

National Strategy for Sea and Inland Ports 2015



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Glossary of abbreviations

€	Euros
ASEAN	Association of Southeast Asian Nations
CDU	Christian Democratic Union
CEF	Connecting Europe Facility
CML	Fraunhofer Center for Maritime Logistics
CO ₂	Carbon dioxide
CSU	Christian Social Union
DB Netz AG	Deutsche Bahn Netz AG (railway infrastructure manager)
dB(A)	A-weighted decibels (sounds as perceived by the human ear)
DESTATIS	German Federal Statistical Office
EC	European Community
ECA	Emission Control Area
ECJ	European Court of Justice
EEDI	Energy Efficiency Design Index
EMSA	European Maritime Safety Agency
ESI	Environmental Ship Index
ESPAS	European Strategy and Policy Analysis System
ETCS	European Train Control System
EU	European Union
EUROGATE	Terminal operator in Bremerhaven, Hamburg, Wilhelmshaven et al.
EUROSTAT	Statistical Office of the European Union
FTIP	Federal Transport Infrastructure Plan
GAK	Joint Federal Government/Federal State Task for the Improvement of Agricultural Structures and Coastal Protection
GBER	General Block Exemption Regulation
GT	Gross tonnage
GW	Gigawatts
HGV	Heavy goods vehicle
HB	Hanseatic City of Bremen
HELCOM	Helsinki Commission, intergovernmental commission working for marine environmental protection in Baltic Sea Region
HH	Hanseatic City of Hamburg
ICS	Industrial control systems
IFF	Fraunhofer Institute for Factory Operation and Automation

IHS	Global market information and research company
IMO	International Maritime Organization
ISETEC	Innovative Seaport Technologies Research Programme
ISPS	International Ship and Port Facility Security (Code)
IT	Information technology
km	Kilometre
KRITIS	National Strategy for the Protection of Critical Infrastructures
kWh	Kilowatt-hour
LAG	Logistics Alliance Germany
LNG	Liquefied Natural Gas
MARPOL	International Convention for the Prevention of Pollution from Ships
Mbit/s	Megabits per second
MCN	Northern German Maritime Cluster
MEPC	Marine Environment Protection Committee (of the International Maritime Organization)
MSFD	Marine Strategy Framework Directive
MW	Megawatts
MWh	Megawatt-hour
MWP	Management & Logistic Consulting (company)
NECA	NO _x Emission Control Area
NO _x	Nitrogen oxides
NPSI	National Plan for the Protection of Information Structures
OECD	Organization for Economic Cooperation and Development:
p.	Page
p.a.	Per annum
PM	Particulate matter
PPP	Public-private partnership
RORO	Roll-On/Roll-Off
SECA	Sulphur Emission Control Area
SEEMP	Ship Energy Efficiency Management Plan
SOLAS	Safety of Life at Sea (International Maritime Organization Convention)
SO _x	Sulphur oxide
SPC	Short Sea Shipping Inland Waterway Promotion Center
SPD	Social Democratic Party of Germany
T	Tonnes

TEN	Trans-European networks
TEN-T	Trans-European Transport Network
TEU	Twenty feet equivalent unit
TTIP	Transatlantic Trade and Investment Partnership
UP-KRITIS	Initiative for cooperation between the private and public sectors for the protection of critical infrastructures
WFD	Water Framework Directive
WPCI	World Ports Climate Initiative
WS 21	Division at the Federal Ministry of Transport and Digital Infrastructure: National Maritime Shipping and Inland Waterway Transport Policy; Ports Sector
ZARA	(Ports of) Zeebrugge, Amsterdam, Rotterdam and Antwerp

Introduction

The German sea and inland ports are among the best terminals in the world. As logistics service providers and engines of growth, they are of outstanding importance for the whole economy. Without the services provided by the ports, Germany's role as one of the leading exporting nation nations in the world would not be possible. Almost every sector of the economy is reliant on properly functioning ports and well developed infrastructures.

The ports connect German enterprises to the global markets, safeguard Germany's position as a production site, provide low-cost services for German enterprises and are an advertisement for German competitiveness in the global economy.¹ Almost one quarter of Germany's total external trade is handled by the German seaports. With the major all-purpose ports in Hamburg and Bremen/Bremerhaven, the special-purpose ports in Lower Saxony, the ferry ports on the Baltic Sea and many ports that occupy niches, the German ports sector offers a broad spectrum of logistics services.

The German inland ports ensure that the population is supplied with basic goods such as food, energy, construction materials and fuels. From the inland ports, urgently required raw materials are transported to the downstream processing companies throughout Germany. These materials are used to manufacture new products for national and international trade. Likewise, it is here that the finished products from the worldwide commodity flows start their journey to the final consumer. Moreover, inland ports provide thousands of jobs at their sites and act as engines for the economic development of entire regions.

As strategic guidance of the Federal Government, the 2009 National Ports Strategy has contributed to the success of the German sea and inland ports by providing all stakeholders with a reliable basis for political and economic action. The Federal Government, federal states, ports sector and trade associations joined forces to implement it, thereby further improving the competitiveness of the ports. Most of the individual measures of the 2009 National Ports Strategy which were a Federal Government responsibility have already been implemented or launched in such a way that complete implementation is likely. Most of the measures for which the federal states and the ports sector were responsible have likewise been implemented. The 2009 National Ports Strategy was a resounding success, as is also reflected

¹ North German Chamber of Industry and Commerce: *Die nationale Bedeutung der Seehäfen*, 2009, p. 1.

by the outstanding position currently enjoyed by the German ports in international and European competition.

However, the German sea and inland ports face new challenges that make it necessary to evolve the National Ports Strategy. These include, but are not limited to:

- a great need for maintenance and upgrading of the transport and port infrastructures as well as new requirements to be met by the superstructures;
- fiercer international and European competition between ports;
- new EU initiatives in the ports sector;
- the need for port infrastructures for offshore wind energy;
- technological developments (including automation of cargo handling, use of IT);
- environmental protection and climate change mitigation;
- a need for infrastructures for alternative fuels and alternative energy;
- security and safety, especially in the field of cybersecurity;
- demographic change.

To ensure that the Federal Government, the federal states and the ports and logistics sectors can continue to be able to join forces to tackle these challenges, the Coalition Agreement for the ongoing 18th parliamentary term states that the National Ports Strategy is to be evolved. The federal states, the ports and logistics sectors and the trade unions have expressed their commitment to this evolution and have been intensively involved in the development of the present National Ports Strategy. The outcome is new strategic guidance for the ports policy of the years ahead, so that the German ports can continue to perform their function as hubs of national and international trade, centres for logistics activities and industrial sites at the highest level possible. The entire national economy of Germany will benefit from this.

The 2015 National Ports Strategy is divided into an analytical part and a part containing the individual measures. The analytical part first identifies the challenges and opportunities presented to the German sea and inland ports as a result of the changes that have taken place since 2009 in the global economic and political environment. The global economic crisis, whose impact can still be felt in Europe, and geo-political tension are having a significant influence on the development of the sea and inland ports in Germany.

In the World Bank's 2014 analysis, Germany once again proved to be the best centre for logistics in the world. To ensure that our ports can continue to compete as successfully as in

the past, the seaward approaches, hinterland connections and inland waterways have to be upgraded and maintained as demand requires. At the same time, however, optimum use must be made of the inherent strengths of the different modes of transport. By linking up the modes of transport, the sea and inland ports and the logistics hubs to a greater extent, it will be possible to significantly enhance efficiency and make better use of the existing transport infrastructure. In this context, "linking-up" refers not only to the transport networks but also, in particular, to the digital infrastructure. Smoothly operating logistics chains increasingly require compatible and secure information technology systems (IT systems) of the parties involved in the logistics chain.

The globalized maritime sector is more subject than other sectors to international and European influences, both in terms of the markets and with regard to international and European regulations. This applies in particular to issues relating to environmental protection and climate change mitigation, the funding of port infrastructures and access to the market for ports services. In the sphere of European ports policy, as well as in other policy areas, the responsibilities of the Federal Government are constantly increasing, which means that it is necessary to consider whether the cooperation between the Federal Government and the federal states should be re-coordinated.

With their skilled workforce, entrepreneurial creativity and future-proof cargo handling facilities, the German ports are optimally placed in national and international competition. A change is taking place in the port working environment, accelerated by the technological developments of recent years. As in the past, employers and unions must continue to ensure good and safe jobs, appropriate pay, work-life balance and adequate initial and continuing training opportunities for women and men.

The issue of safety and security is assuming new significance, especially given that ports are becoming increasingly dependent on properly functioning IT. In the future, the protection of *critical infrastructures*² will have to take issues of cybersecurity into account to a greater extent.

² Critical infrastructures are organizations or installations of great significance to the body politic whose failure or impairment would result in sustained supply shortages, a significant disruption of public order or other dramatic consequences. Cf. Federal Ministry of the Interior: *Nationale Strategie zum Schutz Kritischer Infrastrukturen (KRITIS-Strategie)*, June 2009, p. 3.

With regard to the *challenges and opportunities* for the German sea and inland ports outlined earlier and identified in the following chapter, the second chapter develops the *objectives of the 2015 National Ports Strategy*. These objectives guide the measures for:

- the targeted upgrading of the port-related infrastructure;
- the improvement of the competitiveness of the sea and inland ports;
- international and European ports policy;
- environmental protection and climate change mitigation;
- good training and jobs;
- the ensuring of appropriate safety and security; and
- better cooperation between the Federal Government and the federal states in ports policy.

The 2009 National Ports Strategy would not have been so successful without the intensive cooperation between the Federal Government, the federal states, the ports sector, employers, trade unions and trade associations in its development and their commitment in its implementation. With the 2015 National Ports Strategy, this cooperation is to be continued and intensified.

The structures for implementing the 2015 National Ports Strategy will be more flexible than those of the 2009 Ports Strategy in order to improve the incorporation of the relevant stakeholders and carriers of knowledge into the implementation processes. A steering group, chaired by the appropriate permanent state secretary at the Federal Ministry of Transport and Digital Infrastructure, will be responsible for controlling implementation of the 2015 National Ports Strategy as the highest-level decision-making body. One state secretary or representative from the landlocked federal states, one from the federal states bordering the North Sea and one from the federal states bordering the Baltic Sea will be members of the steering group. In addition, the presidents of the major trade associations representing the ports, logistics operators and business will be represented in the steering group. This body is equivalent to the Advisory Council for Implementation of the 2009 National Ports Strategy.

The former Steering Committee for Implementation of the 2009 Ports Strategy is to be discontinued. In its place, thematic ad hoc working groups are to be established that will meet as required. The functions of the coordination units will continue to be performed by Division WS 21 at the Federal Ministry of Transport and Digital Infrastructure.

Challenges and Opportunities

Volatile growth of the global economy

In an exporting nation such as Germany, the sea and inland ports are highly dependent on developments in the global economy. Eco-political and geo-political crises have a direct impact on the volume of cargo handled by the ports. Conversely, growth in the global economy, especially within the triad (Europe, Asia, US) and its direct hinterland, results in a disproportionately high rate of growth in the volume of cargo handled by the sea and inland ports.

The markets are characterized by a higher level of volatility than before the economic crisis, as a result of which growth forecasts are clouded with great uncertainty. Compared with the 2009 National Ports Strategy, which forecast high and sustained growth in the global economy, the most recent forecasts covering the period to 2030 predict lower overall rates of growth. At around three percent over the past seven years, the pace of global growth is more than one percentage point below the 2000 to 2007 period.³ It stalled again in 2014, and the Institute for the World Economy believes that its dynamism will remain moderate for the time being.⁴

International trade is expanding at a very slow pace. The stimulating effects of the globalization of the 1990s and 2000s appear to have less of an impact today. The trend for the emerging economies to generate economic growth via the international trade in goods will diminish. Other reasons for the declining dynamism in world trade include the rising geo-political tensions, the low rate of investment worldwide and the protectionist measures to which some states have increasingly resorted since the start of the financial crisis.

It is the emerging economies that are continuing to provide the crucial impetus to the global economy. The People's Republic of China remains the largest driver of growth. India and the ASEAN⁵ countries are also considerably above the global average, with 5.4 and 4.6 percent respectively. On the other hand, Latin America and the Middle East are below the global average, with 2.0 and 3.1 percent respectively.⁶ The Hamburg Institute of International

³ Organization for Economic Cooperation and Development: *OECD Economic Outlook 2014*, November 2014, p. 7.

⁴ Institute for the World Economy: *Weltkonjunktur im Herbst 2014*, September 2014, p. 3.

⁵ ASEAN = Association of Southeast Asian Nations.

⁶ Germany Trade and Invest: Press release – *Wohin steuert die Weltwirtschaft in Zeiten globaler Konflikte?*, July 2014.

Economics and the OECD assume that, over the period 2030, the average annual rise in global gross domestic product will be 3.1 percent.⁷

The European ports were hard hit by the global economic crisis. The result was that the volume of cargo handled by the European ports fell to the 2005 level. In the meantime, however, the German ports have largely overcome the consequences of the global economic crisis and are back on course for growth. Since 2010, the German economy and thus, above all, German external trade have experienced a remarkable upturn with sharply rising exports and imports.⁸ Companies in the ports sector are looking ahead to the future with optimism, although they no longer expect the exorbitantly high growth rates from the pre-crisis era.

Challenges:

- Increasing volatility of the markets
- Overall, lower growth rate of the global economy
- Shortness of capital in emerging economies
- Geo-political tensions
- Slowdown of globalization effects
- Low rates of investment and protectionist measures taken by states in the context of the global economic crisis
- Rising oil prices in the long term

Opportunities:

- Long-term growth of the global economy

The profit prospects of the German ports are good, especially in trade with high-growth China and the US. Analysts at the Centre for European Policy Studies believe that the triad (Europe, Asia, US) will still be the strongest "poles" of the global economy in 2030.⁹ They do not anticipate significant changes in the balance of trade between Europe and the US, as the main economic variables are expected to develop along parallel lines. However, China will move

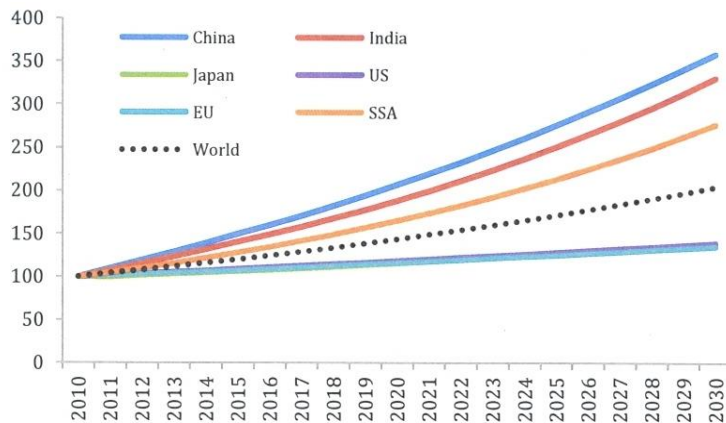
⁷ Hamburg Institute of International Economics: *Prognose der wirtschaftlichen Entwicklung bis 2030 in Bayern und Deutschland*, October 2013, p. 8. Organization for Economic Cooperation and Development: *Looking to 2060: Long-term Global Growth Prospects*, November 2012, p. 8. However, the long-term estimates by the OECD are shrouded in enormous uncertainty. The Centre for European Policy Studies even forecasts an annual growth rate of global gross domestic product of 3.7 percent over the period to 2030: Centre for European Policy Studies, for ESPAS: *The Global Economy in 2030: Trends and Strategies for Europe*, November 2013, p. 59.

⁸ Thus, after a slump of - 12.8 percent (2009), German exports in tonnes grew by 7.9 percent in 2010 and by around 3.6 percent in 2011. After a drop of around 11.2 percent in 2009, German imports in tonnes rose by 9.9 percent in 2010 and 3.9 percent in 2011. The pre-crisis figures have been achieved again. For 2014, the ports expect the volume of cargo handled to grow by 2 percent to a total of 302 million tonnes.

⁹ Centre for European Policy Studies, for ESPAS: *The Global Economy in 2030: Trends and Strategies for Europe*, November 2013, p. iv. The triad's share of international trade is around 70 to 75 percent, depending on the method of analysis.

from being the smallest to the largest partner in the triad.¹⁰ Even if its growth rates will no longer reach double-digit figures for the foreseeable future, China is likely to occupy first place in the world in 2030, both in terms of gross domestic product and as regards its external trade.

Figure 1: GDP growth compared, 2010-2030



Source: Centre for European Policy Studies; The Global Economy in 2030: Trends and Strategies for Europe, November 2013

The high rate of economic growth in China produces potential for growth by the German sea and inland ports, which can consolidate their strong competitive position in the North Range. There are already intensive contacts between German and Chinese seaports and port cities, which could be developed further.

Bremerhaven is becoming increasingly important for Asia. In terms of container handling at Bremerhaven, China has overtaken the US. Since 1992, the port of Wilhelmshaven has been twinned with Qindgao, a major industrial centre in China. Chinese companies are also increasingly focusing on the port of Duisburg, thanks to its outstanding logistics.

The Federal Government is supporting the intensification of Sino-German economic cooperation in the maritime sector. The *Joint Declaration between the Federal Ministry of Transport and Digital Infrastructure of the Federal Republic of Germany and the Ministry of Transport of the People's Republic of China on Cooperation in the Field of Maritime Shipping*, which was signed on 9 October 2014, provides, inter alia, for the promotion of cooperation with regard to the ports and for the expansion of logistics.¹¹ Intensification of

¹⁰ Ibid.

¹¹ Federal Ministry of Transport and Digital Infrastructure: *Joint Declaration between the Federal Ministry of Transport and Digital Infrastructure of the Federal Republic of Germany and the Ministry of Transport of the People's Republic of China on Cooperation in the Field of Maritime Shipping*, 2014, p. 2.

cooperation with China presents the German ports with good opportunities to benefit from the growth in that country.

Trade links between Germany and the US exhibit little dynamism at present. German exports to the US rose by only 2.7 percent in 2013, to 89 billion euros. German imports even fell by 4.9 percent, to 49 billion euros. Thus, trade with the US exhibited the highest export surplus of all countries trading with Germany (40.8 billion euros).¹² Nevertheless, in 2013, the US was still the Germany's second most important trading partner in terms of exports. In terms of imports, it is in fourth place.¹³ An increase in imports from the US could make better use of the existing capacities of ships engaged in US-European trade.

The Federal Government supports the Transatlantic Trade and Investment Partnership (TTIP) that is currently being negotiated between the EU and the US. The Federal Government expects this free trade agreement to result in a strong stimulation of German-American trade and thus also in an increase in the volumes of cargo handled by German ports.¹⁴ The ports of Bremen and Bremerhaven, in particular, have traditionally benefited from Germany's close links with the US.

