project's target group mainly consisted of public authorities in the partner areas and (public) transport operators.

Main aims were to "integrate and further develop the existing road, railroads and sea transport connections that link the north of Scandinavia to the European rail network" (EUBSR 2018 b). Key elements were to develop the campaign of "green railway corridors", to manage passenger and cargo rail transport on cross-border, national, and regional/local scale. Infrastructure and logistic solutions had thus to be designed in a way to ensure efficiency to organise transports, multimodality and the absence of collisions.

The research that had to be done to create a strategy with actions and recommendations involved analyses of e.g. load and traffic volumes, economic impacts, possible solutions for decision-makers, technologies of transport, current weaknesses, future needs and current and future infrastructural performance. Regarding INTERCONNECT, these data could also help to identify and design recommendations for greener, more sustainable and car-free paths of public transport development.

Further information on the BGLC Strategy (2014) can be found in this report:

https://www.kainuunliitto.fi/sites/default/files/bglc_strategia_032014.pdf

14 Information provided by PP 2, InnoBaltica

4.9 CoBiUM - Cargo bikes in urban mobility[15]

CoBiUM (Cargo bikes in urban mobility) is an international project of 6 partners from 4 countries within the Interreg South Baltic Programme 2014-2020 running from 2018 until 2021. It is aimed at changing the fossil-fuel based urban transport towards an environmentally more sustainable alternative by supporting cargo bicycles.

Particularly shorter distances (up to 5 km) are considered to be suitable for a shift from cars to bikes. Even for up to 15-20 kilometres, cargo bikes can be seen as a valuable alternative when electric motors, such as it is the case with pedelecs, are added. But, as it is noted in a project description (University of Greifswald 2018) "the problem is rather that cargo bikes are not very well known and considered to be something very special and not for ordinary use".

CoBiUM thus seeks to communicate and campaign in favour of cargo bikes to increase awareness of its potentials, knowledge and use among target groups, such as "private users, municipal services and business logistics" (University of Greifswald 2018).

Positive influences in urban areas are expected in the areas of car traffic and parking pressure reduction and hence the creation of safer space previously consumed by cars, cleaner air and less noise pollution.

Further activities include the design and implementation of various pilot solutions suitable for different cities with unequal cycling policies. Within the project a guide is being developed containing recommendations and strategies for cargo-bike related bicycle policy.

Further information on the CoBiUM project can be found on the following web page:

https://southbaltic.eu/-/cobium-cargo-bikes-in-urban-mobility

15 Information provided by PP 2, InnoBaltica

4.10 ELMOS - Electric Mobility in smaller Cities[16]

Electric Mobility is considered to offer new opportunities for public transport especially in urban areas where charging infrastructure can be implemented within shorter distances meeting the rather limited range of e-vehicles. Various pilot projects in cities outside the BSR have shown that electric mobility solutions can be implemented and perform successfully. In fact, electric mobility is innovating fast and increasingly adopted; it can be expected to become a normal part of public transport in the future. Therefore, as stated on the ELMOS project web site, "it appears as high time for the small & medium sized cities in the South Baltic Area to set the course for the transition into a new era of urban transport and making the most of new opportunities that arise" (ELMOS 2018).

ELMOS stakeholders regard e-mobility not only as a new, cleaner propulsion technology that can be used for conventional modes of transport, they also see potentials for complementing PT services by adding new solutions to existing PT systems making them more intermodal. New concepts have thus to be developed to extend PT service chains in urban areas (ELMOS 2018).

Led by the German PT operator Rostocker Straßenbahn AG, the ELMOS project has been run from 2011 until 2014 and, in order to include the driving forces for changes in PT policy, it was mainly aimed at public authorities and PT operators in the partner areas and also at technology producers of public and electric mobility. The projects main goals were examining the international state of knowledge in the area of electric mobility between the five participating cities of Rostock, Växjö and Karlskrona (Sweden), Trąbki Wielkie and Malbork (Poland).

To create the ground work for a long-term e-mobility related strategy, activities included presentations by experts with experience from other e-mobility related projects, study visits, organisation and participation of conferences and identifying good practices from all over the world. This has led to the introduction of the first pilot projects on integrating electric bikes into PT in 2013 in the partner cities where e-bicycles are rented out to residents from rental stations that vary by technology from automatic systems (Rostock) to classic rentals (the other partners). Växjö also established and tested a demonstration project on a combination of carpooling with an e-car sharing platform.

The experiences from the ELMOS project are summarised in **e-mobility manuals** available for each country for download on the ELMOS web page.

Further information on the ELMOS project can be found on the official web page:

http://www.elmos-project.eu/

16 Information provided by PP 2, InnoBaltica

4.11 TransBaltic[17]

TransBaltic - towards an integrated transport system in the Baltic Sea Region (2009 - 2012) was an international project co-financed by the EU-BSR programme and led by Skåne County (Sweden) together with 20 organisations, such as regional authorities, research institutions, PT, logistic operators and more than 30 associated partners.

There are two major areas of concern in the BSR: A lack of cross-border orientation within national transport solutions and freight volumes that are expected to significantly grow - particularly reference to road traffic. Existing transport networks were thus considered to be inefficient internationally representing a major barrier for economic growth in the BSR due to incompatibility of different national systems and logistic patterns.

Therefore, incentives had to be developed to better integrate rail, road and sea infrastructure and to simultaneously promote regional development. Hence, the project's aims were "to provide regional level incentives to facilitate a sustainable multimodal transport system in the BSR, by means of joint transport development measures and jointly implemented business concepts" (EUBSR 2014).

First, actions were taken across governments to harmonise infrastructure planning and stimulate territorial cohesion and green growth. Second, the BSR's accessibility from outside and traffic flows within the BSR and other macro-regions had to be tackled since it was hitherto insufficiently addressed by transport policies. Therefore, TransBaltic has targeted results of finished international projects on transport across the BSR by updating, upgrading and restructuring them into a new framework through pilot business actions (EUBSR 2014).

As a result, TransBaltic managed to position itself "as a strategic macroregional project" serving as an implementation tool for the EU-BSR Strategy and spread knowledge and proposals on "how to develop a sustainable multimodal transport system in the BSR; and test green transport solutions" (EUBSR 2014).

TransBaltic's main outputs included: a policy report with 2030 development outlooks and impact analyses of different scenarios, over 40 thematic reports, the idea of a green multimodal transport corridor-network as an important element of European cohesion, tested transport business solutions and the Macroregional Transport Action Plan (MTAP).

Regarding INTERCONNECT PP 2 (Innobaltica), TransBaltic had a significant impact on the Pomeranian Voivodeship since it placed transport links relevant for the region into an integrated transport system strategy within the BSR and the project stimulated the prioritisation and integration of infrastructure investments in strategic EU documents taking into account Pomeranian goals. TransBaltic also helped in identifying economic impacts of Poland's largest ports and in showing the possibility of using the Szczecin - Gdańsk - Olsztyn - Suwałki railway line for passenger and freight transport.

Further information on TransBaltic can be found in the final report:

http://eu.baltic.net/Project_Database.5308.html?&&contentid=27&contentaction=single

17 Information provided by PP 2, InnoBaltica

4.12 TRISTAR[18]

To increase the efficiency of traffic flows in the Tri-City agglomeration of Gdańsk, Gdynia and Sopot, the TRISTAR project was launched in 2007 by the Municipality of Gdynia together with the Municipality of the City of Gdańsk and the Municipality of the City of Sopot. The project duration was 8-years until the end of 2015 and it was financed by the European Regional Development Fund within the program of Operational Program Infrastructure and Environment 2007-2013. TRISTAR's purpose was to implement an integrated traffic management system for the benefit of users and operators of (public) transport and public authorities. TRISTAR's main aims can be summarised as follows:

- Improvement of road safety
- More efficient use of existing traffic infrastructure
- Reduction of congestion in road transport
- Environmental monitoring and protection
- Better control over the transport system and its functions
- More efficient road rescue management
- Improvement of information flows on the transport system to its users (drivers as well as travellers)

Implementation of TRISTAR measurements were expected to help reducing travel times of both individual and public transport while reducing the number of accidents through better infrastructural conditions and information systems. Therefore, the signalling infrastructure was upgraded and linked to telecommunication systems to enable operation of two new cooperating traffic management and control centres in Gdynia and Gdańsk.

Characteristics of the traffic control system were a prioritisation of PT vehicles, the detection of traffic incidents, safety management, provision of parking information, video surveillance, traffic volume measurement and meteorological monitoring. Variable signs for drivers and PT users helped to provide dynamic information and about 150 traffic lights were controlled by the management centre to optimise traffic flows.

In fact, TRISTAR outcomes exceeded initial expectations. The average travel time of public transport has been reduced by 9.1 % (expected 6.5 %) and individual transport travel times could be reduced by 18.3 % (expected 5.5 %) (Lüßmann 2017).

Further information on TRISTAR can be found on the following web page:

http://www.gdansk.pl/inwestycje-miejskie/Tristar-inteligentny-system-sterowania-ruchem,a,17755

18 Information provided by PP 2, InnoBaltica

5. Good Practice Examples

Whereas the previous chapter rather explained projects that may lead to a good practice, this chapter is rather concentrated on certain outcomes that have proven to be successful and that are, therefore, regarded as being a good practice. Whenever possible the descriptions included information on obstacles and lessons learned.

5.1 Openbaar Vervoer (OV) Chipkaart *(Public Transport Chipcard) / The Netherlands*[19]

The Dutch OV Chipkaart as a smart card ticket solution has been introduced in 2004 by a public-private partnership including the Ministry of Infrastructure and Environment starting with large scale pilot projects and implementing first provinces in 2008 to replace all paper tickets by 2012 (nation-wide). The project led to the creation of a single nationwide electronic payment method for all modes of public transport, such as buses, trams, metros, ferries and trains (EG UITS 2013:108). This practice is thus addressed at all PT users and operators.

The chip card can function as different tickets since different products can be purchased that are loaded onto the card and validated at scanning machines usually at the entrance gates of each platform (trains) or in the vehicles itself (buses and trams) for "checking in" during or before boarding. While leaving the vehicle or platform the card has to be swiped again to "check out" so that the appropriate price for a specific distance can be determined. During the trip a conductor can use an electronic reading device to check whether the passenger has successfully checked in / paid or not (EG UITS 2013). The chip card can either be purchased as a personalised or a non-personalised version if there is no need for viewing travel history online or for those that are only temporarily in the Netherlands.

The card's size is the same as a regular bank card so that it can easily fit in any conventional wallet. Other advantages include the possibility of viewing travel details online; loading the tickets or credit at automated machines or online instead of having to visit ticket offices; and the easiness for transfer between modes with the same ticket. There is also a slight increase in safety: Less cash payments in public transport have made drivers less subjects of crime.

Transport providers can save costs not only because of automated ticket controls, sales and easier adjustments promotions and tariffs, but also on staff and administration in case of ticket related problems and questions, since there is just a single organisation (Trans Link Systems B.V.) to deal with from the customer's perspective.

When the OV chip card was introduced there were critics saying that tariffs were too high for the people that forgot to check out, that there may be privacy issues, that manipulating the cards was too easy or that the technology was not functioning as expected particularly during the start of the implementation, when, indeed, these issues needed to be addressed. On the positive side, however, user acceptance has been created due to long-term reliability and user friendliness (EG UITS 2013).

As a nation-wide multi-modal smart card ticketing system this appears to be a unique best-practice for other nations. Smart-card systems on smaller local (city)/regional level are already wide-spread throughout Europe and elsewhere and have proven to be successful and transferable.

Further information on the OV chip card project can be found on the official web page:

https://www.ov-chipkaart.nl/

19 Suggested by PP 3, HIE-RO

5.2 Annual season ticket: 365 days of mobility for € 1 a day / Vienna, Austria[20]

Accompanied by a city wide network expansion in Vienna, the Austrian public transport service company Wiener Linien has significantly reduced the price for its annual ticket from € 443 to € 365 in May 2012 to attract new customers.

The ticket can be used as a plastic smart card or as an app on smart phones. The price of € 365 applies when the ticket is paid at once. A payment by monthly instalments increases the price to € 396. People above 63 years receive a discount.

The annual ticket is valid on all means of Vienna's public transport (in the core zone) from a first day of a selected month for 365 days. It includes suburban trains, the underground, trams and buses (except special rapid bus lines) and there is no limit on travel frequency.

Besides investment in infrastructure and efficiency, the annual ticket is considered a success story. Since the introduction 2012, the number of annual-ticket sales and passengers has strongly risen **from 373,000 to around 778,000** in 2018. Since 2016 it can be noted that the number annual ticket holders exceeds the number of private cars in Vienna. The number of daily passengers has thus risen to almost 950 million a year (2.6 million per day). Wiener Linien is even targeting to soon reach one billion passengers a year (by 2020).

In an European comparison, Vienna represents one of the cities with the lowest annual ticket price: on average, an annual ticket costs around 780 euros, more than twice as much as in Vienna. So are the annual tickets in comparable cities, such as Hamburg (€ 606), Munich (€ 741) or Amsterdam (€ 920), significantly more expensive.

Introducing the € 365 ticket had several advantages such as new marketing opportunities, e.g. city-wide unlimited travelling "for just **€ 1 per day**" or a high acceptance by the public because of a high price-performance ratio, environmentally friendly and stress-free mobility as well as the 1-year freedom from buying tickets for each trip. There is also the option for companies to buy the annual ticket for their employees and set it off against their tax liability.

Referring to obstacles and lessons learned, Wiener Linien stated that a better offer leads to higher demand and the provision of PT services needs to cope with that. It is therefore necessary to provide sufficient capacity as well as the financing to increase capacity such as smaller service intervals and PT network expansions as it has been done in Vienna.

Some experts claim that reductions in ticket prices are particularly effective when there is still a huge untapped potential and still free capacity in e.g. buses and trams. Lower ticket prices should also be accompanied by other measurements such as higher parking fees with additional revenues being used to improve public transport (FNP 2018).