In the EU, GDP growth rates of 1.2 to 1.5 percent are forecast for the period to 2030.¹⁵ Above all, Europe will have to address demographic trends, which will result in a decline in the available labour force, as a result of which there will be significant stress on the economy (pressure on salaries, pension funding problem and lower potential growth).¹⁶ However, it cannot yet be predicted what impact the influx of potential workers triggered by the refugee crisis will have. Alongside this, the EU is still struggling to cope with the consequences of the economic and financial crisis.

Russia is in a deep recession. The declining demand for consumer and capital goods is reflected in external trade. In the first half of 2015, Russia's imports slumped by 38.7 %. The value of its exports fell by 29.1 %. The consequences of the economic crisis are also hitting German companies. Their exports to Russia decreased by just over one third in the first five

¹² Federal Statistical Office (press release) 2013: *Largest export surplus derived from trade with the United States*, November 2014.

¹³ Association of German Chambers of Industry and Commerce (press release): *Statistiken zum Außenhandel*, 2014.

¹⁴ On the impact of the TTIP on the European economy, cf. Centre For European Policy Research: *Reducing Transatlantic Barriers to Trade and Investment - An Economic Assessment*, March 2013.

¹⁵ Centre for European Policy Studies, for ESPAS: *The Global Economy in 2030: Trends and Strategies for Europe*, November 2013, p. 77.

¹⁶ Ibid. p. v.

months of the year. This is most clearly apparent at the port of Hamburg. In the first half of 2015, around 36 % fewer containers were handled there in traffic to and from Russia. At the Russian Baltic Sea ports, 32.1 % fewer containers were handled than in the same period of the previous year. A recovery of the Russian economy is not in sight at present.¹⁷

The most important hinterland market for the German sea and inland ports is Germany itself, which has emerged from the crisis relatively unscathed. However, the German seaports' hinterland stretches way beyond Germany, which means that the currently low potential for growth in the EU could have an adverse impact on the volume of cargo handled at the seaports. This also applies to inland ports that handle international transport operations. Here, however, the ports benefit from the higher growth in the states of Eastern Europe compared with those of Southern and Western Europe, because it is there that the principal hinterland of the German seaports outside Germany is located.

Challenges:

- Government deficits in most EU Member States reduce investment
- Comparatively low growth in the EU
- Demographic change

Opportunities:

- Rise of China in the triad
- Stable budget and low unemployment in Germany
- Comparatively high growth in China, India and the ASEAN countries
- US has overcome the crisis and has stable growth
- Transatlantic Trade and Investment Partnership (TTIP)

Trends at seaports

In 2012, around 3.7 billion tonnes of cargo were handled by European ports.¹⁸ The forecast of transport interconnectivity for 2030, which was commissioned by the Federal Ministry of Transport and Digital Infrastructure, conducted a detailed forecast of cargo handling for 36 ports (19 ports in Germany and 17 other European ports). In total, the volume of cargo handled at the German ports under review will rise from 269 million tonnes in 2010 to 468 million tonnes in 2030. For the 19 German seaports, the results of the forecast of cargo handling show a sustained growth trend averaging 2.8 percent a year.¹⁹ This is a significantly lower rate of growth in the volume of cargo handled than that predicted in the maritime traffic

¹⁷ Germany Trade and Invest: *Russische Wirtschaft rutscht tiefer in die Rezession*, August 2015, <http://www.gtai.de>.

¹⁸ EUROSTAT: *Maritime Ports Freight and Passenger Statistics*, February 2014.

¹⁹ MWP, IHS, UNICONSULT, Fraunhofer CML: *Seeverkehrsprognose 2030*, May 2014, p. 1.

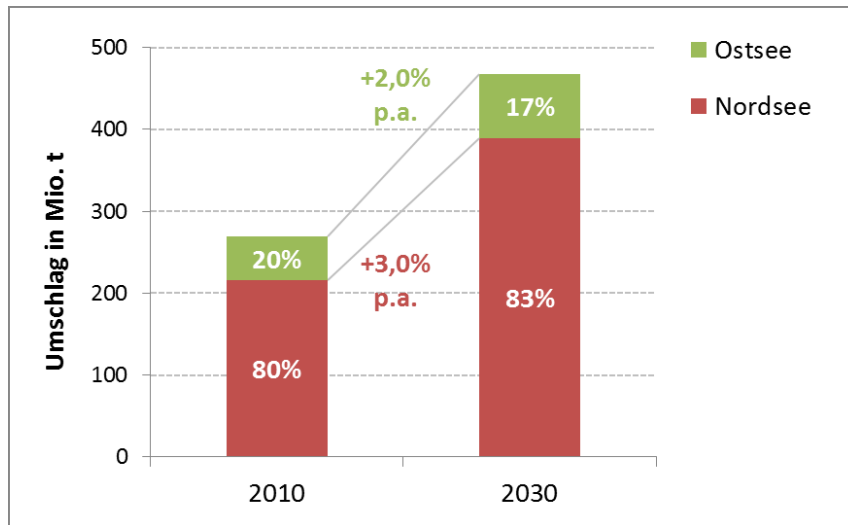
forecast for 2025²⁰, but still means a massive challenge for the ports and transport infrastructure, which in some cases have reached their capacity limits.

The maritime traffic forecast for 2030 comes to the conclusion that the volume of cargo handled by the eleven North Sea Ports under review will increase more sharply (three percent annually) than that handled by the eight Baltic Sea ports under review (two percent annual growth). The reasons for this are the strong ties between the North Sea ports and the growth markets in Asia and America and the above-average growth in container traffic.²¹

²⁰ Cf. PLANCO Consulting GmbH: *Prognose der deutschlandweiten Verkehrsverflechtung – Seeverkehrsprognose*, April 2007, p. 57ff.

²¹ MWP, IHS, UNICONSULT, Fraunhofer CML: *Seeverkehrsprognose 2030*, May 2014, p. 2.

Figure 2: German seaports – Volume of cargo handled and market shares by sea area



Source: MWP, IHS, UNICONSULT, Fraunhofer CML: Maritime traffic forecast for 2030

In contrast to the 2009 National Ports Strategy, which stated that capacity constraints at ports were likely, the situation has eased off somewhat in the short term. During the economic crisis, the ports developed their capacities and took measures to enhance the productivity of their terminals. Nevertheless, temporary bottlenecks in container handling are still apparent at some German seaports after the crisis. The fact that container ships are getting larger and larger also plays a role, because it means that a greater number of containers have to be loaded at the same time. The German ports will not be able to preserve their outstanding competitive position unless they continue to expand their handling capacities in line with demand and cushion the increasing peak-period traffic volumes. The increasing concentration of cargo caused by the growth in ship sizes necessitates not only improved loading equipment but also, in particular, more space at the ports.

In the seaborne trade in goods, Germany will still exhibit a significant import surplus in 2030. In the container sector, imports and exports are relatively balanced, although almost all containers are handled by the North Sea ports. In the Baltic Sea, only the port of Lübeck handles an appreciable number of containers. The maritime traffic forecast predicts that the volume of containers handled by German ports will roughly double between 2010 and 2030. Growth will be generated almost exclusively in Hamburg, Bremerhaven and Wilhelmshaven.²² The maritime traffic forecast for 2030 states that the German North Sea ports will, on the whole, capture market share from the other North Range ports under review

²² Ibid. p. 85.

In 2030, cargo handling in the Baltic Sea will still be dominated by Lübeck and Rostock. Growth at the German Baltic Sea ports will be moderate. Compared with their Polish competitors, the German Baltic Sea ports will slightly lose market shares.²³

Challenges:

- Great pressure on capacity in the container sector
- German Baltic Sea ports losing market shares to Eastern European ports

Opportunities:

- Northern Range ports can gain market shares
- Sustained growth trend
- Strong ties between the North Sea ports and Asia/US

Trends at inland ports

The inland waterway transport sector has also recovered from the crisis and, in 2013, recorded growth of 1.7 percent in terms of freight lifted and an increase of 2.7 percent in terms of freight moved.²⁴ Inland waterway transport takes place predominantly on the Rhine and its tributaries, and here especially on the Western German canal network. At ten inland ports selected by the Federal Statistical Office, the volume of waterborne cargo handled increased by a total of around 10 percent between 2004 and 2013.²⁵ Today, inland ports are major trimodal transshipment and industrial sites. At many German inland ports, the volume of rail freight handled, in particular, is increasing. The German inland ports are of great importance to regional economies in the handling of bulk and general cargo and are drivers of jobs and wealth creation in their regions. The incorporation of inland ports into logistics provides local companies with competitive advantages over other regions, which is why a high-capacity inland port is an important locational factor. In addition, due regard must be given to the potential for activating the rail and waterway systems to avoid congestion and losses in wealth creation throughout the freight transport system.²⁶

To avoid possible capacity constraints at the seaports, to make less expensive transport operations possible through collaborative schemes with the seaports and expand their hinterland catchment areas, there is an opportunity for suitable inland ports to assume seaport

²³ Ibid. p. 113.

²⁴ Federal Association for German Inland Waterway Transport: *Binnenschifffahrtsreport*, March 2014, p. 2.

²⁵ DESTATIS: *Verkehr Aktuell*, November 2014, p. 35f.

²⁶ Cf. Ministry for Economic Affairs, Energy, Building, Housing and Transport of the State of North Rhine-Westphalia: *Binnenhäfen im Spannungsfeld konkurrierender Nutzungsinteressen*, 2010, p. 13.

responsibilities and wider functions in the logistics chains.²⁷ The analyses of the *Report on Boosting the Competitiveness of the Inland Ports*, which was commissioned by the Federal Ministry of Transport and Digital Infrastructure, show that the development of a network of trimodal inland port locations can significantly augment and support the function of the seaports as hubs of the national and international trade in goods. Provided with the right equipment, these locations act as seaport hinterland hubs, thereby reducing the burden on the road infrastructure, for instance, and contributing to the optimization of logistics chains and the harnessing of the potential for job creation. The report recommends the creation of a core network and a supplementary network of inland port hubs.²⁸

Challenges:

- Relatively low medium-term growth in the volume of waterborne cargo handled

Opportunities:

- Trimodal development
- Sites for cargo handling and industrial companies
- Interlinking with seaports
- Creation of a core and supplementary network of inland waterway locations

Infrastructure

The German sea and inland ports can compete very successfully, because, among other things, they have good seaward approaches, inland waterways and hinterland connections that make it possible to move goods quickly to and from the ports. If the seaports and inland ports are to continue to perform and further expand their function – a function that is of outstanding importance to the national economy – priority must be given to removing the bottlenecks in the seaward approaches, inland waterways and landside connections to and from sea and inland ports of domestic and international significance. The Coalition Agreement for the 18th parliamentary term acknowledges the great importance of the ports for the macroeconomic development of Germany and Europe by making explicit reference to the hinterland links to and from seaports.²⁹ The Federal Ministry of Transport and Digital Infrastructure is currently working on the preparation of a new Federal Transport Infrastructure Plan (FTIP 2015), which will be the foundation for the further development and upgrading of the federal transport infrastructure.

²⁷ Cf. PLANCO Consulting GmbH: *Gutachten zur Erhöhung der Wettbewerbsfähigkeit der Binnenhäfen*, January 2013, p. 12ff.

²⁸ Ibid.

²⁹ Coalition Agreement between the CDU, CSU and SPD: *Deutschlands Zukunft gestalten*, December 2013, p. 29.

High-capacity transport infrastructure is the basis for economic growth and jobs. Germany has one of the best-developed transport systems in the world. In 2014, for the second time, the World Bank ranked Germany best logistics performer in the world out of 160 countries.³⁰ This positive ranking, however, does not imply that the condition of the transport infrastructure is satisfactory everywhere. Today, some parts of it are already approaching maximum capacity. The additional strain imposed on the transport infrastructure by the increasing levels of freight traffic, which are concomitant with economic growth and the growth in the volume of cargo handled, could exacerbate this situation.

In its April 2013 basic approach for the 2015 Federal Transport Infrastructure Plan, the Federal Ministry of Transport and Digital Infrastructure states that the current degree of modernity of individual infrastructure-related structures is significantly too low.³¹

The Federal Government has since made available additional funding for investment in the federal transport infrastructure:

- € 5 billion in the 18th parliamentary term and continuation of this budget line by provision of an additional €1.8 billion in both 2018 and 2019;
- around €3.1 billion in the period from 2016 to 2018 from the €10 billion package for future-oriented investment;
- additional funds for transport investment as greater use is made of the "user pays" principle (HGV tolling scheme extended in two stages in 2015);

In total, the Federal Government will increase transport infrastructure investment (rail, road, waterway, combined transport) from around €10.2 billion in 2014 to €13.4 billion in 2018. In addition, the use of resources has been made more flexible (vieneement of the funds for investment and ability to carry them over to the next year without savings in the opposite direction).

Given that the volume of cargo handled by seaports is likely to rise from 269 million tonnes in 2010 to 468 million tonnes in 2030, particular importance attaches to the upgrading of the seaward approaches, hinterland connections and inland waterways in the federal transport infrastructure planning for 2015.

³⁰ Cf. The World Bank: *Logistics Performance Index – Global Rankings 2014*, 2014.

³¹ Federal Ministry of Transport and Digital Infrastructure: *Grundkonzeption für den Bundesverkehrswegeplan 2015*, 2014, p. 31.

Notwithstanding the investment ramp-up that has been undertaken, care must be taken to ensure that the limited public resources are spent in a targeted manner. This requirement is addressed by a *National Scheme of Priorities*. Investment decisions are geared strictly to economic viability and strategic objectives and are consequently focused on structural maintenance and the removal of bottlenecks on corridors with high levels of traffic. In accordance with the requirements set out in the Coalition Agreement, the *National Scheme of Priorities* is to be drawn up such that 80 percent of the funds available for upgrading and construction are invested in projects of national importance.³² This includes the upgrading of busy junctions, inland links to and from seaports, main arteries, the bridging of major network gaps of national importance and the inclusion of trans-European transport arteries and transport arteries that have been agreed under international law.³³

In addition, new approaches to funding transport infrastructure must be adopted to ensure that the transport network is maintained and expanded in line with requirements. The only way to that infrastructure development can be viable in the long term is to ensure that the increased funding available is accompanied by an efficient distribution of funds.³⁴

Shifting freight traffic to the railways and waterways helps to relieve congestion on the busy road infrastructure and is supported by the Federal Government and the federal states. To achieve this modal shift, there needs to be closer linkage between Federal Government and federal state infrastructure planning, while observing their constructional responsibilities.

Challenges:

- Degree of modernity of parts of the transport infrastructure is significantly too low
- Increase in volume of freight traffic is putting a strain on the transport infrastructure
- Explore new financial instruments

Opportunities:

- Exploit the substantial increase in the investment budget
- Prioritize investment
- 80 percent of the funds available for upgrading and construction are to be invested in projects of national importance
- Upgrade busy junctions, hinterland links to and from seaports and main arteries; bridge major network gaps of national importance; and include trans-European transport arteries and transport arteries that have been agreed under international law

³² Ibid. p. 65.

³³ Coalition Agreement between the CDU, CSU and SPD: *Deutschlands Zukunft gestalten*, December 2013, p. 29.

³⁴ Federal Ministry of Transport and Digital Infrastructure: *Grundkonzeption für den Bundesverkehrswegeplan 2015*, 2014, p. 15.

Interlinking sea and inland ports and competition

The objective of interlinking sea and inland ports is to develop them into a combined transport system. This can:

- relieve the seaports of functions that can be performed at inland ports and freight distribution centres;
- boost the competitive position of the inland ports in logistics;
- optimize and accelerate freight transport;
- generate synergies; and
- widen the range of services provided by ports.

Transferring some of the functions performed by seaports to inland ports can address capacity constraints that are likely in the future. Collaboration between the seaports and inland ports creates an opportunity to make transport operations less expensive, thereby expanding the hinterland catchment areas of the seaports. The *Report on Boosting the Competitiveness of the Inland Ports*, which was commissioned by the Federal Ministry of Transport and Digital Infrastructure, showed that the development of a network of inland port locations can significantly augment and support the function of the seaports as essential links of external trade.³⁵

The 2009 National Ports Strategy has already pointed out that the creation of infrastructure corridors via the seaports and inland ports is of crucial importance to transport policy.³⁶ Appropriate corridors are being identified at European level³⁷ and can form the foundation for a German core network comprising inland port hubs.

Examples of successful linkage and cooperation include the collaborative partnership between ports in Schleswig-Holstein for offshore wind energy³⁸, the collaborative partnership between ports in the German Bight and the collaborative partnership between North Sea ports³⁹, plus

³⁵ PLANCO Consulting GmbH: *Gutachten zur Erhöhung der Wettbewerbsfähigkeit der Binnenhäfen*, January 2013, p. 20.

³⁶ Federal Ministry of Transport, Building and Urban Development: *National Strategy for Sea and Inland Ports*, July 2009, p. 56.

³⁷ Cf. Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU.

³⁸ The ports of Büsum, Brunsbüttel, Dagebüll, Helgoland, Husum, Rendsburg-Osterrönfeld, Wyk/Föhr plus Hörnum and List have agreed to engage in close cooperation, focusing on "offshore wind farm logistics". This collaborative partnership pools the potential inherent in the federal state of Schleswig-Holstein with its ports for the wind farms in the North Sea.

³⁹ The "collaborative partnership between ports in the German Bight" has been in existence for some years, linking Bremen, Hamburg and Lower Saxony. Since 2013, there has additionally been the "collaborative

the "Inland Port Network" joint venture⁴⁰. In addition, Schleswig-Holstein has since hosted the 4th Port Development Dialogue – an initiative launched by the federal coastal states – on the occasion of which the ministers and senators and the heads of the state and senate chancelleries of the five Northern German federal states reached agreement on future key thematic areas in ports policy and common approaches.

Collaborative partnerships between inland ports have become more important in recent years. They address issues such as the coordination of capital investment projects, representation of the interests of the ports, technical cooperation, joint marketing, location of businesses and environmental questions. In the Rhine and Danube river basins, there is a range of existing or tentative collaborative partnerships at various stages of development.⁴¹

Challenges:

- Possible capacity constraints at the seaports
- Road infrastructure overload
- Insufficient utilization of the capacities of inland waterway transport and inland ports

Opportunities:

- Widen the range of services provided by ports
- Synergies
- Accelerate transport operations
- Less expensive transport operations
- Expand the catchment areas of seaports

From 1986 to 1996, the Federal Government established the first financial assistance programme for innovative seaport technologies (ISETEC I). In the context of the dynamic trends in container and ro-ro traffic, the ISETEC II research initiative was launched as a supporting measure for the seaports sector. A total of 23 collaborative projects have been conducted to develop and trial new solutions, both for port handling itself and for the provision of transport links to and from the seaports. The major objectives of the ISETEC II research initiative were to enhance the capabilities of the seaports sector as an overall logistics

partnership between North Sea ports", in which all five Northern German federal states are represented. In this context, several meetings were held in 2014, attended by representatives from the government departments responsible for ports and from the state/senate chancelleries, at which common positions were developed and agreement was reached on the way forward with regard to the development of the Northern German ports.