The Vienna model could serve as a blueprint for other cities and regions. In fact, transferability of pricing schemes seems easily feasible from a technical perspective, i.e. through software adaptations. From a financial point of view, increasing numbers of paying users may also (at least partially) outweigh risen costs caused by lower ticket prices and higher demand.

Further information on the € 365 ticket can be found on the official web page:

https://www.wienerlinien.at/eportal3/ep/channelView.do/pageTypeId/66533/channelId/-47408

20 Suggested by PP 3, HIE-RO

5.3 Free Fare Public Transport in Tallinn / Estonia[21]

Unlike the Vienna model of reduced ticket pricing, the Estonian capital, the city of Tallinn, has gone further by introducing a fare-free public transport (FFPT) for its local residents on 1st January 2013. With 425,000 inhabitants, Tallinn is currently the largest city in the world providing a full-scale FFPT service to all its residents (non-residents, except students, still have to purchase a ticket to use any of the city's public buses, trams or trolleys).

It is assumed that Tallinn created PT fare-free because of social reasons, less because of environmental concerns. During the financial crisis, a lot of people were not able to afford the tickets although PT was already subsidised by 70 %. Spending that much money, however, without benefits for lower income groups, seemed to be an "enormous waste" of public funds (Die Zeit 2018).

In fact, public transport fares were identified as a primary problem area in Tallinn. On an annual municipal public transport satisfaction survey from 2010, 49 % of the respondents were most unsatisfied with public transport fares followed by crowding (29 %) and lacks of frequency (21 %). Therefore, the City of Tallinn has decided to hold a public referendum on an FFPT policy which in turn was supported by 75% of the voters at a participation rate of 20%. The FFPT model was then, as a consequence, approved by the city council. And in order to cope with rising demand, accompanying measurements were undertaken to increase the PT system's capacity. Besides improving the (financial) attractiveness of public transport for users, main objectives of this policy are:

- Promoting the shift from private cars to public transport
- Increasing the mobility of unemployed and low income groups and
- Stimulating the registration of inhabitants as residents of Tallinn and hence increasing the municipal income tax

After three months, the impacts of the FFPT policy in Tallinn were evaluated empirically based on a before-after comparison and a PT demand analysis. It showed an increase of 3 % in passenger demand after the introduction of the FFPT. Taking variables of supply into account, the FFPT is considered to account for a demand increase by 1.2 %. The remaining 1.8 % was attributed to infrastructural improvements, such as PT priority lanes, and higher service frequency. Districts with high shares of elderly and unemployed and low motorization rates were associated with higher increase in passenger demand. Until today, Die Zeit (2018) states a total increase of passengers by 14 %.

The FFPT additionally costs the city around € 12 million annually. However, as targeted by the policy, a large number of new residents registered at the Tallinn municipality. In fact, the above 20,000 new residents more than outweigh the costs of the FFPT by creating an extra revenue of income tax of € 14 million per year.

Further information on the FFPT can be found on the official web page:

https://www.tallinn.ee/eng/freepublictransport/

21 Suggested by PP 9, Viimsi Municipality

5.4 Public Transport Ticketing System in Tallinn / Estonia[22]

To create an innovative, secure and contactless online public transport ticketing system, the project, led by the city of Tallinn, aimed at testing a new modern electronic ticketing system for all types of tickets and modes. The project was part of the Civitas Plus initiative. With the motto of "Making Innovation in Mobility and Sustainable Actions" (MIMOSA) the project has been carried out together with the partners Utrecht (Netherlands), Gdansk (Poland), Funchal (Portugal) and Bologna (Italy). The implementation of the project in Tallinn and also Harju County covered a time period of 4 years (15th Oct 2008 – 15th Oct 2012) and it was addressed to mainly users and public transport operators, but also employers.

The system consists of contactless cards, ticket validating machines (validators) at all PT vehicle entrances, printing devices for 1-hour paper tickets sold by the driver, control devices, central server of the system and modems for connecting the central server with PT vehicles. The project was about finding a modern and optimal solution for Tallinn including procurement of necessary equipment and implementation of the system. Main aims of the new ticketing system were:

- Increasing the passenger convenience providing a maximum possible number of channels for ticket purchase and easy possibilities for trip validation
- Introducing a number of combined-service and multi-journey tickets including dynamic fares based on distance
- Implementing an automated collection of PT usage statistics to enable better PT capacity and route planning

The project implementation has been structured into 6 stages: In stage 1, good practices have been studied and terms of references for Public tender were prepared. After calling for tenders and 2 selection rounds, a procurement contract was signed (stage 2). Installing the system then took 9 months with creating the software and infrastructural necessities in selected buses allowing the initial testing of the system. Stage 4 represented the dissemination campaign with the production and placement of marketing material and media related activities. Stage 5 was marked by the public, voluntarily testing with all buses being equipped with the new technology. And finally, stage 6 meant the beginning of full-scale and compulsory use of the contactless ticketing system as of January 2012.

The project's implementation and use led to very positive results: First, the PT system's annual costs have been reduced considerably by 64%. Second, the awareness of the new PT ticketing system has increased considerably (more than four-fold), and third, the acceptance of the new PT ticketing system increased moderately by 18%.

An important lesson learned was that the implementation of a complicated and large-scale measure in the limited project time of 4 years has a high risk of failure. Therefore, strong political will and an easy technology were crucial elements for success. It is also considered to be a highly transferable practice since it has proven to be successful in Tallinn as well as elsewhere. E.g., similar PT ticketing solutions from the company Ridango AS have been adapted to the city of Tartu (Estonia), Gotland Region (Sweden), Nuuk (Greenland) and Södermanland County (Sweden). Kyiv and Klaipeda will be among the next cities to receive similar new ticketing systems.

Further information on the ticketing system can be found on the official web page:

http://civitas.eu/measure/new-ticketing-system and

http://civitas.eu/sites/default/files/civitas-case-study-new-ticketing-system-tallinn.pdf

22 Information provided by PP 9, Viimsi Municipality

5.5 Traffic Association - Verkehrsverbund Warnow (VVW) Rostock / Germany[23]

The Traffic Association Warnow, in German: Verkehrsverbund Warnow (VVW) is an association of the 5 main local and regional public transport providers in Rostock and its surrounding district, comprising the following companies:

- Rostocker Straßenbahn AG [RSAG] – (urban trams and bus connections)
- Rebus - Regionalbus Rostock GmbH – (regional and urban-regional bus connections)
- DB Regio AG (inner-city and urban-rural trains)
- Weiße Flotte GmbH (urban ferry connections)
- Mecklenburgische Bäderbahn Molli GmbH (historical train connection)

The VVW was founded 27th February 1997 and it is operation since more than 20 years. It has most impact in the fields of urban and urban-rural linkages, ticketing and PT information. It aims at

Optimising and coordinating the entire PT network in its area of operation and creating uniform conditions of transport with coordinated timetables, network connections and tariffs.

- Operating a single-ticket system valid for all different modes of public transport
- Creating uniform conditions of carriage
- Providing up-to-date and clear passenger information
- Coordinating traffic with adjacent regions

In 1991 the first combined ticket rate has been introduced existing next to different rates of the individual transport companies. This lasted until 1994 when all the different tickets have been replaced by a common ticketing scheme introduced by the VVW's predecessor organisation Rostocker Verkehrsgemeinschaft (RVG) and the Hanseatic City of Rostock. After the foundation of the VVW in 1997, travel zones (used for ticket pricing) have been introduced (1998) and the area of operation has been expanded geographically as well as by the number of transport providers (1999-2013). To provide one-spot information on stops and time tables, an application for both iOS and Android smart phones was released in 2014. In 2018 it is furthermore planned to update the application with mobile ticketing options.

Major obstacles and lessons learned occurred in the areas of long-term financing of operation and infrastructure, as well as joint strategical decisions. The uniform ticket system is currently supported by local authorities that compensate for the network-related losses. The expenses for the common VVW office, staff and joint marketing activities and original investments are paid by its participating companies.

With regards to transferability, a cooperation model of PT service companies similar to the VVW can be suitable for other areas with different PT providers and ticketing in order to improve the PT experience for the user. I.e. a single ticket also valid for transfers, would make PT less complicated, and harmonized time tables can decrease total journey time in case transfers are involved.

Further information on the traffic association can be found on its official web page:

https://www.verkehrsverbund-warnow.de/home.html

23 Information provided by PP 3 (HIE-RO)

5.6 Integrated regular interval timetable[24]

This practice is commonly referred to with different names in English, such as:integrated regular interval timetable, pulse timetable, timed-transfer system, clock-face scheduling or highly-synchronized periodic timetable. The widely used term in German is “Integraler Taktfahrplan”. It describes a concept where PT lines depart at regular intervals such as every 10 or 15 minutes. Most commonly, departures are planned at the same minutes every hour to ease planning and user-friendliness. In order to form an integrated pulse network, departure and travel times and infrastructure are to be adjusted in a way that the network allows node stations where different connections and modes can meet at the same time at every interval / pulse. This can allow convenient and quick transfer, reducing overall travel times in the network.

With a range of hub stations, the network’s geometric appearance can resemble a hub-and-spoke model where, on the one hand, hub stations with transfer possibilities allow traveling through the whole network, and, on the other hand, replace the need for direct connections between every point. As shown in Figure 2, the two airports Los Angeles and Denver serve as hubs connecting the whole network with fewer connections (spokes) compared to direct links between all cities.

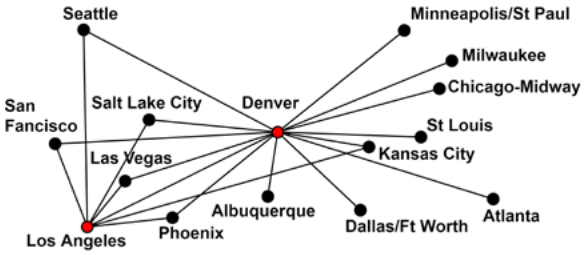

Figure 2: "Hub and spoke airline route structures. Los Angeles and Denver are used as hubs". Source: https://en.wikipedia.org/wiki/Spoke%E2%80%93hub_distribution_paradigm

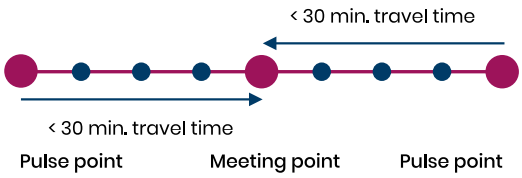

Figure 3: "Pulse and meeting points along an hourly pulse network" (Petersen 2016). Source: https://www.sciencedirect.com/science/article/pii/S0967070X16301469

In such a network with hub-like transfer stations it is important that travel speeds and pulses / intervals (of departures and arrivals) are designed to enable the meeting of vehicles at such a meeting point (hub). In Figure 3 an example of pulse and meeting points can be seen in a network with 60 min-pulse intervals.

On a larger scale on a national level, the pulse time table has been realised in The Netherlands by the Dutch railway company Nederlandse Spoorwegen (NS) as well as in Switzerland by the Swiss railway company Schweizerische Bundesbahnen (SBB), both together with other PT providers to ensure a network-wide realisation across modes.

The Netherlands

The Netherlands have, in fact, been one of the first countries adopting nation-wide pulse timetabling. Due to a difficult situation with declining perspectives for train traffic, the project “Spoorslag ‘70” has been implemented. The initial situation in the 1970s was marked by a losing position of rail PT compared to cars. Even its existence was in question due to declining demand. Actually, network effects led to a vicious circle: One connection usually brings passengers to other connections. When an unprofitable line is closed, fewer passengers are getting to the remaining lines resulting in less profitability of the whole system. Hence, a major shift in thinking was necessary: In order to compete with cars, the whole PT system had to be seen as a cohesive/connected system where different PT companies and modes must not be seen as competing with each other. Instead of

24 Information provided by PP 3 (HIE-RO)

competing with bus lines, for instance, the Dutch train company (NS) changed its ideology to become a leader of coordination and promotion of a large interconnected PT system of both train and bus lines.

The NS therefore significantly improved its system's capacity by e.g. raising train capacity by 40 % and re-designing the time table to make PT journeys with interchanges faster / more efficient and to increase the network's sphere of influence by e.g.:

- Creating regular departures at fixed times in certain intervals
- Improving connections with junction services
- Creating a timetable that works the same in the outward direction as in the reverse direction (symmetrical timetable)
- Investing in necessary infrastructure
- Introducing frequent urban-rural slow trains
- Establishing a new network of intercity services
- Separation between "stop trains" and intercity trains (two-train system)
- Gaining back the project's costs through a better efficiency and demand growth (Infrasite.nl n.d.)

Switzerland

According to Petersen (2016: 176), the pulse timetable principle has been optimised by means of the "Rail 2000" project by Switzerland which currently has "Western Europe's highest number of public transport trips per capita". The Swiss created a nation-wide pulse system extending even into remote rural villages to reduce car use and provide high-quality public transport in rural and urban areas. The rail network represents the core of the pulse time table as Petersen (2016: 178) notes:

> *"Hourly or half-hourly long distance trains come together (or 'pulse') on the hour and half-hour at the network's hub stations of Zurich, Basel, and Bern. A similar approach is applied at designated pulse points on local and regional rail networks throughout the country: buses and trains arrive before the pulse time, wait a short time to allow passengers to change between services, and then depart. The pattern repeats every hour (or half hour), and as a result, trains also depart all intermediate stations at repeated times every hour".*

Petersen (2016: 177) furthermore mentions that "rather than focusing on speed for its own sake, infrastructure upgrades were focused on speeding up trains to meet 'the pulse', which was reflected in the Rail 2000 slogan: "not as fast as possible, but as quick as necessary".

This kind of scheduling practice may also suit to any other public transport system where infrastructures can be adjusted to meet symmetrical pulse speeds. Besides national level implementations in e.g. Netherlands and Switzerland, it is widely-spread on regional or local levels.

Further information on the integrated interval timetable can be found in different sources, such as:

The Netherlands: http://www.infrasite.nl/definitions/definition.php?ID_content=936

Switzerland: see Petersen (2016)

5.7 Suburban communication in Dywity Municipality [25]

Especially in autumn and winter waiting times seem to be a major concern for public transport users since standing in bad weather conditions for longer periods of time can turn into unpleasant experiences, particularly when it is not expected during delays of e.g. suburban buses.