⁴⁰ In March 2010, the terminal operators HHLA and EUROGATE formed the "Inland Port Network" joint venture covering several locations. The objective of this joint venture is to establish neutral combined transport terminals for maritime container logistics of the German seaports and for continental combined transport operators.

⁴¹ For instance, Basel, Mulhouse and Weil am Rhein (RheinPorts), Duisburg-Dortmund, the ribbon of ports on the Mittelland Canal (transcending federal state boundaries), the collaborative partnership between ports on the Lower Rhine, Karlsruhe-Wörth (transcending federal state boundaries), Kehl-Strasbourg including interleaved management boards, Cologne-Neuss-Düsseldorf, Mannheim-Ludwigshafen (transcending federal state boundaries), Neuss-Düsseldorf-Krefeld, Stuttgart-Plochingen.

system comprising various players, to boost the competitiveness of the national economy and to preserve jobs, especially in the Northern German federal states.⁴²

Looking ahead to the high growth in the volume of cargo handled that was expected at that time, an overarching objective was defined for the ISETEC II funding initiative, namely to study and development innovative technologies in the seaport environment so as to be able to meet the long-term trend of a sharp rise in the volume of freight.⁴³ The Federal Government appropriated a sum of 21.2 million euros for ISETEC II, with a further 20.5 million euros being contributed in the form the project partners' own resources.

Innovative seaport technologies make a major contribution towards reducing external costs resulting from environmental degradation, improving the labour market situation in the maritime environment and boosting the competitiveness of the German seaports. Competition between seaports is getting fiercer,⁴⁴ and the German seaports can meet this challenge by, among other things, deploying intelligent seaport technologies. Here, the focus on the one hand is on the objective of making the operational activities at the port and in the inland traffic to and from seaports as efficient as possible in order to deliver further cost savings. On the other, it is important for the competitiveness of the German seaports that they further optimize the quality of the services they provide so as to be able to compete successfully through cost and quality advantages. An important role here is played by the exchange of data along the maritime logistics chain. Here, there are still shortcomings, which are reflected in, among other things, complex processes, high labour costs and a sub-optimum use of the existing infrastructures. Environmental aspects are also likely to become more important in the years ahead, which means that a consistent focus on sustainability factors promises to provide an important competitive advantage.⁴⁵

⁴² Hanseatic Transport Consultancy: *Volkswirtschaftliche Bewertung der Forschungsinitiative ISETEC II*, December 2012 (January 2013 adaptations), p. 1.

⁴³ *Ibid.* p. 2.

⁴⁴ For instance as a result of the expansion of Maasvlakte 2 and the increase in cargo handling capacity at Gdąnsk.

⁴⁵ Hanseatic Transport Consultancy: *Volkswirtschaftliche Bewertung der Forschungsinitiative ISETEC II*, December 2012 (January 2013 adaptations), p. 70f.

Challenges:

- Fiercer competition between seaports
- Shortcomings in the exchange of data
- Sub-optimum utilization of the infrastructures

Opportunities:

- Boost the competitiveness of the seaports
- Enhance the capabilities of the seaports sector as an overall logistics system comprising various players
- Reduce external costs resulting from environmental degradation
- Cost savings
- Optimize the quality of services

European and international ports policy

The Federal Government supports fair and transparent conditions of competition in and between European ports. It thus agrees in principle with the European Commission's objectives with regard to establishing more transparency in the financial relations between the public sector and the providers of port services. In order to progress innovations, however, Member States need a national scope for action, and this must be preserved so that the ports can be evolved on the basis of strategies specific to individual locations.

The European Union is increasingly exerting influence on ports policy. It is doing so not just through the planned *Regulation of the European Parliament and of the Council establishing a framework on market access to port services and financial transparency of ports*⁴⁶, but also through a range of cross-cutting regulations and directives. These include *Directive 2014/23/EU* of 26 February 2014 on the award of concession contracts, *Regulation (EU) No 1315/2013* on Union guidelines for the development of the trans-European transport network (TEN-T), *Directive 2014/94/EU* on alternative fuels infrastructure and *Regulation (EU) No 1143/2014* of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species.

Regarding the planned *Regulation of the European Parliament and of the Council establishing a framework on market access to port services and financial transparency of ports*, the Federal Government has given its consent to the compromise now reached, now that most of the items that it viewed critically have been adjusted. However, the European

⁴⁶ Doc. 10154/13.

Parliament has not yet concluded its deliberations on the draft. When they are completed, the Federal Government and federal states will have to once again assess the draft.

In the negotiations on the *Directive on the Award of Concession Contracts*, the Federal Government successfully lobbied to ensure that tenancy and lease contracts having as their object properties at seaports, inland ports or airports, such as those customary at the German ports for the transfer of port land for the purposes of commercial activity, should not qualify as concessions. Thanks to this rule, the ports can rely on being able to continue their operations as agreed in the tenancy and lease contracts without having to fear the loss of possible investment in handling facilities. This has ensured the willingness of port companies to invest in modern handling equipment.

The Federal Government was very heavily involved in framing the new *EU Regulation on Guidelines for the Trans-European Transport Network (TEN-T)* and the *Connecting Europe Facility (CEF)*. 89 German inland ports and 21 German seaports are part of the TEN-T, of which 21 inland ports and six seaports are part of the core network. The Federal Government supports the European Commission's approach of granting higher rates of funding to provide a greater impetus and speed up projects. This is in line with Germany's demand for the use and concentration of funds to meet requirements. The European Commission estimates that funding totalling 500 billion euros will be required for the transport networks for the financial period from 2014 to 2020. The CEF currently earmarks €24 billion for the co-financing of TEN-T infrastructure schemes.

The *EU Directive on Alternative Fuels Infrastructure*, which entered into force on 7 November 2014, requires Member States to establish national policy frameworks within two years and transmit them to the Commission. Member States are to ensure that the national policy frameworks assess the need for shore-side electricity supply to seagoing ships and inland waterway vessels in ports. In addition, they are to ensure that an appropriate number of refuelling points for LNG⁴⁷ are put in place at sea and inland ports by 31 December 2025, to enable LNG-powered ships and vessels to operate throughout the TEN-T Core Network.

The *EU Regulation on the prevention and management of the introduction and spread of invasive alien species*, which entered into force in January 2015, sets out rules to prevent, minimize and mitigate the adverse impact of the introduction and spread of invasive alien

⁴⁷ LNG = Liquefied Natural Gas.

species on biodiversity in the European Union. At the heart of the Regulation is a list of species that are at an early stage of spreading and are having an especially adverse impact.

The Competition Directorate-General is currently engaged in considerations to determine the extent to which the practice of public sector port infrastructure funding, which has been common in many Member States for decades, complies with the EU's competition rules. The European Commission has announced that it will not develop any state aid guidelines in the near future. Instead, it is giving intensive consideration to whether the ports should be included in the General Block Exemption Regulation (GBER), with the aim of exempting most public sector state aid to investment in ports from the notification requirement. Subject to further scrutiny, the Federal Government and federal states take a basically positive view of these deliberations, provided that account is taken of the special structures of the ports, a large number of port infrastructure projects are exempted from the notification requirement and appropriate thresholds are developed. It is likely that the European Union will continue to strive to exert influence on national ports policies.

Both the Association of German Seaport Operators and individual terminal operators are members of the *Logistics Alliance Germany* (LAG). The LAG is a public-private partnership project between the Federal Ministry of Transport and Digital Infrastructure and the German logistics industry. The joint objective of the project is to boost Germany as a centre for logistics on target markets outside the European Union and to generate new freight transport, logistics and consultancy contracts for the German logistics industry. The LAG acts as a central point of information and contact for companies from home and abroad who are looking for competent partners from the German logistics industry. The LAG's spectrum of responsibilities thus comprises the provision of support to foreign shippers wishing to enter the European market via Germany as a gateway and hub, the provision of support in the implementation of marketing and sales schemes and the provision of knowledge about target markets.

Challenges:

- Preserve scope for national action for port development
- Port-related European rules must be appropriate and in keeping with the principle of subsidiarity
- Risk of distortion of competition vis-à-vis non-European ports
- Preserve the autonomy of port administrations
- Avoid additional administrative burdens

Opportunities:

- Fair and transparent conditions of competition in and between European ports
- Fund infrastructure upgrades with EU money
- Promote alternative fuels by deploying area-wide networks for LNG and shore-side electricity
- Germany must exert influence at an early stage on crucial European rules
- Joint marketing of the ports and the German ports sector by the Logistics Alliance Germany and the federal states' marketing companies.

Environmental protection and climate change mitigation, alternative fuels, offshore wind energy

In principle, cargo on the seas is transported with a high degree of energy efficiency.

However, the large volume of goods, most of which are transported over long distances, results in a high overall consumption of fuel by maritime shipping. In addition, heavy fuel oil, which is still predominantly used, causes high emissions of carbon dioxide, nitrogen oxides, sulphur dioxide, particulate matter and heavy metals. In port cities, in particular, this results in serious degradation of air quality.

The International Maritime Organization (IMO) is responsible for regulating international maritime shipping. It has adopted measures that are designed, in the years ahead, to result in improvements in energy efficiency and a reduction in pollutant emissions and other environmental discharges.

- Introduction of an Energy Efficiency Design Index (EEDI), which, since January 2013, has made it possible to calculate and compare the energy efficiency of new ships per tonne-kilometre, thereby creating incentives for energy-efficient shipbuilding.
- Progressive and regionally differentiated limitation of the sulphur content of marine fuel to 0.1 percent in ECAs⁴⁸ by 2015 and 0.5 percent in all other waters by 2020.

Implementation of these rules means that the use of conventional heavy fuel oil will no longer be possible in the medium term, because this reduction can only be achieved by using middle

⁴⁸ ECA = Emission Control Area.

distillates (marine diesel, marine gas oil) unless permissible equivalent alternatives (for instance exhaust gas cleaning systems) are used. All in all, LNG is regarded as the most promising alternative fuel in maritime and inland waterway transport⁴⁹, with sulphur-free diesel already in use in inland water transport.

The revised MARPOL Annex VI⁵⁰ entered into force on 1 June 2010 and was transposed into national law by the Sixteenth Set of Regulations on Amendments to International Provisions governing Environmental Protection in Maritime Transport. The maximum permissible sulphur content in marine fuels in SECAs was initially lowered to one percent. Since January 2015, a limit of 0.1 percent has been in force on the North Sea and Baltic Sea. The Annex was transposed into European law on 21 November 2012 by the Sulphur Directive.⁵¹ National transposition of the shipping law part of the Sulphur Directive was concluded with the enactment of the Third Set of Regulations on Amendments to Environmental Provisions in Maritime Transport.⁵²

Preparations are continuing within the framework of HELCOM⁵³ for the additional designation of a nitrogen oxide (NO_x) emission control area (NECA) on the Baltic Sea. Unlike the SECA provisions, the stringent Tier III emission standards will only apply to new ships in the NECA. Preparations are also underway for designating an NECA for the North Sea.

Alongside the international rules and regulations, there are voluntary initiatives by individual players for the reduction of environmentally harmful emissions from shipping, such as the World Ports Climate Initiative (WPCI). This initiative is an association of different ports with the aim of improving the carbon footprint of shipping in ports and on the seas. To this end, an Environmental Ship Index (ESI) has been developed, which identifies especially environment-friendly ships and grants them special conditions in the participating ports, for instance lower port dues.⁵⁴

⁴⁹ Federal Ministry of Transport, Building and Urban Development: *Die Mobilitäts- und Kraftstoffstrategie der Bundesregierung*, June 2013, p. 52.

⁵⁰ MARPOL = International Convention for the Prevention of Pollution from Ships.

⁵¹ Directive 2012/33/EU of the European Parliament and of the Council of 21 November 2012 amending Council Directive 1999/32/EC as regards the sulphur content of marine fuels.

⁵² Federal Law Gazette 2014, Part I, No 40, Third Set of Regulations amending Environmental Provisions Maritime Shipping of 13 August 2014.

⁵³ HELCOM = Helsinki Commission, intergovernmental commission working for marine environmental protection in Baltic Sea Region.

⁵⁴ Federal Ministry of Transport, Building and Urban Development: *Die Mobilitäts- und Kraftstoffstrategie der Bundesregierung*, June 2013, p. 52.

The Federal Government's policy aims to create uniform environmental standards throughout the world to safeguard the competitiveness between trades. In close cooperation with the federal states and the private sector, a national strategy framework is to be developed for market development in the field of alternative marine fuels and their infrastructure, especially with regard to LNG. Incentives for market development are to be developed at Federal Government, federal state and European level. Regarding the deployment of an LNG supply system in the shipping sector, the challenges are to develop and provide the supply and storage capacities for LNG both at the ports concerned and on board ships.

The fuel that is used exclusively in inland waterway transport (gas oil or diesel) produces fewer particulate, sulphur and nitrogen oxide emissions than heavy fuel oil. The inland waterway transport sector has already successfully changed over to sulphur-free fuels. Inland waterway vessels have to compete with the railways and the roads. The main aim of measures in the inland waterway transport sector should thus be to optimize transport operations on the waterways, on which there are likely to be relevant transport flows in the future, thereby making these operations more efficient and thus commercially more competitive.

Challenges:

- Comply with sulphur and nitrogen oxide limits in maritime shipping
- Develop LNG infrastructure
- Modernize the fleets of seagoing ships and inland waterway vessels

Opportunities:

- Protect the environment and health, mitigate climate change
- Modernize the fleets of seagoing ships and inland waterway vessels

A new industry with a large number of jobs for highly skilled workers has grown up around offshore wind energy. In the value chain of offshore wind energy, ports occupy a key position in their role of hubs. Here, many turbine parts are produced, partly assembled, stored or loaded. In addition, offshore ports are the base for special ships for seaborne transport and assembly, including maintenance and repair work.

Based on the realistic opportunities for development, the path of expansion has been statutorily specified as 6.5 gigawatts (GW) of offshore energy by 2020 and 15 GW by 2030 (Section 3 of the Renewable Energy Sources Act 2014).⁵⁵ The ports can benefit greatly from

⁵⁵ See also Coalition Agreement between CDU, CSU and SPD for the 18th parliamentary term, p. 55.

the construction and maintenance of offshore wind turbines. There may be significant positive effects on the economies of the regions surrounding the offshore ports in terms of gross value added and the size of the workforce. The Federal Government's objective is to support the ports in the creation of high capacity for offshore wind energy and to enhance the competitiveness of the German ports with regard to the export of offshore wind turbines as well.

At the same time, however, excess capacity at the ports must be avoided. The establishment of the offshore wind energy base ports will require enormous investment. For instance, the costs for construction of the offshore terminal at Bremerhaven are put at €180 million. More than €80 million has been invested in establishing the offshore base at Cuxhaven. It must therefore be borne in mind that this capacity, created for a very specific logistical application, might later not be sufficiently utilized. It would thus appear advisable for the ports not to focus their development planning solely on offshore wind energy. Given the high risks involved, alternative use strategies are conceivable as flexibility options to ensure that the sites are continuously operating at full capacity.

The development of offshore wind energy is crucial to the success of the new direction in Germany's energy policy. The Federal Government and federal states are thus considering the extent to which the Federal Government can make a financial contribution to the upgrading of port infrastructure for the offshore wind energy industry.

It is first necessary for the Northern German federal states, which are responsible for the development of port infrastructure, to set out – accurately, plausibly, comprehensively and transparently – the actual need for port capacity, in particular:

- whether additional port capacity could result in further large component manufacturers locating along the German coast;
- whether the exporting large component manufacturers require additional port capacity for the European onshore and offshore wind energy market; and
- in what way the location of production sites for large components influences the need for additional port capacity.

In this context, a value for money assessment would also have to be carried out to determine the extent to which the required investment that has been identified can also be delivered and funded.

Challenges:

- High level of investment in offshore base ports required
- The infrastructures and suprastructures for offshore wind energy might not operate at full capacity
- Identify the need for port capacity

Opportunities:

- Positive effects on regional economies in terms of gross value added and size of the workforce
- Alternative use strategies to ensure that the sites are continuously operating at full capacity
- Export of offshore wind turbines

Training and employment

Ports create jobs not only in the immediate ports sector but also in the ports industry.⁵⁶ In addition, ports also have an indirect impact on employment in many sectors of the economy. The Association of German Seaport Operators puts the number of employees directly and indirectly dependent on the seaports in Germany at around 500,000. The Federal Association of Public Inland Ports estimates that around 400,000 employees are dependent on the inland ports. These figures underscore the great importance of the seaports and inland ports for the entire German economy.⁵⁷

In the past few decades, the job requirements and activities at ports have changed greatly. Today, the ports are home to trained skilled workers from over 50 different occupations in the spheres of ports, logistics and freight transport. The working conditions meet the most up-to-date standards, and the focus is on professional expertise, for instance in the application of digital technologies. The occupational profiles must keep up with developments and should thus be adapted accordingly if necessary. This applies to both initial and recurrent training. In

⁵⁶ Cf. PLANCO Consulting GmbH: *Fortschreibung der Berechnung zur „Regional- und gesamtwirtschaftlichen Bedeutung des Hamburger Hafens“ für das Jahr 2012 (Management Summary)*, September 2013, p. 1. Cf. also: The Senator for Economic Affairs and Ports: *Beschäftigungseffekte der Bremischen Häfen, Vorlage für die Sitzung des Ausschusses für Angelegenheiten der Häfen im Lande Bremen am 8. Februar 2012*, January 2012, p. 1 ff.

⁵⁷ Examples: According to a study, just under 70,000 jobs were directly dependent on the port of Hamburg in 2012. Cf. Planco Consulting GmbH: *Fortschreibung der Berechnung zur „Regional- und gesamtwirtschaftlichen Bedeutung des Hamburger Hafens“ für das Jahr 2012 (Management Summary)*, September 2013, p. 27. Around 57,000 employees were directly dependent on the ports of Bremen and Bremerhaven. Cf. Institute of Shipping Economics and Logistics: *Beschäftigungseffekte der Bremischen Häfen* (abridged version), 2011, p. 4. Niedersachsen Ports states that the number of employees directly dependent on the ports in Lower Saxony was around 43,000 in 2012. Cf. Niedersachsen Ports: *Mehr Beschäftigte in den Seehäfen* (press release), March 2014. In 2011, the port of Duisburg and the companies operating there employed 40,000 people. Cf. Handelsblatt: *Großes Interesse von Investoren* (press article), July 2011.

the field of initial vocational training, the "port occupations" of port boatman/boatwoman and ports logistics specialist were reclassified in 2006.

The economically active labour force between the ages of 20 and 66 will decrease by 3.5 million people by 2030.⁵⁸ To ensure that the ports continue to have the workforce they require, it will be necessary to retain workers in a company in a productive capacity until they reach retirement age and, moreover, to further increase the participation of the various groups of employees (for instance women, people from ethnic minorities) in employment wherever possible.⁵⁹

The ability to work, as defined by productivity and commitment, depends on individual prerequisites, but also, and most importantly, on the working conditions and the structure of work throughout a person's entire working life. Shaping good jobs and promoting health are not the only action areas for addressing the challenges of demographic change, but they are extraordinarily important areas. Especially with regard to job histories and the avoidance of cumulative stress, work must satisfy the assessment criteria of good work structuring. The major fields of action in this context are ergonomics, work organization, skills development and recurrent training.⁶⁰

The logistics sector needs skilled labour. For this reason, initial and continuing vocational training is becoming increasingly important. The Federal Employment Agency and the job centres are cooperating closely with regional industry to create more jobs and apprenticeship places by funding training courses. To address the new challenges to be met by the professional training of employees, the Centre of Maritime Excellence, which was founded 35 years ago and has sites in Hamburg, Bremen, Bremerhaven and Wilhelmshaven, offers individual training modules that are tailored to the specific needs of the port companies.

⁵⁸ Federal Government: *Weiterentwickelte Demografiestrategie: Politik für alle Generationen*, September 2015, p. 38

⁵⁹ Dr Götz Richter, Silke Bode, Dr Birgit Köper: *Demografischer Wandel in der Arbeitswelt*, August 2012, p. 2.

⁶⁰ Ibid.

Challenges:

- Changing occupational profiles and high degree of specialization
- Demographic change
- Great need for workers

Opportunities:

- Demanding and modern jobs
- Evolve skills development in the fields of logistics, modern technologies, connectivity, ergonomics and work organization
- Great potential for job creation
- Train and hire long-term unemployed people

Safety and security

Since July 2004, extensive security measures adopted by the International Maritime Organization (IMO) for the improvement of maritime security have applied to ships and port facilities worldwide. The ISPS Code⁶¹ applies to, among other things, cargo ships of 500 GT⁶² or more and passenger ships engaged on international voyages as well as port facilities serving such ships. The German ports fulfilled the IMO requirements before the transposition deadline.

European *Regulation (EC) No 725/2004* focuses primarily on measures to enhance ship and port facility security so as to be able to respond to intentional unlawful acts. Its scope of application is confined to security measures on board ships and in the immediate area of the ship/port interface. The purpose of the Regulation is to achieve protection that is as comprehensive as possible for the maritime transport industry and the ports sector by taking security measures at ports.

The German ports are among those links in the freight transport chain that are best protected against terrorist threats. As far as the ports are concerned, attention must be focused primarily on two areas of security: the terrorist threat and the increasing number of natural hazards. Ports, like other installations, are increasingly relying on the use of IT so as to be able to operate, control and monitor processes more effectively and more efficiently. This results in IT-based linkages and dependencies that are in some cases highly complex. Protection of the ports thus also requires the appropriate protection of the information infrastructures.

⁶¹ ISPS Code = International Ship and Port Facility Security Code, part of the IMO Safety Of Life at Sea Convention (SOLAS).

⁶² GT = gross tonnage.

As early as 2005, the Federal Government adopted the National Plan for Information Infrastructure Protection (NPSI) as its overarching IT security strategy. The objectives laid down in the NPSI – prevention, response and sustainability – are implemented by means of specific measures and recommendations for the sphere of critical infrastructures, especially within the framework of the UP KRITIS as a public-private collaborative venture between operators of critical infrastructures, their trade associations and the competent government agencies. As part of the evolution of the NPSI, it was superseded by the Cybersecurity Strategy for Germany in 2011.

The bulk of the infrastructure is operated by private sector companies (port authorities). This means that the security, reliability and availability of these infrastructures is increasingly also a private sector responsibility, or at least a shared responsibility. Government and/or public sector responsibilities thus lie primarily in ensuring, or at best safeguarding, supply in times of crisis, when customary market mechanisms no longer work. Thus, to take precautions against and to bridge precarious disruptions and serious incidents, institutionalized, organized cooperation between the public and private sectors in established security partnerships is required.⁶³

Complete protection of the ports and their ability to operate cannot be guaranteed by either the public sector or the operators. The security thinking of the past must evolve into a new "risk culture". This is based on, among other things:

- open communication of risks between government, the ports and the public, having due regard to the sensitivity of certain items of information;
- cooperation between all the relevant players in preventing and managing incidents;
- increased voluntary commitment on the part of the operators to prevent and manage incidents;
- increased and self-confident ability on the part of the individuals and facilities affected by the disruption or failure of critical infrastructure services to protect and help themselves.⁶⁴

In this communicative environment, the measures to protect the sea and inland ports must, based on the risks involved, be reviewed, dovetailed and, if necessary, evolved. Here, harmonization of the measures across federal state boundaries is to be sought. Time- and resource-intensive checks should be concentrated on at-risk transport operations.

⁶³ Ibid. p. 6.

⁶⁴ Ibid. p. 9.

Challenges:

- Terrorist threat to ports
- Increasing number of natural hazards
- Increasing dependency on and risks to IT structures

Opportunities:

- Open communication of risks between government, the ports and the public
- Cooperation between all the relevant players in preventing and managing incidents

Coordination of ports policy

In recent years, the Federal Ministry of Transport and Digital Infrastructure has registered a sharp increase in the number of responsibilities in matters relating to the sea and inland ports. For this reason, the Federal Government and federal states are seeking closer cooperation and intend to reach new agreements on cooperation in ports policy. The federal states are planning, for instance, development measures for their sea and inland ports which will impact on the infrastructure investment to be funded by the Federal Government without the Federal Government having been comprehensively informed of these federal state plans in a timely manner or being involved in them. The transfer of freight traffic to the railways and waterways in line with market conditions in response to the likely future growth in the volume of cargo handled also requires greater linkage between Federal Government and federal state planning. The federal states are demanding Federal Government assistance in upgrading their port infrastructures for offshore wind energy, deploying a network of LNG refuelling points for shipping as required by EU law and the deployment of shore-side electricity supply systems for passenger vessels.⁶⁵ However, the Federal Government has not yet been adequately involved in the corresponding planning activities by the ports.

The Federal Government is responsible, inter alia, for waterborne transport, logistics and representing the interests of the ports and federal states vis-à-vis the European and international institutions, but has too few opportunities to be involved in shaping ports policy with regard to the economy as a whole. Given the federal states' demands for an upgrading of transport infrastructure (Ahrensburg List, Düsseldorf List⁶⁶) and port infrastructure, the Federal Government should be more heavily involved in the federal states' planning activities.

⁶⁵ On LNG and shore-side electricity supply, see also Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure, Brussels, October 2014.

⁶⁶ The "Ahrensburg List", on which the transport ministers of the Northern German federal states reached agreement in September 2008, contains 24 infrastructure schemes of particular significance to the Northern German federal states. The "Düsseldorf List" comprises 36 infrastructure projects (10 waterway, 13 road, 13

Given the increasing European and national influence on ports policy, the federal states are also entitled to expect the Federal Government to involve them more heavily in its ports policy planning and to forward as much information as possible at the earliest possible stage.

The Federal Ministry of Transport and Digital Infrastructure has commissioned a study to examine the legal (and constitutional) bases, the existing structures and processes of cooperation and of the reciprocal exchange of information between the Federal Government and the federal states in ports policy in the national and European arena. This study is to develop proposals as to how they can be fleshed out in the future so that the Federal Government can pursue a ports policy that is optimally geared to the whole economy. This involves, inter alia, possible structural, procedural and legal changes. The federal states will be involved in the discussion on a new direction in the relationship between the Federal Government and the federal states in ports policy.

Challenges:

- The Federal Government exerts too little influence on development measures by sea and inland ports which impact on the Federal Government's infrastructure or funding investment
- Sharp increase in port-related responsibilities on the part of the Federal Government
- Too little information for the representation of interests at European level in a meaningful way

Opportunities:

- Study into the relationship between the Federal Government and federal states in ports policy
- More targeted infrastructure planning
- Provide assistance to ports in planning and implementing projects
- Improve the exchange of information between the players involved

Objectives of the 2015 National Ports Strategy

It continues to be the case that if Germany wishes to retain and expand its strong international competitive position as an attractive place for business and production, it must make its freight transport and logistics sector as efficient, profitable, environmentally acceptable and climate-friendly as possible.⁶⁷ The framework economic data and indicators for the German ports show that the common objective of the 2009 ports strategy has so far been achieved. The new National Ports Strategy must enhance the efficiency and productivity of the ports.

railway) which the federal states of North Rhine-Westphalia, Bavaria, Hesse, Rhineland-Palatinate and Baden-Württemberg expect will make a contribution to strengthening hinterland links to and from seaports.

⁶⁷ Cf. Federal Ministry of Transport, Building and Urban Development, *National Strategy for Sea and Inland Ports*, July 2009, p. 22.

In a development that runs counter to the trend in the Member States of the European Union, Germany has further consolidated its international competitive position as an attractive place for business and production. In the extremely difficult economic environment, the German ports have made a crucial contribution to this outstanding development in Germany. They continue to be among the most successful and best terminals in the world.

Nevertheless, the German sea and inland ports face new challenges. In the context of the changed structural and political conditions resulting from the global economic crisis and geo-political tensions, the ports must continue to be in a position where they can master the economic and logistical challenges and further improve their competitiveness as hubs of the national and international trade in goods and as central freight distribution centres.

The objectives of the 2015 National Strategy for Sea and Inland Ports set out in the following section provide the framework for the specific measures described in the subsequent chapter. They can only be implemented in a strategy coordinated jointly by the Federal Government, the federal states, local authorities and the ports sector in which all players (Federal Government, federal states, local authorities, trade associations, enterprises, unions) undertake to implement the measures that fall within their area of responsibility.

Upgrade port-related infrastructures as demand requires

Efficient transport infrastructure is the foundation for the economic success of the sea and inland ports. The Coalition Agreement for the 18th parliamentary term provides for the upgrading of busy junctions, hinterland links to and from seaports, main arteries, the bridging of major network gaps of national importance and the inclusion of trans-European transport arteries and transport arteries that have been agreed under international law.⁶⁸

With regard to the sea and inland ports, the most important overarching objectives are ensuring smooth freight traffic and boosting the competitiveness of enterprises.⁶⁹ From these overarching objectives, the basic approach for the 2015 Federal Transport Infrastructure Plan derives objectives and problem-solving strategies for the FTIP that meet the requirements of the sea and inland ports.

The objectives of the National Ports Strategy are:

- Maintain and modernize the structural fabric

⁶⁸ Coalition Agreement between CDU, CSU and SPD for the 18th parliamentary term, p. 529.

⁶⁹ Cf. Federal Ministry of Transport and Digital Infrastructure: *Grundkonzeption für den Bundesverkehrswegeplan 2015*, 2014, p. 27.

- Reduce freight transport costs
- Improve the flow of traffic and remove bottlenecks (including traffic management)
- Increase the reliability of transport operations
- Improve links to and from intermodal hubs (e.g. airports, ports or combined transport terminals)

Shifting freight traffic from the roads to the railways and waterways will relieve the pressure on the roads and make it possible to save millions of tonnes of greenhouse gas emissions.

The objectives of the National Ports Strategy are:

- Shift freight traffic to the railways and waterways
- Increase short sea shipping's and inland waterway transport's share of freight transport as an alternative to land-based transport

The provision of a dense network of high-capacity sea and inland ports which are able to handle ships of all sizes and types likely to be encountered in any given trade is active environmental protection, taking into account rules and regulations of water protection law, because in this way it is possible to optimize transport routes and deploy the different modes of transport in an optimum manner. If the existing network of sea and inland ports is to be preserved and evolved, the ports must be provided with sufficient potential land.

The objective of the National Ports Strategy is:

- Support the players involved in resolving conflicting uses and addressing the scarcity of land

Enhance the competitiveness of the ports, progress the interlinking of ports

The projects delivered within the framework of the Federal Government's ISETEC I and ISETEC II funding initiatives have helped to make operational activities at ports and in hinterland transport more efficient and further optimize the quality of the services provided. The ISETEC research projects and innovations have improved the competitiveness of the German ports.

The objectives of the National Ports Strategy, to be achieved through the funding of research and innovative digital infrastructure, are:

- Further improve the competitiveness of the sea and inland ports
- Reduce turn-around times at ports, cut CO₂ emissions and create more jobs

- Improve the exchange of data along the logistics chains

Overall network planning must take greater account of the trimodal inland ports than in the past in order to relieve seaports of functions that can also be performed at inland ports and freight distribution centres if this is necessary from a business management point of view. Collaborative partnerships of sea and inland ports among one another and between seaports and inland ports can optimize and accelerate freight movements, generate synergies and widen the range of services provided by the ports.

The objectives of the National Ports Strategy are:

- Support collaborative partnerships between ports and strategic alliances where this makes economic sense and is permissible under competition law
- Develop a core network of inland port locations, freight distribution centres and marshalling yards that can supplement and support the functions of the seaports as major links of foreign trade
- Create infrastructure corridors passing through the sea and inland ports

Shape European and international ports policy

European ports policy is playing an increasingly large role in port-related legislation. Given the very different port systems in the EU, among other things, Germany must take care to ensure that the European rules are appropriate, do not have an adverse impact on the competitiveness of the German ports and are in keeping with the principle of subsidiarity. They must not run counter to the responsibilities of the Federal Government and federal states. European Union funding instruments must be used.

The objectives of the National Ports Strategy are:

- Uniform, fair and transparent conditions of competition between the European ports, having due regard to heterogeneous nature of the European ports landscape
- Avoid distortion of competition vis-à-vis non-European ports
- Prevent different rules for different trades
- Preserve national scope for action to evolve the ports
- Avoid additional administrative burdens on the public authorities and the industry through European rules
- Germany must exert intensive influence at an early stage on crucial European rules
- Use European funding for upgrading infrastructure

Protect the environment, mitigate climate change, support the use of alternative fuels, progress offshore wind energy

It is self-evident that the maritime shipping industry must play its part in reducing pollutant and greenhouse gas emissions and protecting the aquatic environment, although in terms of freight moved it is the most environmentally friendly mode of transport. International⁷⁰ and European⁷¹ legislation requires the deployment of a network of LNG refuelling points and shore-side electricity supply systems at sea and inland ports, having due regard to value for money principles.

The objectives of the National Ports Strategy are:

- Systematically unlock the potential inherent in shipping to reduce greenhouse gas and sulphur emissions in order to achieve the Federal Government's environmental and climate change targets
- Work towards uniform environmental and climate standards at European and international level
- Avoid distortions of competitions resulting from different environmental standards between trades
- Deploy a demand-driven infrastructure for alternative fuels and shore-side electricity supply for the waterborne transport sector
- Ensure that the provision of financial assistance to alternative fuels for shipping is in conformity with state aid rules
- Support voluntary initiatives to reduce environmentally harmful emissions from shipping

The expansion of offshore wind energy can have positive effects on the regional economies around port cities. Given the high level of investment costs, the future need for port infrastructure must be realistically forecast in order to avoid inappropriate investment.

The objectives of the 2015 National Ports Strategy are:

- Support the efficient expansion of offshore wind energy and evolve port capacity in line with requirements
- Ensure that the port capacity for offshore wind energy is fully utilized

⁷⁰ International Maritime Organization: *International Convention for the Prevention of Pollution from Ships, MARPOL, Annex VI*

⁷¹ *Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure*, Brussels, October 2014.

- Progress the development of alternative use strategies to ensure that the sites are continuously operating at full capacity

Continue to provide high-quality training and good jobs at ports

The sea and inland ports offer a broad spectrum of attractive jobs with a high level of skills and a high degree of specialization. The ports address the competition for the much-in-demand skilled workers by launching training initiatives and operating their own educational institutions.

The objectives of the National Ports Strategy are:

- Well-trained skilled labour and attractive, secure jobs at the ports
- Train and employ long-term unemployed people
- Increase the share of women in the port workforce

Ensure appropriate safety and security

Ports are exposed to terrorist threats and natural hazards, in particular, and special attention has to be paid to the IT-based linkages and dependencies and their risks.

The objectives of the 2015 National Ports Strategy are:

- Risk-based review, coordination and, if necessary, evolution of the measures to protect the sea and inland ports
- Close cooperation between all the relevant players in preventing and managing incidents
- International harmonization of security-related regulations wherever possible
- Harmonization of measures across federal states boundaries
- Avoid imposing unnecessary burdens on the ports through security measures
- Evolve the open risk communication between the Federal Government, federal states, ports and the public

Better coordinate ports policy

The sea and inland ports are increasingly the focus of national and international policy, which means that the need for coordination between the players is growing. In the interests of macroeconomic development and the ports, the Federal Government and federal states must reach agreements on new arrangements for cooperation in ports policy.

The objectives of the National Ports Strategy are:

- A new structure of cooperation and information exchange between the Federal Government and federal states in planning the development of ports
- Consolidate the activities of the Federal Government and federal states to shift freight traffic from the roads to the railways and waterways in line with market conditions
- Improve cooperation and information between the Federal Government and federal states in the negotiations on and implementation of European and international port-related regulations

Measures of the 2015 National Ports Strategy

The following chapter describes measures that are to be implemented by the Federal Government, the federal states, the ports sector and the unions in following action areas:

- infrastructure;
- competitiveness and interlinking of seaports and inland ports;
- European and international ports policy
- environmental protection and climate change mitigation, alternative fuels, offshore wind energy
- training and employment;
- safety and security
- coordination of ports policy.

Implementation of the measures is designed to exploit the opportunities identified in order to further improve the competitiveness of the German sea and inland ports. Measures from the 2009 Ports Strategy that are still relevant but have not yet been implemented have been updated and included in the present ports strategy.

The Federal Government will take the measures that relate to it into account in its financial planning and will implement them. The Federal Government expects the federal states and local authorities, the ports sector and the trade unions to likewise implement the measures addressed to them.

The term "ports sector" covers port operators and port companies. The paragraph headed "Responsibility", which is to be found in each measure, states whether the port operators, port companies or both are responsible for implementing the measure.

1. Measures for the targeted upgrading of the port-related infrastructure;

1.1 Conclude the 2015 Federal Transport Infrastructure Plan

Current situation

The FTIP 2015, which is currently being prepared at the Federal Ministry of Transport and Digital Infrastructure, is used to comprehensively appraise project ideas based on an up-to-date traffic forecast. On this basis, the projects are allocated to different priority categories. With the basic approach, which was published in April 2014, the Federal Ministry of Transport and Digital Infrastructure presented the guidelines for stringent prioritization in the

FTIP.⁷² This approach comprises two main principles – structural maintenance is to take precedence over construction and upgrading, and there is to be transparent prioritization of the projects in line with requirements. The National Scheme of Priorities ensures that the bulk of the funds for construction and upgrading is focused on projects of national importance. The focus will be on removing bottlenecks on main arteries and junctions of the transport network.