The associated partner (AP) Warmian-Masurian Voivodeship has therefore suggested the urban-rural bus system of Dywity Municipality and Olsztyn Municipality targeting suburban transport users and public transport operators as a good-practice solution.

There is a new PT network of six bus lines providing urban-rural linkages within the area of both municipalities. Starting in 2017, Dywity, as one of the first rural municipalities in Poland, implemented a fully integrated tariff with the public transport of Olsztyn in combination with a dynamic passenger information system for both online and mobile use. The buses were therefore equipped with information boards and on-board computers enabling the user to track the location and its timeliness of every bus of the municipal lines online, via both stationary as well as mobile web access.

An innovative feature is the "Telebus"- ("Bus on phone"-) option: outside peak hours, passengers can order transport by bus up to 60 min in advance without any additional fees compared to the regular PT tariff.

Both, the Telebus as well as the online tracking have proven to enhance convenience of using public transport leading to higher numbers of PT usage since, through enhanced information, waiting times can be reduced and journeys can be better planned. The new municipal bus lines furthermore strengthened the PT network between the municipalities and the surrounding urban-rural area, by providing a larger network, a more flexible ticketing system, reducing costs as well as by improving service frequency.

Further information on the Suburban communication in Dywity Municipality can be found on the official web pages:

http://gminadywity.pl/aktualnosci/1389 (in Polish) and

http://www.sip.zdzit.olsztyn.eu/Default.aspx?lang=EN

25 Information provided by Associated partner (AP) Warmian-Masurian Voivodeship

5.8 Improving the sustainable mobility of the Elbląg's citizens[26]

As another good practice in public transport, the associated partner Warmian-Masurian Voivodeship suggests the improved PT system of the Elbląg County that is being planned and implemented from 2013-2020. New, innovative elements comprise a ticketing and information system as well as infrastructural updates to improve the transport connections along area of the municipality.

The new ticketing system is represented by the introduction of the Municpal Card, a contactless card functioning as an electronic wallet being able to carry single-use, season as well as parking tickets. Key components of the new information system are new information LCD and LED boards informing PT users at railway stations and tram stops and tracking technology allowing new possibilities for city transport management and localisation. This is complemented by a free-of-charge smart-phone application providing information on e.g. road works, incidents, traffic jams and information regarding the weather and public communication.

Infrastructure-wise new stops have been built and some intersections have been equipped with information technology to give priority to the vehicles of public transport. To promote park & ride and bike & ride usage, new parking areas have been constructed. In addition, the rolling stock has been complemented with the purchases of three new trams.

A main obstacle during this project was perceived within the difficulty to access necessary financial sources. After implementing these changes, however, the usage of PT by city as well as suburban residents has increased, meaning a reversal of the previous negative trend of the number of citizens using public transportation.

Further information in Polish on Elbląg's Municipal Card can be found here:

http://www.zkm.elblag.com.pl/ekm.html (municipal card) and here:

http://www.elblag.eu/index.php/mieszkancy/11621-ostrzegator-czyli-wiemy-wiecej-i-szybciej

(smartphone application)

26 Information provided by AP Warmian-Masurian Voivodeship

5.9 Modernisation and development of an integrated PT system (Olsztyn Municipality)[27]

To modernise its public transport system, the Olsztyn Municipality has run a project from 2007 until 2015. Major changes included the areas of intervention of urban-rural linkages, ticketing and information systems. Therefore, the project served as a starting point to create a major intermodal hub at the existing main train station in Olsztyn providing possibilities to interchange between different modes of public transport, such as urban and suburban transport, regional and interregional trains as well as the rail-bus connection to the Olsztyn-Mazury Airport.

Regarding ticketing, the system has been simplified with fewer tickets, an extended geographic area of validity (for the whole city PT network) and the introduction of the city card usable for season and single-ride tickets as well as parking tickets.

The new information system that has been set-up is suitable for both online and mobile use providing dynamic passengers information for the user on location, timeliness of PT vehicles, ticketing and weather. Implemented information technology furthermore provides intelligent transport management solutions including subsystems for bus and tram management, traffic monitoring and ticket selling.

A key component of infrastructural measurements is the reintroduction of tram traffic in Olsztyn. This includes accompanying activities such as major changes in the bus line schedule and the construction of new PT stops as well as separate bus lanes resulting in a new PT network of 3 tram and 35 bus lines.

To promote PT, a communication strategy has been implemented to convince the residents to choose public transport (particularly the new trams) and to accept trips with interchanges since direct connections are not always possible. In fact, according to a user survey in 2017 the public transport user's satisfaction is on a high level (over 70 % consider PT as good or very good and only 4 % are not satisfied).

This project has also set a path for the following two follow-up projects:

- "Public transport development in Olsztyn – Eco Trip Chaining" in order to continue the creation of the intermodal hub and to establish road system changings
- "Public transport development in Olsztyn – Tram network" to further develop the tram network to purchase new trams and to foster further ITS development

Further information (in Polish) on the project can be found on the official web page:

http://www.tramwaje.olsztyn.eu

27 Information provided by AP Warmian-Masurian Voivodeship

5.10 Methods for accelerated transition to sustainable energy \ and transport [28]

Referring to transport policies (reducing demand for transport, promoting modal shifts) and green / low carbon transport (improved vehicles and fuels), the BTH (Blekinge Tekniska Högskola - Blekinge Institute of Technology) with its SustainTrans research team has "developed a simulation-supported method to mobilise stakeholders around accelerated transition to sustainable transport and energy systems", as a researcher of BTH (Ny 2017) states. He specifies that this is a new method "based on several years of research and practical demonstrations". The origin comes to a large degree from one of Sweden's largest electro mobility projects called GreenCharge that was set at the local and regional levels in Southeast Sweden from 2011 to 2015 (see www.greencharge.se). Still, the resulting method is considered generic enough to be used also at national and European levels.

The method is based on a framework for strategic sustainable development (FSSD) that revolves around an overarching strategic procedure that should be applied to the sector of study (in the GreenCharge case, personal transport was in focus):

Vision. Defining a common sustainability vision with key stakeholders within the sector of study

Current Reality. Identify current strengths and weaknesses in relation to the vision

Solutions. Identify potential solutions to bridge the gap between current reality and vision

Scenarios and Roadmaps. Use computer simulation and scenario analysis to combine the potential solutions into affordable pathways to bridge the gap between current reality and vision" (Ny 2017)

The research project to develop the method has been carried out from 2011 until 2017 and it is addressed to politicians, decision makers and (PT-) planners in public and private organisations from national, regional or municipal levels.

The aims of this method include helping stakeholders to transform energy and transportation systems into environmentally more sustainable versions and to test this approach in Southern Sweden within the Greencharge project where e.g. electric vehicles and charging stations have been tested.