Information on existing or foreseeable bottlenecks and measures to resolve them can be found, for instance, in the Infrastructure Condition and Development Report, which is published annually by the Federal Railway Authority. In many cases, even minor projects result in appreciable capacity gains on the rail network, for instance by creating alternatives to the main routes currently used by inland traffic to and from seaports. The projects notified for the FTIP 2015 can be found on the Federal Ministry of Transport and Digital Infrastructure's website.⁷³

Description of the measures

- The **Federal Government** will appraise the projects proposed for the FTIP 2015 on the basis of the transport interconnectivity forecast for 2030 and the improved methodology.
- In the Draft FTIP 2015, the **Federal Government** will submit a proposal on the priority categorization and the probable division of funds between the modes of transport.
- In all measures, the **Federal Government** will take into account the interests of environmental protection and support precautionary schemes.
- Before the cabinet decision, the **Federal Government** will subject the FTIP 2015 to a consultation exercise in which all stakeholders can make comments in writing or electronically.
- As a basis for the future prioritization of investment in structural maintenance and refurbishment, the **Federal Government** will present a transport infrastructure report every two years making the condition of the federal transport infrastructure transparent, documenting backlogs and providing information about the investment required.
- The **Federal Government** will give priority to the removal of bottlenecks on seaward approaches, inland waterways and hinterland connections to and from the ports.

⁷² Federal Ministry of Transport and Digital Infrastructure: *Grundkonzeption für den Bundesverkehrswegeplan 2015*, 2014.

⁷³ <http://www.bmvi.de/SharedDocs/DE/Artikel/UI/bundesverkehrswegeplan-2015-projektanmeldungen.html>

Impact

Application of the improved appraisal methodology and priority categorization will make the FTIP 2015 a realistic and fundable overall approach. Priority will be given to the removal of bottlenecks on seaward approaches, inland waterways and hinterland connections. The consultation exercise and transport infrastructure report to be presented regularly will enhance the public transparency of the planning activities and result in greater acceptance of infrastructure upgrading.

Responsibility

The Federal Government is responsible for implementing these measures.

Budgetary relevance

The costs of the measures will be covered by the Federal Government.

EU relevance

These measures are consistent with the objectives of EU transport policy.

Implementation periods

The draft of the new FTIP is due to be published in 2015.

The infrastructure report is to be presented every two years.

1.2 Ensure the funding of transport infrastructure in the long term

Current situation

The Federal Government accords great priority to investment in transport infrastructure and has implemented an infrastructure ramp-up in this area while complying with the requirements of fiscal consolidation.

In the years from 2014 to 2017, the Federal Government is making available an additional €5 billion for transport infrastructure investment. To maintain this level of investment, a further €1.8 billion will be provided in both 2018 and 2019. Within the scope of the 2016-2018 Investing in the Future Package, an additional approximately €3.1 billion euros will be provided as ancillary funding for necessary capital investment projects in the waterway, rail and road sectors. On 1 July 2015, the HGV tolling scheme was extended to a further 1,100 km of federal highways, and since 1 October 2015 it has also applied to HGVs with a gross vehicle weight of 7.5 tonnes or more. The 2014 budget provides, for the first time, for the possibility of carrying over planning and funding to the subsequent year, which means that

funds that are not used continue to be available without any cuts in departmental budget 12. The public-private partnership (PPP) procurement option can – if it proves to represent value for money in the individual projects – result in a greater involvement of private sector capital in the financing of public infrastructure.

Description of the measures

- The **Federal Government** will make available additional funding for investment in the federal transport infrastructure: €5 billion in the 18th parliamentary term; in in both 2018 and 2019, an additional €1.8 billion will be provided.
- The **Federal Government** will retain the instrument of carrying over planning and funding to the subsequent year.
- Within the scope of the €10 billion Investing in the Future Programme, the **Federal Government** will invest around €3.1 billion in transport infrastructure between 2016 and 2018.
- The **federal states** will likewise increase their transport investment in line with requirements.
- The **Federal Government** will extend the HGV tolling scheme to all federal highways in 2018.
- The **Federal Government** will engage in considerations – taking competition aspects into account – to determine the extent to which the transit charges on the Kiel Canal can be raised.
- The **Federal Government** will review the impact of its plans to apply the "user pays" principle to federal waterways on the competitiveness of the ports.
- The **Federal Government** will make use of cooperation between public and private sector backers or infrastructure companies if this can cut costs and enable projects to be implemented in a manner that constitutes better value for money.
- **Federal states** and **local authorities** will also make use of the instrument of public-private partnerships wherever this is possible and makes economic sense.

Impact

The raising of the amount of conventional public funding and the provision of additional funding within the scope of the €10 billion Investing in the Future Programme, the instrument enabling funding to be carried over to the subsequent year without an obligation to make cuts, the increase in funding for links to and from ports and inland waterways, the generation of

additional public funding by extending the "user pays" principle and the increase in transport investment by the federal states will help to ensure the maintenance of the structural fabric and the construction and upgrading of the transport infrastructure.

Responsibility

Ensuring the provision of modern transport infrastructure is a joint responsibility of the Federal Government, federal states and local authorities. The Federal Government is responsible for the structural maintenance and modernization of the federal trunk roads, federal railways and federal waterways.

Budgetary relevance

The funding of transport infrastructure is a Federal Government, federal state and local authority responsibility.

EU relevance

These measures are consistent with the objectives of EU transport policy.

Implementation periods

Funding provided by the Federal Government for transport investment will be increased to €13.4 billion per year over the period to 2018.

In the €10 billion investment programme, additional funding totalling around €3.1 billion will be available for investment in the transport sector.

HGV tolling was extended to a further 1,100 km of federal highways on 1 July 2015.

HGVs with a gross vehicle weight of 7.5 tonnes or more were included in the tolling scheme as of 1 October 2015.

HGV tolling will be extended to all federal highways in 2018.

Infrastructure charging (passenger car tolls) will be introduced after it has been confirmed that it complies with European law.

The increase in transport investment by the federal states is a permanent task.

1.3 Press ahead with upgrading the seaward approaches

Current situation

The largest container ships in the Asia-Europe trade now have a length of 400 metres, a width of 60 metres, a draught of 16 metres and can carry over 19,000 TEUs^{74,75}. There are currently plans to build container ships with a slot capacity of 22,000 TEUs, which means that it has to be assumed that the growth in sizes in container shipping will continue. In the bulk cargo and cruise shipping sectors, too, a trend towards the deployment of increasingly large ships is apparent. Constraints on the development of ship sizes are imposed not by technical feasibility in the shipbuilding industry but by the seaward approaches and port infrastructures.

To enable the ports of Hamburg, Bremen and Bremerhaven to continue to be able to handle mega container carriers and to be able to compete successfully, implementation of the planned fairway adaptations on the Outer and Lower Elbe and on the Outer Weser is necessary. If the Elbe and Outer Weser fairways are not deepened, the logistics hubs of Hamburg and Bremerhaven would be left behind by developments. In this case, the likely outcome would be a shift of operations to Rotterdam and Antwerp and an increasing volume of inland traffic to use the central freight transport hubs established there. The JadeWeser Port at Wilhelmshaven would not be able to replace the services provided by Hamburg and Bremerhaven. It forms a separate and additional installation in the logistics of the increasing container handling operations.

Another essential scheme is the adaptation of the Lower Weser fairway so that the ports of Brake and Bremen can continue to compete successfully in providing their specific services (especially grain, animal feed, ore and coal movements).

The port of Emden is an international hub for vehicle movements and occupies 3rd place in the EU in these movements. To enable this location to retain and build on its successful competitive position, it is also necessary to deepen the Outer Ems fairway. The request for plan approval was submitted on 20 December 2012.

In the legal action brought by environmentalist groups against the adaptation of the Outer and Lower Weser fairways, the Federal Administrative Court submitted questions relevant to the interpretation of the Water Framework Directive (WFD) to the European Court of Justice (ECJ) and subsequently also suspended the legal action brought by environmentalist groups

⁷⁴ TEU = Twenty Feet Equivalent Unit.

⁷⁵ Cf., for instance, the CSCL Globe, which was launched in 2014.

against the deepening of the Elbe, because of the relevance of the questions to these proceedings as well, pending a decision by the ECJ. The ECJ announced its decision on 1 July 2015, with the consequence that the ball is now back with the Federal Administrative Court in both cases. In both cases, the documents have to be revised in accordance with the requirements stipulated by the ECJ and the guidance orders issued by the Federal Administrative Court. Against this background, it is not possible to provide a binding timetable stating when construction go-ahead is likely to be given in the two cases. The same applies to the adaptation of the Outer Ems.

The Kiel Canal is one of the major transport arteries in Northern Europe. It connects Scandinavia and the Baltic States to international traffic and is an attractive link between the North Sea ports in Belgium, the Netherlands and Germany and the Baltic Sea ports and their adjacent economic areas. Over 40,000 ships transit the Kiel Canal each year. Because of its great transport importance, the Federal Government's attention is focused on safeguarding the infrastructure of the Kiel Canal in the long term. On 12 April 2014, the contract for the accelerated construction of a third large lock chamber ("5th chamber") at Brunsbüttel was awarded. This chamber will cost a total of around €550 million and is a prerequisite for the later refurbishment of the two existing large chambers. In addition, the Kiel Canal is to be adapted to meet the more demanding transport requirements. The planned upgrade of the eastern section of the Kiel Canal is defined as "begun" for the FTIP 2015.

The seaport of Rostock is the only German deep-water port and one of the leading all-purpose ports on the Baltic Sea. The port's activities focus on the handling of ro-ro and ferry traffic as well as the handling of general and bulk cargo. The water depth of 14.50 m is less than that of its Polish competitor Gdansk (16.5 m water depth), which is especially significant for bulk cargo traffic. For this reason, Mecklenburg-Western Pomerania notified the deepening of the approach to the seaport of Rostock and the deepening and widening of the seaward approach to the port of Wismar for inclusion in the FTIP 2015. Regardless of the fact that a planning contract has been awarded for the seaward approach to Rostock, both projects will be appraised for prioritization using the FTIP methodology because they have not yet been begun.

Description of the measures

- As soon as the construction go-ahead has been given, the **Federal Government** will start the fairway adaptations on the Lower and Outer Elbe and the Lower and Outer Weser.

- The **Federal Government** will appraise and prioritize the "deepening of the Outer Ems" project within the scope of the FTIP 2015.
- Once the third large lock chamber on the Kiel Canal at Brunsbüttel has been completed, the **Federal Government** will refurbish the lock installation that exists there.
- The **Federal Government** will repair the lock installation on the Kiel Canal at Kiel-Holtenau.
- The **Federal Government** will upgrade the eastern section of the Kiel Canal and replace the high-level bridge at Levensau.
- The **Federal Government** will include the deepening of the Kiel Canal by one metre in the appraisal and prioritization within the scope of the FTIP 2015.
- The **Federal Government** will appraise and prioritize the "deepening of the maritime channel at Rostock" and "deepening and widening of the seaward approach to the port of Wismar" projects within the scope of the FTIP 2015.

Impact

The measures will enable German seaports to handle the largest container ships currently operating in line with requirements. As a result, their competitiveness vis-à-vis their European rivals will be preserved. The refurbishment work at the lock installations on the Kiel Canal will safeguard their availability and reliability. The upgrade of the eastern section of the Kiel Canal will remove a bottleneck for larger canal-going ships.

Responsibility

The Federal Government is responsible for implementing these measures.

Budgetary relevance

The costs of the measures will be covered by the Federal Government.

EU relevance

These measures are consistent with the objectives of EU transport policy.

Implementation periods

Adaptation of the Lower and Outer Elbe fairways: reliable information on the start of construction cannot be provided until the Federal Administrative Court has taken its decision. On the basis of current planning, the deepening of the fairway is expected to take around two years.

Adaptation of the Lower and Outer Weser fairways: reliable information on the start of construction cannot be provided until the Federal Administrative Court has taken its decision. On the basis of current planning, dredging is expected to take around six months for the Lower Weser and around nine months for the Outer Weser.

Deepening of the Outer Ems: the duration of dredging cannot yet be estimated.

Kiel Canal:

- construction of the fifth lock chamber at Brunsbüttel by 2021 (planned to open to traffic in the second half of 2021);
- refurbishment of the lock installation at Brunsbüttel expected to take around 6 years after completion of the fifth lock chamber;
- refurbishment of the lock installation at Kiel-Holtenau expected to take around ten years after start of construction;
- upgrading of the eastern section and replacement of the bridge at Levensau expected to take around ten years;
- deepening of the entire Kiel Canal by one metre expected to take eight years after start of construction;

Deepening of the maritime channel at Rostock: no plan approval yet.

Deepening and widening of the approach to Wismar: no plan approval yet.

1.4 Upgrade hinterland connections in a targeted manner

Current situation

As a result of the large volume of cargo handled and the associated freight movements, especially on the roads and railways, the hinterland connections to and from the German seaports are very busy. Over the period to 2030, the level of inland traffic to and from seaports will increase by around 25 percent more than the level of other forms of freight traffic. A total of around 8 percent of the volume of traffic in Germany is connected with the seaports.⁷⁶ This share is significantly higher in the container traffic sector.

Traditionally, the railways and inland waterways have exhibited higher modal shares in inland traffic to and from seaports compared with traffic as a whole, because disproportionately high amounts of dry (iron ore, coal, fertilizers, non-metallic minerals, chemical goods, secondary

⁷⁶ BVU, ITP, IVV, PLANCO: *Verflechtungsprognose 2030 Los 3: Erstellung der Prognose der deutschlandweiten Verkehrsverflechtungen unter Berücksichtigung des Luftverkehrs*, June 2014, p. 283 und p. 318.

materials, etc.) and liquid bulk cargo (crude oil, petroleum products, gas) are moved by inland traffic to and from seaports. As the forecast of transport interconnectivity for 2030 shows, the railways and inland waterways account for above average shares here, because of the great number and concentrated nature of the cargoes. In the case of suction goods (grain, animal feed and oil seeds) and general cargo, road vehicles dominate, because of the smaller cargoes. In 2010, railways and inland waterways accounted for 29 and 37 percent respectively of inland traffic to and from seaports.⁷⁷

The tonnage of freight transported in the road haulage sector will rise from just under 3.1 billion tonnes in 2011 to 3.6 billion tonnes in 2030, which is equivalent to an increase of 17 percent. The tonnage of freight transported by the railways will grow by 24 percent by 2030 compared with 2010. The rate of growth in the inland waterway sector (20 percent) will be higher than that in the road sector.

With a volume of 134.4 million tonnes (44.3 percent), the predominant share of inland traffic to and from ports in 2010 came from German ports, closely followed by the Netherlands (37.7 percent) and Belgium (10.8 percent).⁷⁸ The largest German ports in terms of inland volume are Hamburg (47 percent), Bremen and Bremerhaven (22 percent taken together), Lübeck (9 percent) and Rostock (4 percent).⁷⁹ Whereas the North Sea ports handle mainly bulk cargo and containers, some of which continue their journey inland by rail, the Baltic Sea ports of Lübeck, Kiel and Rostock handle mainly ro-ro traffic, with a correspondingly high share on the roads in their hinterland.

In 2008, the transport ministers of the Northern German federal states adopted their project proposals for the provision of links to and from the German seaports. The following tables provide an overview of the state of play of implementation (April 2015) of the *Ahrensburg List*:

⁷⁷ Ibid. p. 319ff.

⁷⁸ MWP, UNICONSULT, Fraunhofer: *Verkehrsverflechtungsprognose 2030 sowie Netzumlegung auf die Verkehrsträger*, May 2014, p. 176.

⁷⁹ Ibid. p. 151.

Table 1: Rail, road and waterway projects in the Ahrensburg List

Projects to be reviewed and ongoing projects	Projects completed or close to completion
<i>Rail</i>	
Y route (various alignment options are currently being reviewed)	Electrification of the Hamburg – Lübeck – Travemünde line (completed)
Upgrading (electrification) of the Oldenburg – Wilhelmshaven line (construction stages I, II and IIIa have been completed)	Upgrading the Rostock – Berlin line (conclusion expected by late 2015)
	Upgrading the Langwedel – Uelzen line (no benefit to the economy as a whole)
	Widening the Stelle – Lüneburg line to three tracks (triple tracking completed, ETCS scheduled to start operation in 2017)
	Upgrading the Berlin – Pasewalk – Stralsund line (provision of electronic signal box equipment completed, renewal of the permanent way is in progress)
	Upgrading the Lübeck/Hagenow Land – Rostock – Stralsund line (some sections completed, for the other sections there is no proof of their benefit to the economy as a whole)
	Widening the Pinneberg – Elmshorn line to three tracks (no longer required)
	Measures to relieve congestion at the Hanover rail hub (double tracking of the Hildesheim – Gross Gleidingen section has relieved congestion at the hub)
	Measures to relieve congestion at the Bremen rail hub (measures identified have been implemented as part of the Immediate Action Programme for Inland Traffic to and from Seaports)
	Measures to relieve congestion at the Hamburg rail hub (measures have been implemented as part of the Immediate Action Programme for Inland Traffic to and from Seaports, further measures will follow in the Second Immediate Action Programme for Inland Traffic to and from Seaports)

Projects to be reviewed and ongoing projects	Projects completed or close to completion
Road	
Upgrading of the A 7 motorway south of the Elbe (Süderelbe junction, plan approval procedure underway, draft design for the northern section currently being prepared)	Widening the A 1 motorway to six lanes in Hamburg and between Hamburg and Bremen (completed)
Upgrading of the A 7 motorway north of the Elbe (HH) (Schnelsen and Stellingen sections under construction, Altona section at the planning stage)	Upgrading of the A 7 motorway between Neumünster Nord junction and HH-Nordwest junction (completion in late 2018)
Construction of the A 14 motorway between Schwerin and Magdeburg (some sections completed, some sections under construction, objections raised to some sections in the plan approval procedure)	
Construction of the new A 26 (east) motorway (planning is taking place section-by-section, draft design for the first section has been submitted to Federal Ministry of Transport and Digital Infrastructure)	
Construction of the new A 26 motorway from Stade to Hamburg (some sections completed, some sections under construction, some sections in the plan approval procedure)	
Construction of the new A 281 motorway (Bremen spur) (some sections completed, some sections in the plan approval procedure)	
Construction of the new A 20 motorway (northwestern Hamburg bypass) (some sections completed, some sections in the plan approval procedure and at the planning stage)	
Construction of the new A 20 (coastal) motorway (some sections at the preliminary planning stage, some sections in the plan approval procedure)	
Extension of the A 21 motorway (eastern Hamburg bypass in the south, upgrading of the B 404 federal highway in the north) (some sections open to traffic, some sections under construction, some sections in the plan approval procedure, some sections at the preliminary planning stage, no planning mandate for Hamburg bypass)	

<p>Construction of the new A 39 motorway from Lüneburg to Wolfsburg (some sections in the plan approval procedure, some sections at the preliminary planning stage)</p>	
<p>Upgrading of the B 96 federal highway in Mecklenburg-Western Pomerania (Neustrelitz – Neubrandenburg section at the preliminary design stage. All other sections are already open to traffic or under construction)</p>	

Projects to be reviewed and ongoing projects	Projects completed or close to completion
Waterway	
Adaptation of the Lower and Outer Elbe fairways (see measure 1.1)	Upgrading of the Middle Weser (some sections completed, some sections under construction)
Adaptation of the Lower and Outer Weser fairways (see measure 1.1)	
Locks on the Elbe-Lübeck Canal	Lauenburg Lock is open to traffic, earlier replacement of the other locks is being reviewed as part of the FTIP 2015

The "Düsseldorf List", which was submitted to the Federal Ministry of Transport and Digital Infrastructure by the states of Bavaria, Baden-Württemberg, Hesse, North Rhine-Westphalia and Rhineland-Palatinate in November 2013, is the counterpart of the Northern German catalogue of infrastructure schemes ("Ahrensburg List") and names the 36 top-priority upgrade projects in the road, rail and waterway sectors on the territory of the Federal Republic of Germany south of Lower Saxony as hinterland connections to and from the North Sea ports. All transport projects on the "Ahrensburg List" and the "Düsseldorf List" on which work has not yet commenced are subject to review and prioritization in the FTIP 2015.

Because of its more recent date of publication, the Düsseldorf List, unlike the Ahrensburg List, contains predominantly projects that are at an early planning stage or on which work has not yet commenced. For this reason, a detailed account of their state of play is not given here.

Table 2: Infrastructure projects identified by the land-locked federal states of Bavaria, Baden-Württemberg, Hesse, North Rhine-Westphalia and Rhineland-Palatinate for strengthening inland ports – Düsseldorf List

<i>Waterway</i>
Raising of bridges on the canal network for seamless double-stack, or if possible triple-stack, container services
Making the entire Western German canal network navigable by large self-propelled barges
Ensuring a fairway depth of 2.80 m on the Rhine upstream to Koblenz
Increasing the fairway depth on the Rhine on the section between Mainz/Wiesbaden and St. Goar from 1.90 m to 2.10 m
Increasing the Fairway depth from Aschaffenburg to the confluence with the Rhine
Construction of a second chamber at 10 German Moselle locks
Improving the waterborne links to and from the inland ports
Raising of railway bridges
Progressive renewal of the locks on the Main
Renewal and lengthening of the locks on the Neckar for 135 m vessels
<i>Road</i>
Widening of the A 57 motorway to six lanes between Meerbusch interchange and Kamp-Lintfort interchange
B 44 federal highway, repair/renewal of Hochstrasse-Nord in Ludwigshafen
High-capacity Rhine crossing between Wörth and Karlsruhe
A 64 motorway, Trier junction (B 51) – Trier/Ehrang (B 52)
B 44 federal highway, Gernsheim/Kleinrohrheim bypass
B 47 federal highway, Lampertheim/Rosengarten bypass
B 47 federal highway, widening of the Bürstadt bypass to four lanes
A 5 motorway, Heidelberg interchange – Walldorf interchange
A 8 federal motorway, Pforzheim/Nord junction – Wurmberg junction (Enz Valley crossing)
A 3 federal motorway, Regensburg interchange – Rosenhof junction with 2 sections
A 6 motorway, Nürnberg/S interchange – Nürnberg/Ost interchange
B 8 federal highway, Passau-Auerbach exit slip road
B 299, Mühlhausen bypass with link road to the docks

Rail
Construction of the third track as a continuation of the Betuwe Line between Emmerich and Oberhausen
Upgrading of the Iron Rhine between Antwerp and North Rhine-Westphalia
Removal of the bottlenecks on the line from the Dutch/German border at Kaldenkirchen via Viersen/Rheydt to Rheydt/Odenkirchen
Capacity enhancement at the Cologne rail hub
Progressive widening to three tracks between Aachen and Düren and removal of further bottlenecks in the Cologne area
Electrification of the Hof – Regensburg and Hof – Nuremberg railway lines
Provision of an electrified rail link to the docks in Aschaffenburg
Electrification of the line from Nuremberg via Marktredwitz to the German/Czech border at Schirnding
Alternative freight train line to relieve congestion in the Rhine Valley
Upgrading of the Karlsruhe–Offenburg–Freiburg–Basle line (Rhine Valley Line)/construction of new line
Upgrading of the Kehl – Appenweier line
Construction of the new Rhine/Main – Rhine/Neckar line
Mannheim rail hub

Interlinking transport modes in an intelligent manner is an important element of the supply of goods and of competitive enterprises. The infrastructure investment of the FTIP 2015 is designed to improve the links to and from intermodal hubs, such as seaports, airports and combined transport terminals. The hinterland connections to and from seaports, in particular, will play a major role in the FTIP 2015. Good transport conditions reduce the costs of freight transport, enhance the efficiency of transport operations and the competitiveness of enterprises and, in doing so, provide a major contribution to the growth of the economy. These effects are measured in the appraisal of projects and, in addition, taken into account when the projects are prioritized. Inland traffic to and from seaports will benefit from the fact that one of the key objectives of the FTIP 2015 is the removal of the largest quantitative and qualitative bottlenecks on the transport network. This will result in the prioritization of busy corridors and hubs, for instance along hinterland links to and from seaports.

Description of the measures

- The **Federal Government** and the **federal states** will intensify their dialogue on the federal states' transport investment.
- In the National Scheme of Priorities, the **Federal Government** will give priority to hinterland links to and from seaports over economically less significant projects.
- Within the scope of the FTIP 2015, the Federal Government will – bearing in mind the likely increase in the volume of freight traffic from the ports – consider which of the projects proposed by the federal states are to be given priority in implementation.
- The **Federal Government** will give priority to implementing those projects on the Ahrensburg List that are beneficial to the economy as a whole in accordance with the FTIP 2015's reviewing method.
- The Northern German **federal states** will consider how the Ahrensburg List can be updated.
- The **Federal Government** will explore the possibility of giving priority to implementing those projects on the Düsseldorf List that are beneficial to the economy as a whole in accordance with the FTIP 2015's reviewing method and on which work has not yet commenced.
- The **Federal Government** will launch a Second Immediate Action Programme for Inland Traffic to and from Seaports.
- In its infrastructure planning, the **Federal Government** will also take account of the importance of the ZARA⁸⁰ ports and the ports of Eastern and Southern Europe to the German economy.

Impact

Intensification of the dialogue between the Federal Government and the federal states on transport investment and the improvement of cooperation between the Federal Government and the federal states in ports policy (cf. measure no 7.1) will ensure the targeted upgrading of the hinterland connections. Planning mistakes will be avoided. Implementation of those projects on the Ahrensburg List that are economically beneficial will reduce and remove bottlenecks on the hinterland connections to and from the German seaports and will ensure the smooth movement of freight. The review of the Düsseldorf list and its inclusion in federal transport infrastructure planning will make it possible to focus on infrastructure projects that

⁸⁰ ZARA = Zeebrugge, Amsterdam, Rotterdam and Antwerp.

the federal states on the Rhine and Danube consider to be essential. The Second Immediate Action Programme for Inland Traffic to and from Seaports will target and remove bottlenecks on the rail network in the hinterland of the seaports. Taking account of the ZARA ports and the ports of Eastern and Southern Europe in infrastructure planning will ensure the accessibility of the markets, especially in North Rhine-Westphalia, Baden-Württemberg and Bavaria.

Responsibility

The Federal Government is responsible for implementing most of these measures. Intensification of the dialogue between the Federal Government and the federal states must be done by the Federal Government and the federal states. The Northern German federal states must consider how the Ahrensburg List can be updated.

Budgetary relevance

The costs of the measures will be covered by the Federal Government, to the extent that it is responsible.

EU relevance

These measures are consistent with the objectives of EU transport policy.

Implementation periods

Dialogue on the federal states' transport investment: permanent task.

Implementation of the Ahrensburg List: see table above.

Lifetime of the Second Immediate Action Programme for Inland Traffic to and from Seaports: 2015 to 2020.

Taking the ZARA ports into account: permanent task.

1.5 Improve the provision of landside links to inland ports and upgrade federal waterways

Current situation

Inland waterways are a mode of transport that is safe and climate-friendly, and the role they play in the transport system as a whole will have to be further enhanced in the years ahead if we are to be able to manage the likely growth in the volume of traffic, especially inland traffic to and from seaports. One of the prerequisites for greater connectivity of the sea and inland ports is that they must be easily accessible by rail, road and waterway. The situation is not

always optimum, especially in the case of inland ports in certain conurbations, because of the high levels of traffic. Infrastructure links to and from especially busy inland ports should be given priority over economically less significant projects. In this context, however, it should be borne in mind that less busy ports may be very important for individual companies, for instance in the project cargo sector. This means that not only the volume of cargo handled but also the impact of the individual inland ports on the regional economy should be considered.

At several inland port locations, high levels of traffic lead to problems in reaching the ports by road. This applies to the Rhine-Ruhr conurbation and the urban areas on the Rhine, Main, Neckar and Danube. At other locations, the long distance from the nearest motorway detracts from the quality of the links. A third problem area relates to port access routes that pass through built-up areas, lessen the quality of residential areas and involve the risk of conflict with residents. It is frequently the case that large and heavy project cargoes are handled at inland ports, which then have to cover the "last mile" by road as movements of abnormally heavy loads. In order to move these kinds of goods to their final destination by road, the existence of load-bearing and permeable infrastructure is of great importance.⁸¹ For this reason, it is necessary to take even greater account of the requirements of abnormally heavy loads when designing roads.

Rail-wise, some inland ports have limits on possible train lengths and constraints on shunting areas, which hamper the marshalling of block trains. In some cases, this is aggravated by insufficient rail links between sea and inland ports.

The total length of the federal waterways is around 7,300 km, of which inland waterways account for around 6,000 km. Of these, around 4,200 km are used for the movement of freight. Most inland waterway traffic is on the Rhine. The general condition of the waterways is crucial in determining the intermodal competitiveness of waterborne freight transport. Important factors here are the laden draughts, bridge clearances and permissible vessel dimensions. The upgrading of the waterway infrastructure is currently hampered by the insufficient planning capacity in the Waterways and Shipping Administration.

To strategically prioritize those projects that have proved to represent value for money, the Federal Government has developed a network structure for the federal waterways, whose categories are based on the transport significance of origin-destination pairs (volume of goods carried).

⁸¹ Cf. Bundesfachgruppe Schwertransporte und Kranarbeiten: *Masterplan Schwergut*, August 2015, p. 4.

Description of the measures

- The **federal states** and **local authorities** will upgrade links to and from inland ports where these links are situated in their area of responsibility and wherever this is economically reasonable, in order to ensure smooth landside movements to and from ports.
- The **federal states** and **local authorities** will take account of the requirements of the carriage of abnormal loads when designing road facilities wherever this is necessary and economically feasible.
- Wherever this is economically viable, the **ports sector**, **local authorities** and **DB Netz AG** will remove the constraints on shunting areas where these constraints are in their area of responsibility and will provide rail links between sea and inland ports that are commensurate with demand.
- Subject to the value for money assessment within the scope of the FTIP 2015 and the availability of public funds, the **Federal Government** will upgrade the sections of the Category A waterways for the necessary vessel sizes as quickly as possible.
- Subject to the value for money assessment within the context of the FTIP 2015 and the availability of public funds, the **Federal Government** will optimize the sections of the Category B waterways wherever this is necessary. When investment is made in replacement infrastructure in Category B, due regard will be given to the upgrading parameters of Category A.
- The **Federal Government** will maintain the existing Category C sections.
- The **Federal Government** will take measures (for instance in the Waterways and Shipping Administration's planning activities) to ensure that the funds available for investment in the waterways can be used for construction within an appropriate period of time.

Impact

Accelerating the upgrading of the landside links to and from inland ports, taking account of the requirements of the carriage of abnormal loads, and upgrading the inland waterways will improve the competitive position of the inland ports and inland waterway transport vis-à-vis other modes of transport and will promote modal shift. Removing the constraints on the shunting areas will make it possible to marshal longer trains and will accelerate rail freight movements. Additional planning capacity in the Waterways and Shipping Administration will make it possible to plan and implement more waterway projects in a shorter period of time.

Responsibility

The federal states and local authorities are responsible for the links to and from inland ports referred to in the measure. The shunting areas are the responsibility of DB Netz AG, the local authorities and the port operators. Upgrading the waterways and increasing the Waterways and Shipping Administration's planning capacity are Federal Government responsibilities.

Budgetary relevance

The costs of the measures will be covered by the Federal Government, federal states, local authorities, DB Netz AG and the port operators.

EU relevance

These measures are consistent with the objectives of EU transport policy.

Implementation periods

All these measures are permanent tasks. However, the Waterways and Shipping Administration's planning capacity has to be increased as quickly as possible.

1.6 Progress short sea shipping

Current situation

In the future, short sea shipping is to become more important in European freight transport as a reasonably priced and ecologically sound means of transport. The reduction of time lost to congestion, air pollution and freight transport costs will generate benefit to the national economy. In addition, it will be possible to provide reliable links to and from more isolated regions and islands in the European Union.

In addition to containers, short sea shipping can be used to move bulk cargo, trailers, project cargo and heavy lift cargo. In this context, small and medium-sized ports are of great importance. Only a broadly-based port landscape will keep short sea shipping attractive. This relates to, for instance, ferry/ro-ro traffic (e.g. Emden, Cuxhaven, Lübeck, Kiel, Rostock, Sassnitz) and bulk freight traffic (e.g. Brake, Nordenham, Brunsbüttel, Rostock, Wismar).

Short sea shipping faces competition from HGVs. Short sea shipping can only offset the flexibility and short haulage times of HGVs by charging reasonable freight rates, carrying high volumes of goods and offering reliability. For this reason, smooth and rapid handling at the ports is of crucial importance. If there is to be a further shift of cargo to waterborne transport, short sea shipping must be better integrated into the supply chains and its efficiency

must be improved. To this end, reliability and service frequency have to be increased. Dismantling customs barriers and reducing red tape will help to enhance the efficiency of short sea shipping.⁸²

With the Short Sea Shipping and Inland Waterway Promotion Center (SPC), the Federal Government, federal states and industry have at their disposal an organization that progresses the promotion of short sea shipping and inland waterway transport, especially as part of intra-European multimodal freight transport chains. The Federal Government considers the creation of the SPC to be an important measure for the systematic implementation of the policy of better dovetailing the individual modes of transport and shifting more traffic from the roads to the rail and waterway modes

Description of the measure

- The **Federal Government**, the **federal states** and the **ports sector** will continue to promote the SPC.

Impact

The activities of the SPC will shift freight from the roads to alternative modes of transport and shape the modal split in favour of short sea shipping.

Responsibility

The Federal Government, federal states and ports sector (port operators and port companies) are responsible for implementing this measure.

Budgetary relevance

The activities of the SPC are supported with an annual sum of 190,000 euros from the federal budget.

EU relevance

With the creation of the SPC, the Federal Government – like a number of other Member States – was following a recommendation by the European Commission that a national short sea shipping promotion centre be established in the form of an information office in order to dismantle obstacles and create more transparency with regard to multimodal freight transport solutions.

⁸² Cf. Randelhoff: *Kaum bekannt, aber sehr wichtig: Short Sea Shipping*, Internet publication, 18 September 2014, <http://www.zukunft-mobilitaet.net>.

Implementation period

Promotion of the SPC is a permanent task.

1.7 Provide financial assistance to combined transport terminals

Current situation

Combined transport helps to ensure that the different modes of transport are interlinked in a meaningful manner and that as much freight traffic as possible can be shifted to the more environmentally friendly rail and waterway modes. Since 1998, the Federal Government has been supporting the construction of new and the upgrading of existing private sector combined transport terminals⁸³ and the strengthening of the intermodal transport system by means of funding guidelines. With the help of this financial assistance, there has been a significant increase in the volume of freight carried by combined transport. In addition, the provision of financial assistance to combined transport has positive effects on modal shift and the environment. The terminals co-financed under the funding agreement save around 14,000 HGV trips and around 5.7 million HGV kilometres per day and avoid around 2 million tonnes of CO₂ emissions per year. The Coalition Agreement for the 18th parliamentary term states that the provision of financial assistance to combined transport is to be continued and a high level of funding for combined transport terminals is to be safeguarded. The Coalition Agreement also provides for spending reviews to be conducted. On 1 July 2015, the Federal Cabinet decided to submit the funding of combined transport to a spending review. This will explore whether the financial assistance programme has achieved its objective and how the funding can be optimized. The Federal Ministry of Transport and Digital Infrastructure has commissioned a metastudy to identify new ways of making freight transport more environmentally friendly by means of better interlinking and dovetailing.

Description of the measures

- The **Federal Government's** current Guidelines on Funding for Combined Transport Terminals Operated by Private Undertakings are initially to be extended by one year. In parallel, the existing funding is to be subjected to a thematic spending review. Once the findings are available, the funding guidelines will be revised.

- The **Federal Government** will commission a metastudy to explore how even better use can be made of the potential inherent in all modes of transport and how the opportunities for intermodal freight transport can be further improved.

Impact

The provision of financial assistance to combined transport is an instrument that can be used to optimize freight transport, decongest the roads and conserve the environment. The findings of the spending review will inform the evolution of the guidelines. In a separate development, the metastudy is to provide recommendations for action to be taken to achieve better interlinking and dovetailing and shift more traffic by creating regulatory, infrastructure and fiscal incentives. In addition, it is to make proposals on how the efficiency of all modes of transport can be enhanced and, in the long term, utilization of all modes of transport can be made as even as possible.

Responsibility

The Federal Government is responsible for implementing these measures.

Budgetary relevance

The costs of these measures will be covered by the Federal Government.

EU relevance

These measures are consistent with the objectives of EU transport policy.

Implementation periods

The current Guidelines on Funding for Combined Transport Terminals are initially to be extended by one year. Subsequently, once the spending review has been completed, new funding guidelines will be developed and coordinated.

1.8 Continue the programme for funding private sidings

Current situation

To shift further traffic to the railways, the construction, upgrading and reactivation of private sidings is supported by the Federal Government providing financial subsidies to private companies. The programme for funding private sidings has been running since 2004 and will expire in August 2016. The most recent revision of the funding guidelines increased the number of beneficiaries and eligible measures. Thus, financial assistance is provided both to the expansion of the infrastructure of a siding in operation (arrangement so far) and to the

enhancement of the capacity of the infrastructure of a siding in operation for additional traffic (new arrangement). The certification procedure has been made more flexible and more time is allowed for it.

This programme makes a major contribution towards achieving the transport policy objective of increasing the amount of freight moved by rail. 140 projects have already been delivered since the guidelines entered into force. This has reduced the daily burden on the German road network by around 1,820 HGV trips or 560,000 HGV kilometres. As a result, it has been possible to achieve CO₂ savings totalling 206,000 tonnes, calculated for one year.

Description of the measure

- The **Federal Government** will review the programme for funding public sidings.

Impact

The programme for funding public sidings will support the shift of freight traffic from the roads to the railways.

Responsibility

The Federal Government is responsible for implementing this measure.

Budgetary relevance

The Federal Government is responsible for funding this financial assistance programme.

EU relevance

These measures are consistent with the objectives of EU transport policy.