Obstacles identified during the project are, on the one hand, the complexity of transforming a whole sector to green technologies, regarding both identifying challenges and potential solutions; on the other hand, identifying and mobilising all relevant stakeholders needed for bottom-up movements similar to this project required a lot of time and effort. It has, in fact, turned out to be very helpful for the project's success to form alliances with key stakeholders early on, which were able to mobilise the other relevant partners. Further success factors were e.g. the broad, strategic perspective on sustainability through the FSSD, a focus beyond cities on smaller towns and regions.

Further information on the work of the SustainTrans team can be found on their official web page:

www.bth.se/sustaintrans

28 Information provided by PP 7 (BTH)

5.11 Macroregional Transport Action Plan by TransBaltic [29]

The Macroregional Transport Action Plan (MTAP) is suggested by BTH to serve as a good practice of a strategic planning document. It has firstly been released in 2012 and an updated version was published in 2014 by the TransBaltic, a project of the Interreg BSR Programme. The action plan "attempts to facilitate the development of a sustainable multimodal transport system in the Baltic Sea Region by setting a vision for such a system in the year 2030, proposing an optimum scenario (path) to achieve it and laying down several so-called policy actions, instrumental in following this path" (TTÜ 2012).

The path considered by the MTAP to best suit the BSR-specific conditions regarding demography, economy, geography and general (EU) transport and environment policy is named green scenario. The core message and instrument of this scenario to create economic growth and strengthen European cohesion is to establish "a network of green and efficient multimodal transport corridors, which shall connect, cross and integrate different parts of the Region's territory" (TransBaltic 2012: 4). These green links are viewed as necessary to boost trade with EU members as well as the Far East and to tackle the BSR's main challenge: its remoteness.

The key policy messages as stated in the MTAP (TransBaltic 2012: 12-13) are therefore:

- "Apply a place-based approach to the transport policies"
- "Create efficient interfaces between the national transport networks"
- "Strengthen the role of the BSR as a transport gateway area"
- "Pursue a network of green and efficient multimodal transport corridors"
- "Establish sufficient multilevel governance mechanisms"
- "Apply an incremental, need-based approach to infrastructure investments".

The MTAP has been considered to be innovative since it also addresses the fact of fragmented developments of national and regional transport policies across borders lacking macro-regional perspectives. The plan furthermore represents a policy support instrument being future-oriented and pro-active: Unlike other policy documents, the MTAP is not only created from a pure public authority oriented perspective. Rather than being exclusively theoretical it is based on specific research and demonstration efforts by TransBaltic and its partners.

During the MTAP development, obstacles were often perceived regarding e.g. low commitment and readiness of public and national transport authorities or lacking multi-level governance instruments to fully implement policy actions, and different planning horizons particularly between long-term oriented public and short-term oriented private actors.

The project was successful in employing macro-regional thinking in reference to transport on local and regional level. However, the partly low involvement on national level made it necessary to design a follow-up project in order to promote the use of multi-level governance schemes at different levels for harmonising transport policies.

On the contrary, described success factors were a strong focus of national authorities on the outcomes of Interreg projects, organisational capacity and memory regarding the appliance of project results as well as communication and leadership between the involved stakeholders.

The official web site www.transbaltic.eu is no longer in operation. Further information on TransBaltic can e.g. be found via http://eu.baltic.net on http://eu.baltic.net/Project_Database.5308.html?&&contentid=27&contentaction=single

29 Information provided by PP 7 (BTH)

6. Conclusions on projects and good practices

6.1 Urban-rural linkages

Almost all described good practices / projects directly or indirectly address urban-rural linkages. Particularly five of the described cases have been identified to have urban-rural linkages in their main focus. For instance, the VVW (Verkehrsverbund Warnow, Rostock / Germany) represents a single association for PT planning and development integrating the main local and regional public transport providers in Rostock and its surrounding district. Its main aim is to optimise and coordinate the entire PT network in its area of operation and creating uniform conditions of transport with coordinated timetables, network connections and tariffs. The VVW could thus be a best-practice example for urban-rural areas with rather inefficient PT systems characterised by fragmented structures.

The utilisation of an integrated regular interval timetable can further promote the integration of urban-rural PT by harmonising the timetables of different modes and making transfers between them easier at certain node stations where different PT services meet at repeated times. In fact, due to the coordination of different time-tables, this practice could help to form a single and stronger PT network instead of having different modes that compete with each other.

In terms of multi-modality, the Olsztyn Municipality has shown how a modern and integrated PT system can be developed by creating a major intermodal hub at the existing main train station in Olsztyn as a starting point for wider measurements. The new infrastructure provides possibilities to interchange between different modes of public transport, such as urban and suburban transport, regional and interregional trains as well as a rail-bus connection to an airport. Further solutions on how to better integrate multi-modal journeys have been provided by the past, 7th Framework Programme, "Interconnect" project in 2011. The output has been a tool-kit of over 90 proposals in particular with regard to the interconnectivity between long- and short-distance PT services.

6.2 Cross-border solutions

In general it can be noted that, because of its multi-national nature, all described EU-projects offer a cross-border perspective. For example, the Baltic Adriatic Transport Cooperation (BATco) has helped to promote the Baltic-Adriatic Axis as a transport corridor on the European Continent spanning North-South connecting the Baltic and the Adriatic Seas by effectively managing the logistics potential along the transport axis linking e.g. Italian with Polish ports via Austria, Czech Republic and Slovakia. Another axis example has been described with the Bothnian Green Logistic Corridor (BGLC) - project, which aimed at integrating and further developing traffic infrastructure and connections linking northern Scandinavia to European networks. A key element developed by the project was the "green railway corridors"-campaign, to manage passenger and cargo rail transport on cross-border, national, and regional/local scale (EUBSR 2018 b).

The TransBaltic project has also been dealing with the integration of transport systems in the Baltic Sea Region addressing the lack of cross-border orientation within national transport solutions and freight volumes. Due to incompatibility of different national systems and logistic patterns, existing transport networks were considered to be inefficient internationally representing a major barrier for economic growth in the BSR. A major output has thus been the Macroregional Transport Action Plan by TransBaltic that aimed at bringing a stronger cross-border perspective into PT planning and development.

A better synchronisation between countries was also targeted by the NSB CoRe project (North Sea Baltic Connector of Regions) by integrating the viewpoints of transport operators and ITS solutions into passenger transport development on a transnational level and by complementing policy making with a transnational perspective of spatial planning. Recommendations were e.g. to connect second level nodes and access routes to core network connections (CNC) to improve the accessibility of cross-border areas as well as to strengthen the role of urban nodes as service points between remote areas and the CNC.

With regard to making cross-border journeys more attractive and sustainable, the INTERFACE and INTERFACE Plus projects aimed at influencing the implementation of PT services by e.g. revitalising cross-border, environmentally friendly and car-free passenger traffic through recommending minimum quality standards for certain ports, terminals and services to close gaps between cities and its ports by improving intermodal PT, as well as by implementing cross-border passenger information systems.

6.3 Ticketing

The described good practices of ticketing have mainly covered 4 broader topics: cheaper or even free of charge public transport, smart ticketing and the unification of tariffs. The introduction of Vienna's low-cost annual season ticket – accompanied by infrastructural measurements such as network expansion – has helped to significantly increase the usage of public transport over traveling by car. The price of € 365 per year has made the successful campaigning of "traveling at just € 1 per day" possible. The costs of reducing the price have – at least partly – been covered by a much higher number of PT users purchasing this ticket.

A further step has been made by Tallinn by creating a free public transport of its city residents. Financially this has turned out to be a success since the intended stimulation of many new residents registering in Tallinn took place to sufficiently outweigh the free-PT costs by receiving higher revenue in taxes.

Regarding the unification of different ticket systems the Verkehrsverbund Warnow (VVW) provides a good practice from an organisational point of view. The VVW represents an umbrella organisation of the 5 main local and regional public transport providers in Rostock and its surrounding district. It has helped to create uniform conditions of transport with coordinated timetables, network connections and tariffs. The single-ticket system is valid for all different modes of public transport in its area of operation. The VVW's costs for its office, staff and joint marketing activities are shared among its participating companies. The VVW also takes part in operating the InterCombi-Ticket, a cross border ticket between Rostock (Germany) and Nykøbing Falster (Denmark) valid across different modes in Rostock (tram, bus and city train), the ferry over the Baltic Sea and the bus between Gedser and Nykøbing Falster.

In the Netherlands one of Europe's largest smart ticketing projects has been carried out providing PT users with a unique chip card valid as an electronic payment method across different modes (e.g. buses, trams, metros, ferries and trains) throughout the country. Advantages include high user acceptance, the easiness of use and the accuracy of calculating correct distance prices since the beginning and end of journeys are registered by check-in and out actions. As a nation-wide multi-modal smart card ticketing system this appears to be a unique best-practice for other nations. Smart-card systems on smaller local (city)/regional level are already wide-spread throughout Europe and elsewhere and have proven to be successful and transferable. For example, as suggested by the Warmian-Masurian Voivodeship, Elbląg's PT users can benefit from using the Municipal Card, a contactless smart card functioning as an electronic wallet being able to carry single-use, season as well as parking tickets.

6.4 Information System

An example from Dywity Municipality shows how an information system can reduce waiting times and increase predictability and convenience of using public transport leading to higher numbers of PT use. Together with the public transport of Olsztyn a dynamic passenger information system for both online and mobile use has been implemented. The buses are equipped with information boards and on-board GPS-based computing technology enabling the user to track location and timeliness of every bus for both online and mobile use. Implemented information technology furthermore provides intelligent transport management solutions including subsystems for bus and tram management in Olsztyn, traffic monitoring and ticket selling.

A similar information system can be found in Elbląg. Its key components are information LCD and LED boards, informing PT users at railway stations and tram stops, and tracking technology allowing new possibilities for city transport management and localisation. The correspondent smart-phone application also provides information on e.g. road works, incidents, traffic jams and information regarding the weather and public communication.

The projects INTERFACE and INTERFACE Plus even resulted in the implementation of the first real-time cross-border information system within the Baltic Sea Region in 2015 providing passengers with PT information on schedules, transfers and delays via screens at bus stops, train stations and ferry terminals. And particularly for foot-passengers on ferries in the South Baltic the online information portal *www.portlink.eu* has been established. It allows people to gather information in public transport within

6.5 Renewable Energy

Renewable energy in reference to public transport has been addressed by making transport more sustainable, i.e. by changing from a fossil fuel based system towards a renewable energy powered system without its current air-polluting emissions.

The “Methods for accelerated transition to sustainable energy and transport”, suggested by project partner BTH, provide a theoretical framework on how to mobilise stakeholders to act in favour of an accelerated transition to sustainable transport and energy systems. It consists of 4 major elements: defining a vision with key stakeholders, identifying the current reality, identifying potential solutions and developing scenarios and roadmaps.

Fostering clean multimodal transport to increase connectivity and competitiveness of corridor regions while minimising negative environmental impact induced by transport was also a major focus in the Scandria2Act project. For that matter, the deployment of clean fuels represented a key element of the joint project approach.

On a more practical level, with pilot actions within 10 different cities, the EU flagship project ZeEUS (The Zero Emission Urban Bus System) became one of the most important European projects focusing on the transition to electric buses. The project aimed at testing busses using electric propulsion by implementing live demonstrations in real-life urban bus systems. It was intended to show the economic, environmental and societal feasibility and benefits of adopting electric buses to users, public transport operators as well as public authorities; whilst relating to the European Commission’s target to create competitive and sustainable transport systems.

6.6 Other main topics addressed

Other main topics addressed by the suggested good practices and projects included e.g. infrastructure and technical facilities, behavioural aspects, organisation and management as well as cycling.

Infrastructure and technical facilities

The importance of infrastructure has for instance been highlighted by the good practice of the integrated regular interval timetable. In order to allow certain departure as well as arrival times, trains have to reach certain speeds. To form a proper network across modes and for convenient transfer the vehicles have to also meet at certain node stations at defined intervals. These measures are usually not possible without infrastructural adaptations since investments in e.g. new stations, transport routes and the fleet can be necessary for meaningful time-table changes.

An example for the creation a major intermodal hub has been provided by Olsztyn where the existing main train station in Olsztyn has been modernised to improve interchanges between different modes of public transport, such as urban and suburban transport, regional and interregional trains as well as the rail-bus connection to the city's Airport.

Intermodal cross-border journeys have also been improved by infrastructural modernisation as the outcomes of the INTERFACE and INTERFACE Plus projects show: Adjusted bus stations in combination with new or reconstructed ferry terminals have made the necessary changes between modes for cross-border travels more convenient for foot-passengers.

Behavioural aspects

Influencing behavioural aspects can be a crucial point in stimulating user acceptance of public transport solutions. For instance, Vienna provided, with its € 365 annual ticket, a possibility to campaign with a price of € 1 per day for unlimited usage of public transport. This is very low cost compared to similar Western-European cities and, as user numbers show, widely accepted by the population of Vienna.

The integrated regular interval timetable represents a basis for easier and better planning with reduced waiting times. For example, departures at fixed times each weekdays and at fixed intervals with timely coordinated interchange possibilities can make looks at time tables obsolete as soon as the constant interval patterns are remembered.

Another example making PT use easier throughout a country has been the Dutch public transport chip card providing the citizens of the whole Netherlands with a simple ticket payment possibility valid across different modes in all regions.

Organisation and management

An organisational measure to unite a fragmented and rather complicated urban-rural PT system has been described by Verkehrsverbund Warnow (VVW) in Rostock / Germany. This is a traffic association forming an umbrella organisation of 5 different local-regional PT service providers. The VVW represents a single organisation responsible for organising the PT offer as well as for administering the single tariff scheme.

Regarding the timely organisation of PT offers, the implementation of an integrated regular interval timetable can represent an efficient way to better connect one PT offer with another and, thus, to reduce overall travel times and to literally expand the network with different modes complementing each other rather than competing.

A traffic management system was introduced by means of the TRISTAR project for the benefit of users and operators of (public) transport and public authorities. Within the Tri-city of Gdynia, Sopot and Gdańsk, major signalling infrastructure was upgraded and linked to telecommunication systems to enable operation of two new cooperating traffic management and control centres in Gdynia and Gdańsk. Their tasks include prioritisation of PT vehicles, detection of traffic incidents, safety management, provision of parking information, video surveillance, traffic volume measurement and meteorological monitoring. Variable signs for drivers and PT users helped to provide dynamic information and about 150 traffic lights were controlled by the management centre to optimise traffic flows. In fact, since TRISTAR average travel times of public transport as well as individual transport travel times have been reduced.