Implementation period

The *Guidelines on Funding for the Construction, Upgrading and Reactivation of Private Sidings* will expire on 31 August 2016. Successor guidelines will be reviewed and launched in a timely manner

1.9 Upgrade TEN corridors and safeguard CEF funding

Current situation

In late 2013, a *Regulation on guidelines for the trans-European transport network (TEN-T guidelines)* and the "*Connecting Europe Facility*" (CEF⁸⁴) *Regulation* were adopted

⁸⁴ CEF = EU instrument for funding the TEN projects.

containing rules governing the European funding of the trans-European networks. The TEN network comprises a comprehensive network and a core network. On the core network, corridors reflect the major long-distance transport routes. They are multi-modal and designed principally to improve cross-border connections within the European Union. Six of the nine core network corridors run through Germany.

Coordinators appointed by the European Commission are to monitor delivery of the corridors, in consultation with the Member States. To this end, a work plan will be drawn up that is the keystone of corridor management. This work plan is to set out the investment for the period from 2014 to 2020 that is targeted together with the Member States.

The European Commission estimates that funding totalling € 500 billion euros will be required for the transport networks for the financial period from 2014 to 2020. The CEF earmarks around €24 billion for the co-financing of TEN-T infrastructure schemes. This funding will not be sufficient to achieve the policy objectives in the financial period concerned. Completion of the TEN-T network will thus require massive investment by Member States. The Federal Government is supporting the European Commission and will cooperate closely with the coordinators for the corridors to propose suitable projects to be funded.

Eligible projects in the field of new technologies also include the supply of shore-side electricity and LNG storage facilities, and possibly the use of alternative propulsions for ships. Here, however, every project has to be reviewed individually to determine whether an application can be made and whether the project is eligible for funding. In the case of seaports, financial assistance can be provided to projects for improving hinterland connections, seaward approaches, the basic infrastructures and installations for the disposal of waste oil and wastewater.

Description of the measures

- The **Federal Government** will engage in constructive cooperation with the coordinators of the TEN corridors and carefully select projects in order to preserve the chances of being granted funding.
- The **Federal Government** will propose further projects for TEN funding when the European Commission launches calls for project submission.

- The **Federal Government** will lobby for financial return from the CEF to Germany that is as high as possible.

Impact

The constructive cooperation with the coordinators and the selection of suitable projects with high European added value will enhance the chances of receiving financial assistance from the CEF. Further project applications and high financial return will relieve the burden on the Federal Government and federal state budgets and make it possible to deliver further infrastructure schemes.

Responsibility

The Federal Government is responsible for implementing these measures.

Budgetary relevance

The CEF will provide co-financing for infrastructure projects on the TEN network. This will relieve the burden on the Federal Government and federal state budgets through financial return. Nevertheless, delivery of the projects will also require significant funding by the Federal Government and federal states.

EU relevance

The development and improvement of hinterland connections, measures to improve shipping's environmental performance, new technologies and innovations, and the use of alternative fuels for energy-efficient maritime transport are priorities in the development of the maritime transport infrastructure on the TEN-T.

Implementation periods

The core network is to be delivered by 2030 and the comprehensive network by 2050.

1.10 Expand seaport infrastructure and superstructures

Current situation

The volume of containers handled by ports will grow at a disproportionate rate over the period to 2030 (+ 4.3 percent p.a.).⁸⁵ The continuing trend towards ever larger container ships necessitates larger gantry cranes that must be able to cover the entire width of a ship. Vehicle handling, for instance at Bremerhaven and Emden, also exhibits sustained growth rates. The

⁸⁵ MWP, IHS, UNICONSULT, Fraunhofer CML: *Seeverkehrsprognose 2030*, May 2014, p. 2.

handling of automobiles requires large areas and high-bay warehouses on which the cars can be parked.

The maritime traffic forecast for 2030 states that the strongest qualitative growth in German exports is likely to be in the sectors of vehicles (+46 %), chemical products (+44 %), machinery and equipment (+39 %) and timber etc., which also includes published products and media. On the other hand, the qualitative growth in the field of bulk cargo such as coal (+2 %) or metals and semi-finished products (+4 %) will be very low.⁸⁶ The strongest quantitative growth in German imports will be in the predominantly containerized goods category of non-identifiable goods (+164 %), followed by furniture (+133 %), other mineral products (+111 %), vehicles (+100 %) and textiles (+95 %). Because the forecast also integrates the reduction targets relating to the consumption of fossil energy sources, the predicted growth in imports for the bulk cargoes of coal (+9 %), petroleum and natural gas (-20 %) and coking plant products (-23 %) is low. Likewise, only slight growth of 8.5 % is forecast for non-metallic minerals.⁸⁷

Offshore wind energy confronts port infrastructure and superstructures with new challenges. If the development objectives for offshore wind energy are to be achieved, both sufficient port capacity and logistical expertise are required. As the output of the wind turbines increases, so does the weight of the individual components, thereby placing greater demands on the spaces and installation equipment. The main need is for extensive storage spaces and areas for the pre-assembly of the major system components. In some cases, the port basins must have a suitable bed for jacking up⁸⁸ the installation vessels.

Description of the measures

- The **ports sector** will continue to upgrade the superstructures such that future-generation ships can continue to be handled and optimum use can be made of the potential for growth.
- The **federal states** and **local authorities** will invest in port infrastructure on the scale required to ensure smooth port operations.
- The Northern German **federal states** and the **ports sector** will create and upgrade the capacity for offshore wind energy on the scale required for implementation of the new direction in German energy policy.

⁸⁶ Ibid. p. 68.

⁸⁷ Ibid. p. 71.

⁸⁸ Jacking up means that the vessels are placed on the bed by means of on-board legs.

- The **Federal Government** will explore how the upgrading of port infrastructure for offshore wind energy and further measures made necessary by the new direction in energy policy can be assisted without infringing antitrust law.

Impact

Upgrading the seaport infrastructure and superstructures will further consolidate Germany's position as an exporting nation and the world's number one centre for logistics. The entire national economy of Germany will benefit from properly functioning seaports. The corresponding upgrade of port capacity for offshore wind energy and possible support by the Federal Government will make it possible to implement the new direction in German energy policy and strengthen Germany's pioneering role in the development of offshore wind energy.

Responsibility

The ports sector (port companies) is responsible for upgrading the superstructures. The federal states and local authorities must upgrade port infrastructure, having due regard to the provisions of European law. Port capacity for offshore wind energy is the responsibility of the federal states and the ports sector (port operators and port companies). The Federal Government will explore how the upgrading of port infrastructure for offshore wind energy and further measures made necessary by the new direction in energy policy can be assisted without infringing antitrust law.

Budgetary relevance

The costs of the measures will be covered by the federal states and the ports sector. The provision of financial assistance to the upgrading of port infrastructure for offshore wind energy would place a burden on the federal budget.

EU relevance

The measures are consistent with the objectives of EU transport, energy and environmental policy and enjoy high priority in the development of the TEN-T network.

Implementation periods

Upgrading the seaport infrastructure and superstructures is a permanent task.

1.11 Expand inland port infrastructure and superstructures , provide land

Current situation

To a greater extent than is already the case today, inland ports could, in the future, assume some of the functions of the seaports on the key freight corridors and expand their role as tri-modal freight distribution centres. These functions could be in the fields of, for instance, warehousing, distribution, downstream processing and repair. In this context, the handling capacity and the availability of land are of great importance.

Ports need land to cope with the growth in the volume of cargo handled. This is increasingly resulting in conflicts of use between the ports and competing interests, such as tourism, waterfront housing, environmental protection and nature conservation. Communication between urban planners and port development planners is often inadequate.

In addition to their national importance, many inland ports, as industrial sites, are also indispensable for the creation of regional wealth. For numerous companies, a direct link to and from an inland port is a prerequisite for their commercial activities, which means that there are great mutual dependencies. Unlike airports, for instance, it is often not possible for companies to change from one port to another because the raw materials and goods cannot be moved by land, even over short distances.

Description of the measures

- The **inland ports sector** will continue to evolve key inland ports into multi-functional, tri-modal logistics hubs that can also assume additional seaport functions where this makes economic sense.
- The **inland ports sector** will upgrade the superstructures such that they meet the requirements of modern freight transport.
- The **seaports sector** will transfer seaport functions to their hinterland where this makes sense from a business management point of view.
- The **federal states** and **local authorities** will invest in inland port infrastructure on the scale required to ensure smooth port operations.
- The **federal states** will issue regional planning guidance and commit funds to encourage new or re-locating companies to give greater consideration to ports when choosing a location and will prepare sites and take infrastructure measures to create the conditions that are likely to encourage these companies to choose such locations.

- The **federal states** and **local authorities** will, when conducting spatial planning for port areas and areas near ports, take just as much account of the spatial needs of the ports as they do of environmental, climate change and social aspects.
- The **federal states** will, when designating protected areas, take particular account of the ports' scope for development, while observing statutory requirements.
- The **federal states** will, where port areas cannot be provided on the scale required, identify other suitable sites and safeguard them by means of regional planning.
- The **local authorities** will engage in an exchange of views with the ports on the land required and consider alternative sites before planning measures for non-port related industry, housing and offices on the waterfront or in the vicinity of port areas.
- The **ports sector** will, when upgrading ports, take all the measures necessary to avoid burdens on the population and the environment.
- The **Federal Government** will offer its assistance for the resolution of conflicts of use regarding port areas and port-related areas if the parties so wish.

Impact

Upgrading the inland port infrastructure and superstructures will make it possible to cope with the likely growth in the volume of cargo handled by the sea and inland ports. The provision of support to the inland ports in encouraging companies to locate can promote the transport of freight transport by inland waterway vessel and avoid movements by land. The ports will be able to fully exploit their potential for growth if the land required for future development is safeguarded. Implementation of measures to avoid burdens on the population and the environment will prevent conflicts and protect the environment. The Federal Government could assist the resolution of conflicts of use regarding land, for instance by acting as a moderator.

Responsibility

The inland ports sector (port operators and port companies) is responsible for evolving key inland ports into multi-functional, tri-modal logistics hubs and for upgrading their superstructures. The relocation of seaport functions will have to be initiated by the seaports. The conditions that encourage companies to give greater consideration to ports when choosing a location will have to be created by the federal states and local authorities. The federal states and local authorities are responsible for safeguarding land for inland ports. The inland ports sector (port operators and port companies) will have to take measures to avoid

burdens on the population and the environment when upgrading the ports. The Federal Government can assist the players involved where there are conflicts of use.

Budgetary relevance

Encouraging companies to locate at inland ports can be supported by the federal states providing funding. Safeguarding land may impose a burden on the budgets of the federal states and local authorities

EU relevance

These measures are consistent with EU transport and environmental policy.

Implementation periods

All these measures are permanent tasks.

1.12 Improve digital infrastructure

Current situation

The systematic use of the opportunities associated with digital connectivity and the upgrading of appropriate infrastructure are an indispensable prerequisite for prosperity and growth and thus point the way to a successful future for Germany. For this reason, the ports must consider themselves to be terminals and data hubs.

In a globalized sector such as logistics, digitalization offers much potential, for instance through cost reduction, more flexibility and greater transparency. Digital technologies can significantly improve the efficiency and quality of logistical processes. They are to help in monitoring, digitalizing and managing logistical processes in real time and as completely as possible. IT applications enhance the transparency of even complex logistics systems, are used for quality assurance in all processes and improve their controllability.⁸⁹

In 2014, the Federal Government adopted a Digital Agenda. Its objective is that there should be in Germany, by 2018, an infrastructure providing universal broadband coverage with a download speed of at least 50 Mbit/s.

The ports and the logistics industry need access to high-performance digital infrastructure. This is a key locational factor for our economy, strengthens the basis for innovation and creative ideas and promotes a modern information society. The "Smart Port Logistics" project

⁸⁹ Fraunhofer Institute for Factory Operation and Automation (press release): *Potenziale der »Digitalen Logistik« richtig ausschöpfen*, October 2013.

conducted by the Port of Hamburg showed that IT-based intelligent connectivity between the port operator, haulage contractor and logistics operator can generate significant efficiency gains, for instance with regard to the useful life of goods vehicles. Via smartphone or tablet, goods vehicle drivers and schedulers receive, among other things, real-time information on the traffic situation at the port, times at which bridges are closed, the situation at major companies (for instance empty container depots) and parking information. On this basis, they can react to changes in the situation at any time, thereby avoiding disruption to logistics operations.⁹⁰ In the medium to long term, the project aims to completely interlink all parties and modes of transport involved in the logistics process, so that the entire logistics chain can be better planned and faster and more flexible responses to disruptions to operations are possible.

Description of the measures

- The **Federal Government** will promote the deployment of infrastructure providing universal broadband coverage with a download speed of at least 50 Mbit/s by 2018 where no adequate market solutions materialize to meet the requirements under the given economic, infrastructure and topographical circumstances, even if all technological and competitive alternatives are included.
- The **Federal Government** will support the digitalization of the economy by, among other things, launching and expanding research and technology programmes with a high degree of transfer to industry, inter alia in the fields of autonomics, 3D, big data, cloud computing and microelectronics.
- The **Federal Government** will support intelligent connectivity in the sectors of education, energy, health, transport and administration as part of the Intelligent Connectivity Strategy.
- The **Federal Government** and **federal states** will support the local authorities in funding feasibility studies and consultancy services, delivering broadband coverage or a local broadband network and laying conduits that can be used for broadband infrastructure.
- The **federal states** will continue to fund broadband roll-out.
- The **ports sector** will develop and implement strategies for the digital connectivity of all players involved in the logistics chain, wherever this makes economic sense.
- The **ports sector** will seek to standardize the data formats between the parties involved in the logistics process.

⁹⁰ Hamburg Port Authority: *Hamburger Hafen – Digitales Tor zu Welt*, undated.

Impact

The provision of targeted financial assistance to the deployment of broadband structures where market solutions are not feasible will make it possible to provide universal broadband coverage. The provision of financial assistance to the digitalization of the economy and of support to local authorities in the deployment of broadband will enhance the competitiveness of the entire economy. The Intelligent Connectivity Strategy will, in particular, take cross-sectoral measures to press ahead with connectivity and digitalization in basic infrastructures. Schemes for digitally interlinking the players involved in the logistics chains and standardizing the file formats will enhance the efficiency of and optimize logistics chains.

Responsibility

The Federal Government and federal states are responsible for the provision of financial assistance to the deployment of broadband infrastructure, support to the digitalization of the economy and support to the local authorities. The ports sector (port operators and port companies) is responsible for the schemes for digitally interlinking all the players involved in the logistics chains and standardizing the file formats.

Budgetary relevance

The Federal Government will, if certain conditions are met, fund the measures to deploy broadband and to support the digitalization of the economy. The federal state budgets will have to provide financial assistance to the deployment of broadband. The ports sector will fund digital connectivity and the standardization of the file formats.

EU relevance

These measures are consistent with EU economic policy.

Implementation periods

These measures are permanent tasks.

2. Measures to further improve the competitiveness of the sea and inland ports

2.1 Create a core network of inland port hubs, freight distribution centres and marshalling yards

Current situation

The creation of a core network of inland ports, freight distribution centres and marshalling yards, which can be based on the core TEN network, will make it possible to identify

locations where there is an especially great macroeconomic interest. Priority should be given to investment in the provision of hinterland connections to and from these locations.

The ports on the supplementary network will have opportunities to evolve as transport hubs, although initially they will only be able to assume further logistics functions to a small extent because of locational constraints. These ports serve predominantly regional interests.

Description of the measures

- The **Federal Government** will join forces with the **federal states** and the **ports sector** to identify a core network of inland ports, freight distribution centres and marshalling yards that are particularly suitable for assuming seaport functions. In doing so, it will base its activities on the TEN-T corridors, the core and comprehensive network ports defined on the TEN-T network and the Report on Boosting the Competitiveness of the Inland Ports⁹¹.
- The **Federal Government** will engage in considerations to determine what investment in the hinterland connections to and from the core network ports is to be given priority.

Impact

The creation of a core network of inland ports, freight distribution centres and marshalling yards will support targeted investment in transport infrastructure, relieve the pressure on the road infrastructure, optimize logistics chains and exploit the potential for job creation.

Responsibility

The Federal Government, federal states and ports sector are responsible for identifying a core network of inland ports, freight distribution centres and marshalling yards. The second measure will be implemented by the Federal Government.

Budgetary relevance

Funding will be based on the appropriations available.

EU relevance

These measures are consistent with the EU's TEN policy

Implementation periods

These measures are to be completed in 2017.

⁹¹ Cf. PLANCO Consulting GmbH: *Gutachten zur Erhöhung der Wettbewerbsfähigkeit der Binnenhäfen*, January 2013.

2.2 Connect ports with one another and with rail hubs

Current situation

Provided with the right equipment, inland waterway locations can complement the seaports, especially in the container sector, thereby helping to reduce the burden on the road infrastructure, optimize logistics chains and harness the potential for job creation.

Delays for inland waterway vessels at seaports are often caused because larger ships are given priority at the handling facilities, especially if the handling capacity is being utilized to a high degree. To handle inland waterway vessels, suitable loading and unloading equipment is required at seaports, because the terminals designed to handle large sea-going ships are not suitable for loading and unloading inland waterway vessels and because, given the small amount of cargo per vessel, the loading and unloading operations result in comparatively high costs.

Strain is placed on the warehousing and stacking capacity at seaports by the long dwell times of containers and by a lack of information about the destinations of the cargo. Containers often have to be restacked several times before they can be moved out of the ports. Further connectivity is required, including the IT systems of the players involved in the logistics chains, in order to accelerate and optimize the handling of cargo and its onward distribution.

Handling facilities operated by the railways, which are often only a few kilometres away, compete with the inland ports for the same cargo. Synergies can be generated by interconnecting these sites or by establishing good transport links between them.

Description of the measures

- The **ports sector** will establish greater connectivity where this makes economic sense.
- The **Federal Government** will provide assistance to ports in projects for coordinated port development, taking account of national and European competition law.
- The **ports sector** will seek ways of preventing bottlenecks at the seaports from having an adverse impact on the operational procedures in inland waterway transport.
- The **seaports sector** will install suitable loading and unloading equipment for inland waterway vessels where this makes economic sense.
- The **ports sector** will press ahead with measures to further interlink the IT systems of sea and inland ports where this makes economic sense.
- **Deutsche Bahn AG** and the **inland ports** will continue to progress the interlinking of rail and inland waterway hubs.

Impact

Interlinking the ports will relieve the pressure on the seaports. Preventing delays for inland waterway vessels and the expansion of suitable loading and unloading equipment at the seaports can help inland waterway transport to gain a greater share of freight traffic.

Interlinking the IT systems can accelerate the routing of cargo and optimize traffic flows. The interlinking of rail and inland waterway hubs will generate synergies.

Responsibility

The ports sector (port operators and port companies) and Deutsche Bahn AG are responsible for implementing this measure. The Federal Government may provide assistance.

Budgetary relevance

None

EU relevance

The measures must be implemented with due regard to European competition law.

Implementation periods

These measures are permanent tasks.