Cycling

Although not in the main focus of INTERCONNECT, projects on cycling have been suggested three times to serve as a good practice. The project partners of ABC.multimodal intended to raise the importance of cycling in urban transport by better integrating cycling into multimodal transport systems and mobility culture. It was planned to develop methods that will effectively change the thinking of local politicians, road managers and residents by promoting cycling in the areas of urban planning and traffic management as well as by the creation of an exemplary master plan.

A similar topic, but rather focussed on electric mobility, has been addressed by the ELMOS (Electric Mobility in smaller Cities) project that aimed at integrating electric bicycles into multi-modal PT systems.

CoBiUM (Cargo bikes in urban mobility) was a project with the ambition to change the fossil-fuel based urban transport towards an environmentally more sustainable alternative by supporting cargo bicycles. Its project partners sought to communicate and campaign in favour of cargo bikes to increase awareness of its potentials, knowledge and use among various target groups.

Acknowledgements

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Attachment 1: Policy review template

INTER CONNECT

One ticket to the future

Activity 3.1: Policy review template

Please describe a relevant policy (from a local/regional/national/international policy document) on public transport affecting your geographical area. Please use one template per policy.

	Topic	Description
1	**Filled in by**	Name of contact person who filled in this survey
2	**Organisation**	Contact person's organisation
3	**Contact details**	Contact person's email and phone number
4	**Title / Name of policy document**[1]	Please state the document's title / name
5	**Level of intervention**	Indicate whether the policy is designed to have an effect on **international / national / regional / metropolitan / local or other level**. Please specify i.e. by also naming the region.
6	**Area of intervention**	Please describe the policy regarding regional and cross-border PT in detail and specify its relevance with the following **areas of intervention**: • Urban-rural linkages • Cross-border solutions • Ticketing • Information system • Renewable Energy • Other – Please specify!
7	**Type of issue / addressed problem**	Please mark the type of problems / issues from the category below addressed by the policy with regards to public transport: • Infrastructure and technical facilities • Behavioural aspects, • Business models, • Organisation structures, • Managerial schemes, • Policy/financial incentives • Other - Please specify! Please specify/describe the problem addressed by the policy and give some facts, figures on the initial situation.
8	**Responsible institutions / Partners**	Please name the responsible institution (and if existing, institutions/partners involved in the implementation).

[1] A Policy document can be i.e. a legal document, a strategy, program, action plan, white papers, etc.

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9	**Objectives and targets**	Please describe the main objectives of the policy and if relevant also the targets to be reached (e.g. desired share of public transport users).
10	**Target group(s)**	Please indicate the target group(s) affected by the policy, i.e. (a) Users, (b) Public transport operators (e.g. ferry lines), (c) Employers, (d) Public authorities in the partner areas (e) Other – Please specify!
11	**Main actions**	Please name and briefly describe the main actions (activities) towards the implementation of the policy.
12	**Publication date/ Time frame**	• Please state the publication date of the policy document if applicable. • Please indicate the time period covered by the policy and describe its current status (e.g. prepared, adopted, in the implementation, completed).
13	**Main outputs and outcomes from the implementation**	Please briefly describe the main results achieved (What has been changed?).
14	**Source of financing and amount of dedicated fund**	Please indicate the source of financing and the amount of funds dedicated for the implementation (if existing / relevant).
15	**Online reference**	Please copy the internet link of the online version of the policy, if applicable.

Please send the completed document(s) back to marco.mazouzi@hie-ro.de by **31st January 2018**.

Attachment 2: Good practice & project description template

INTER CONNECT

One ticket to the future

Activity 3.1: Good practice & project description template

Please use this template to either describe:

- A **good practice** of regional or cross-border public transport in your geographical area
- A **good practice** of regional or cross-border public transport elsewhere in your country or Europe if it is relevant for the project, or
- A **past project** on public transport in the South Baltic or other Interreg program areas with a focus on practical results and lessons learned.

Please use one template per good practice / project.

What is a good practice?

Within the context of Interconnect a good practice (GP) is considered to be a technological or non-technological solution, process, method or policy of regional and/or cross-border public transport (PT) in the project partner's area or elsewhere in Europe that has been successfully implemented, tested and proven to:

1. Enhance attractiveness of PT for one or more of the following target groups of e.g.:
   - Users,
   - Commercial operators (e.g. ferry lines),
   - Employers,
   - Public authorities in the partner areas
2. Be successful within the following context / area of intervention of e.g.:
   - Urban-rural linkages
   - Cross-border solutions
   - Ticketing
   - Information system
   - Renewable Energy
3. Be focussed on e.g. :
   - Cooperation schemes,
   - Organisational models and
   - Specific services

1	**Filled in by**	Name of contact person who filled in this survey
2	**Organisation**	Contact person's organisation
3	**Contact details**	Contact person's email and phone number
4	**Title / Name**	Please state the title / project name that describes the good practice / project best
5	**Area of intervention**	Please specify its relevance of the good practice to the following **areas of intervention**: • Urban-rural linkages • Cross-border solutions • Ticketing • Information system • Renewable Energy • Other – Please specify!

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6	**Aspects covered**	Please describe the good practice / project regarding regional and cross-border PT in detail with regard to the following aspects addressed : • Infrastructure and technical facilities • Behavioural aspects, • Business models, • Organisation structures, • Managerial schemes, • Policy/financial incentives • Other - Please specify! Please give some facts / figures on the initial situation and the desired outcomes, if relevant.
7	**Area covered**	Please name the geographical area covered by the good practice / project and/or indicate on which level the good practice / project has an effect: **international / national / regional / metropolitan / local or other level**.
8	**Partner(s)**	Please highlight the responsible partners and name all other partners involved in the implementation.
9	**Target group(s)**	Please indicate the target group(s) affected by the good practice / project, i.e. (a) Users, (b) Public transport operators (e.g. ferry lines), (c) Employers, (d) Public authorities in the partner areas, (e) Other – Please specify!
10	**Main activities**	Please name and briefly describe the main activities (What and how has been done?).
11	**Time frame**	Please indicate the beginning/end of the good practice / project and describe its current status, if applicable.
12	**Main outputs and outcomes from the implementation**	Please describe the main outputs and outcomes achieved (What has been changed?). If applicable, also highlight **lessons learned and major obstacles**.
13	**Transferability**	Has the solution of this good practice / project been adopted elsewhere? Please describe from your point of view, if a further implementation of this good practice / project in other regions can be beneficial.
14	**Source of financing and amount of**	Please indicate the source of financing and the amount of funds dedicated for the implementation (if existing / relevant).

	dedicated fund	
15	**Online reference**	Please copy the internet link of the online version of the good practice / project, if applicable.

Please send the completed document(s) back to marco.mazouzi@hie-ro.de by **16th February 2018**.

/ Partners

/ Associated partners

/ Further contacts

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