2.3. Intensify the marketing of German seaports and collaborative schemes

Current situation

The German seaports are in fierce competition with one another. Despite this, collaborative schemes can be launched, having due regard to the provisions of competition law, if this is of commercial benefit to the ports involved. In international competition between the ports, it is imperative that the position of the German seaports be safeguarded and that locational and competitive advantages be expanded. A communications and marketing platform coordinated between the Northern German federal states and ports can make a major contribution towards more efficiently interlinking the German ports.

The organizations responsible for the marketing of ports in the Northern German federal states of Bremen (bremerports GmbH & Co. KG), Hamburg (Hafen Hamburg Marketing e.V.), Mecklenburg-Western Pomerania (Landesverband Hafenwirtschaft Mecklenburg-Vorpommern e.V.), Lower Saxony (Seaports of Niedersachsen GmbH) and Schleswig-Holstein (Gesamtverband Schleswig-Holsteinischer Häfen e.V.) collaborate in the planning and organization of joint stands at selected trade fairs in non-European countries under the umbrella brand "German Ports", for instance in South America, China and the US, and also in the publication of the information brochure entitled "German Ports Guide"⁹². The Logistics Alliance Germany (LAG) initiative also takes ports into account in its overall marketing strategy.

In the opinion of the Northern German federal states, the existing collaboration in Northern Germany within the framework of the port development dialogue has been a success. At the same time, the Northern German federal states are seeking even closer cooperation with regard to the Northern German Maritime Cluster (MCN). In 2011, the federal states of Schleswig-Holstein, Hamburg and Lower Saxony created the MCN, a platform that promotes and supports companies in the maritime sector. By incorporating the comparable maritime cluster activities of the states of Bremen and Mecklenburg-Western Pomerania into the MCN, the activities in this important sector of the economy are to be consolidated to an even higher degree as of 2015. This has already met with a positive response from companies and trade associations.

⁹² Cf. bremerports GmbH & Co. KG: German Ports – erfolgreiche Kooperation im Hafenmarketing, website <http://www.bremerports.de/standort/german-ports>, Stand: 23 March 2015

Description of the measures

- The **ports sector** will continue to cooperate in marketing German seaports in other countries.
- The **Federal Government** will support the German seaports as part of the "Logistics Alliance Germany" (LAG) initiative.
- The Northern German **federal states** will further intensify their cooperation within the MCN.

Impact

The collective marketing of seaports at events in other countries can unlock additional market potential and further boost the competitiveness of the German seaports. The intensification of the cooperation between the Northern German federal states will support the companies in the maritime sector.

Responsibility

The collective marketing of the seaports is the responsibility of the ports sector (port operators) and is supported by the Federal Government. The international and national activities of the LAG are coordinated annually with the federal states. The organizations responsible for the marketing of ports in the Northern German federal states collaborate under the umbrella brand "German Ports". The intensification of the cooperation in the MCN is the responsibility of the federal states.

Budgetary relevance

The Federal Government will provide around € 600,000 per year for the LAG marketing initiative until further notice. In addition, the LAG funding association will generate significant further funding for marketing initiatives.

EU relevance

These measures must remain within the constraints imposed by EU competition law.

Implementation periods

These measures are permanent tasks.

2.4 Improve the marketing of inland ports

Current situation

In the future, it will be imperative that freight be shifted to the inland waterways within the scope of multimodal transport. Much greater use must be made of the potential inherent in the existing fleet and in the infrastructure than hitherto. Raising public awareness of and interest in this issue and promoting the sector is an important instrument for attracting new recruits to inland waterway transport and the logistics industry. It is up to the ports, the inland waterway sector, shippers and policymakers to join forces and support appropriate strategies.

Description of the measures

- The **inland ports sector** will consider a new marketing strategy to market the inland ports.
- The **Federal Government** will consider whether, and if so to what extent, it can provide financial assistance to this marketing strategy.

Impact

The new marketing strategy is designed to inform the general public about the tasks and functions of inland ports and focus the attention of the logistics industry on the high level of productivity of the inland ports. The possibility of the Federal Government providing financial assistance to this marketing strategy will support the Federal Government's objective of shifting freight traffic to the inland waterways.

Responsibility

The Federal Association of Public Inland Ports is responsible for marketing German inland ports. The Federal Government may provide financial assistance.

Budgetary relevance

The provision of financial assistance to the new marketing strategy would place a burden on the federal budget.

EU relevance

The provision of financial assistance to inland ports is in line with EU transport policy

Implementation period

This marketing strategy is to be implemented in 2016.

2.5 Identify the importance of the ports to the national economy and their job creation impact

Current situation

The jobs associated with the ports sector ensure purchasing power and prosperity, not only in the port cities themselves, but also along the entire value chain. There is currently no empirical data basis meeting scientific criteria that systematically captures the jobs generated by the ports.

Description of the measure

- The **Federal Government** will commission a study to identify the importance of the ports to the national economy and their job creation impact.

Impact

Empirical data on the ports' job creation impact, collected systematically applying scientific methods, will illustrate the importance of the ports to the whole German economy.

Responsibility

The Federal Government will commission this study.

Budgetary relevance

The costs of this study will be covered by the Federal Government.

EU relevance

The data collection methods to be developed within the scope of the study could serve as a template for the EU in comparable studies.

Implementation period

The contract for the study is to be awarded in 2016.

2.6 Improve port logistics and evolve innovative port technologies

Current situation

With the help of the funds provided by the Federal Government for the ISETEC programme, it has been possible to trial new technologies in demonstration phases and validate their effectiveness.⁹³

⁹³ Ibid. p. 70.

In the opinion of the ports sector, the evaluation of ISETEC II already indicates that there is a need for further research: improving the exchange of data along the maritime logistics chain and shifting flows of goods to the railways and waterways. From the perspective of the seaports sector, the key thematic areas of a new "ports logistics and technology" financial assistance programme could be:

- digital infrastructure for maritime transport;
- planning and simulation;
- human-machine interaction;
- network effects for maritime logistics;
- automation of freight handling.⁹⁴

In the context of the dynamic development of shipping, the capabilities of the ports sector as an overall logistical system comprising different players must be expanded. New solutions have to be developed and trialled, both for port handling itself and for the organization of port traffic and cartage as well as the provision of transport links to and from the ports. Speeding up operations in rail transport, for instance, is to be explored and trialled in practice, because technical and operational inspection tasks (loads, brakes, etc.), in particular, tie down considerable resources. Improving the exchange of data along the maritime logistics chain and shifting flows of goods to the railways and waterways are of crucial importance in this context.

Given the aim of greater connectivity, the inland ports face comparable challenges in the fields of port logistics and port technologies, which means that it would appear appropriate to launch a possible financial assistance programme for the inland ports.

Description of the measures

- The **Federal Government** will launch a new financial assistance programme for the improvement of port logistics and the development of innovative seaport technologies.
- The **Federal Government** will explore whether inland ports can be included in the financial assistance programme.

Impact

A new financial assistance programme for the improvement of port logistics and development of port technologies will help German ports to sharpen their technological edge over

⁹⁴ Cf. Association of German Seaport Operators (comments): *ISETEC III*, November 2014.

competitors and further boost their competitiveness. Incorporating the inland ports into the programme will support the compatibility of the IT systems, make it possible to improve the exchange of data in the logistics chains and increase the chances of shifting freight traffic to the railways and waterways.

Responsibility

The Federal Government is responsible for implementing these measures.

Budgetary relevance

For ISETEC II, grants totalling €21.2 million were approved between 2008 and 2012. A financial assistance programme for port logistics and port technologies would impose a similar burden on the federal budget.

EU relevance

The EU has to be notified of support measures.

Implementation periods

The Federal Government is due to take a decision on the funding initiative in 2016.

2.7 Promote use of the English language

Current situation

German is the first language in German maritime pilotage areas, which means that shipmasters often have to rely on English translations by third parties when communicating with the traffic control centres and tugboats.

Description of the measures

- The **Federal Government** will identify those areas in which Federal Government and federal state authorities can recognize both German and English as official languages for VTS areas.

Impact

Use of the English language as an official language for VTS areas would simplify communication between the ships and shore authorities.

Responsibility

The Federal Government is responsible for implementing these measures.

Budgetary relevance

None

EU relevance

None

Implementation periods

The review is due to be completed in 2016.

3. Measures for international and European port policy

3.1 Enhance the international competitiveness of German ports

Current situation

In the period from 2001 to 2010, the highest growth rates at European ports were at those in the North Sea, whereas the Mediterranean ports and the German Baltic Sea ports saw growth rates that tended to be below average.⁹⁵ In 2010, the five largest German North Sea ports – Hamburg, Bremerhaven, Wilhelmshaven, Bremen and Brunsbüttel – accounted for over 20 percent of the total volume of cargo handled by the North Range ports. In the case of European ports, it is the ZARA ports and Le Havre that stand out. The role of Rotterdam as Europe's largest port – in both bulk cargo and container handling – is obvious, with a market share of 41.8 percent. A not inconsiderable proportion of these volumes is moved eastwards by land or inland waterway and is thus relevant to inland traffic from a German perspective.⁹⁶

The dynamic development of Polish ports, with up to 5 percent growth per annum, shows that they are assuming a constantly increasing role for German traffic. One of the main reasons for the significant rise in the volume of freight traffic is the fact that Gdansk is now a direct-call port for large ships. Polish ports supply not only the growth regions in Central Europe but also, as a result the transport interconnectivity from/to and through Germany, also have an impact on the volume of freight traffic on the German transport network.⁹⁷

Different standards or methods of application in the field of environmental and social legislation, in the tax authorities, fiscal dumping or discriminatory charges can distort

⁹⁵ BVU, ITP, IVV, PLANCO: *Verflechtungsprognose 2030 Los 3: Erstellung der Prognose der deutschlandweiten Verkehrsverflechtungen unter Berücksichtigung des Luftverkehrs*, June 2014, p. 283 and p. 76.

⁹⁶ Ibid. p. 77.

⁹⁷ Ibid. p. 80.

competition between the ports of different states. The creation of a level playing field is thus one of the Federal Government's objectives.

Description of the measures

- The **Federal Government** will lobby for fair conditions of competition at global and European level.
- The **Federal Government** will continue to use its influence in the relevant international organizations and actively campaign to ensure better market access for German companies, to avoid distortions of competition and to create a level playing field.
- The **Federal Government** will not give its consent to international rules and regulations that impose a one-sided burden on German or European ports.

Impact

Fair conditions of competition and international rules and regulations that have to be implemented by all economic operators in the same way will create a market environment in which the German ports can develop their strengths.

Responsibility

The Federal Government is responsible for implementing these measures.

Budgetary relevance

None

EU relevance

These measures are consistent with EU competition policy.

Implementation periods

These measures are permanent tasks.

3.2 Progress European legislation with a sense of proportion

Current situation

Given that the organizational and funding structures of the ports in Europe have evolved in the course of a long historical process and are in some cases very different, a "one size fits all approach" is not likely to create a level playing field. Such an approach does not reflect the heterogeneity of the European port landscape, nor does it take into account the inherent strengths of individual ports in a competitive environment. The consequence of a "one size

fits all" approach would be a loss of the competitiveness of the European ports in the international environment.

European ports policy must take into account, to a greater degree than in the past, the outstanding function of ports for the European economy. Simply transferring competition rules from other economic sectors, especially air transport, is not an option, because of, among other things, the significantly greater complexity of ports compared with airports, their different operational and task profiles and their different organizational and funding structures. In addition, care should be taken to ensure that the safety and efficiency of navigation is not constricted by European rules and regulations.

The European Parliament's rapporteur, Knut Fleckenstein, has argued in favour of deleting the market access rules (Chapter 2) of the planned Regulation establishing a framework on market access to port services and financial transparency of ports (EU Port Services Regulation) and focusing the rules more on port services that are provided directly for the port user. The report suggests that there should be greater focus on social provisions. The Federal Government should first assess this together with the federal states.

The European Union has announced that it is to develop criteria on the basis of which public sector investment in the ports can be exempted from the notification requirement under the General Block Exemption Regulation (GBER). The Federal Government supports these deliberations.

Description of the measures

- The **Federal Government** supports the objectives of the European Commission with regard to establishing more transparency in the financial relations between the public sector and the providers of port services.
- The **Federal Government** will lobby to ensure that all European rules and regulations governing sea and inland ports comply with the principle of subsidiarity and are appropriate.
- The **Federal Government** will take care to ensure that all European rules and regulations governing sea and inland ports do not run counter to the constitutionally enshrined responsibilities of the Federal Government and federal states.

- The **federal states** and the **ports sector** will continue to join forces with the Federal Government in assisting the European Union in avoiding distortions of competition and establishing a level playing field between ports.
- The **Federal Government** will ensure that European and international legislation is transposed into German legislation. Where there is still a requirement for adaptations, these will be implemented speedily.
- At European level, the **Federal Government** will not only use its influence to prevent additional administrative burdens, but also call for specific measures to relieve the burden on the public authorities and industry.
- The **Federal Government** and **federal states** will support the European Commission in developing criteria on the basis of which public sector investment can be exempted from the notification requirement.
- The **Federal Government** and **federal states** welcome the fact that the European Commission is considering including public sector investment in the GBER.
- The **Federal Government** and **federal states** will lobby to ensure that the criteria on the basis of which public sector investment can be exempted from the notification requirement:
 - ✓ *contain appropriate thresholds to prevent disproportionately high burdens being imposed on the ports;*
 - ✓ *facilitate investment in port infrastructure and reduce bureaucracy;*
 - ✓ *make it possible to fund port infrastructure by means of both public grants and tax relief;*
 - ✓ *take account of the different structures, tasks and functions of the ports and preserve the necessary scope for national action, so that ports can be evolved on the basis of strategies specific to their location;*
 - ✓ *are limited exclusively to the port areas and do not contain any rules governing the seaward approaches, hinterland connections and inland waterways;*
 - ✓ *do not cause any competitive disadvantages vis-à-vis non-European ports;*
 - ✓ *encourage ports to behave in an environmentally friendly manner and to tackle climate change, having due regard to the competition between shipping and other modes of transport.*

Impact

These measures will promote a level playing field between European ports and their non-European competitors. Compliance with the principle of subsidiarity and the responsibilities

of the Federal Government and federal states will help to preserve the necessary scope for national action for port development. Close cooperation between the Federal Government, the federal states and the ports sector in preventing distortions of competition and establishing a level playing field between ports will ensure appropriate European rules and regulations. The transposition of international and European legislation into European legislation will create legal certainty. Deleting the market access rules in the EU Port Services Regulation and focusing on services that are provided for the user will result in more leeway in the development of ports on the basis of national strategies. The inclusion of appropriate provisions governing port infrastructure in the GBER can enhance the ports' ability to plan with certainty.

Responsibility

The Federal Government and federal states are responsible for implementing these measures. The Federal Government represents the interests of the federal states and ports at European level. Close coordination between the Federal Government and the federal states on European issues is in the interests of the Federal Government, the federal states and the logistics sector.

Budgetary relevance

Budgetary relevance depends on the outcome of the negotiations on the inclusion of ports in the GBER.

EU relevance

The subject of the measures is EU ports policy.

Implementation periods

The definition of criteria on the basis of which public sector investment in the ports can be exempted from the notification requirement and consideration to determine whether public sector investment subsidies in ports can be exempted from the GBER should take place as soon as possible. There is currently significant legal uncertainty surrounding the funding of port infrastructures. The duration of the process until adoption of the EU Port Services Regulation cannot yet be stated.

3.3 Evolve the Blue Belt

Current situation

The "Blue Belt" initiative is designed to reduce administrative formalities in maritime transport, thereby contributing to the further harmonization of the European internal market

for maritime transport. So far, ships sailing between two EU ports have been subject to the same reporting requirements at their port of destination as if they were entering the EU from a third country. This means a considerable administrative burden and additional costs that make waterborne freight transport more expensive. To harmonize existing reporting requirements, the EU launched the "Blue Belt" project in 2010. This is a pilot project in which all European ports and a total of 253 ships have participated. It has demonstrated that, by using the European "SafeSeaNet" system of the European Maritime Safety Agency (EMSA), the port of origin of a ship can be accurately verified.⁹⁸

In July 2013, the European Commission published a communication on developments in the *Blue Belt Initiative*, in which it referred to two initiatives that had hitherto been mutually independent: e-Customs and e-Maritime. It is not yet apparent to the Federal Government whether, and if so to what extent, the electronic manifest (e-Manifest) planned in this context will be able to help to simplify customs formalities and possibly also maritime reporting requirements.

For the Federal Government, it is important that customs clearance in Europe be effective, efficient and reliable for all modes of transport alike. One of its objectives is thus to progress the evolution of customs clearance tools and to further intensify the good connectivity with the customs authorities of the other countries. The Federal Government expects the establishment of the National Single Window⁹⁹ for meeting reporting requirements under transport law to generate synergies that will benefit both the public authorities and the economic operators.

Description of the measures

- The **Federal Government** supports the planned reduction in administrative requirements in intra-European maritime transport.
- Given that European customs law is currently being comprehensively recast, the **Federal Government** will lobby to ensure that the legislative measures to implement the e-Manifest pay due regard to the future customs provisions.
- The **Federal Government** will press for the technical implementation of the e-Manifest to be made compatible with the German IT systems.

⁹⁸ Cf. Federation of German Industry: *Mobilitätsagenda der deutschen Industrie*, April 2013 p. 13.

⁹⁹ The National Single Window System is designed to provide economic operators with the opportunity to meet all the reporting formalities set out in Directive 2010/65/EU electronically and just once.

Impact

Customs clearance that is effective and reliable for all modes of transport alike throughout Europe will boost the competitiveness of short sea shipping vis-à-vis other modes of transport and encourage a shift of freight traffic to the waterways. The costs of the technical implementation of the e-Manifest will be reduced if it is made compatible with the German IT systems.

Responsibility

The Federal Government is responsible for implementing these measures.

Budgetary relevance

It is not possible at the present time to estimate the level of the additional costs for national and European budgets that will result from introduction of the e-Manifest.

EU relevance

The subject of these measures is EU customs, shipping and ports policy.

Implementation periods

Implementation of the measures will depend on the duration of the negotiations at European level.

4. Measures for environmental protection, combating climate change and the use of alternative fuels

4.1 Create environmental standards that are uniform EU-wide and throughout the world

Current situation

Since 2015, the more stringent requirements for the sulphur content of marine fuels of 0.1 percent have been in force. Shipping is thus making a significant contribution to the protection of the environment in the North and Baltic Sea areas. There are also SECAs¹⁰⁰ in the North American sea area and in the Caribbean. To protect the environment, combat climate change and prevent competitive disadvantages for the ports located in the SECAs, the Federal Government is pressing for further sulphur emission control areas to be designated, especially in the Mediterranean region.

¹⁰⁰ SECA = Sulphur Emission Control Area.

Preparations are currently underway for the designation of Emission Control Areas (ECAs) in the North Sea and Baltic Sea in which not only sulphur oxide but also nitrogen oxide (NO_x) emissions are subject to stringent requirements. Studies have shown that the designation of NECA on the North Sea and Baltic Sea will impose a small burden on shipping but will have a great benefit for the environment and human health.¹⁰¹ A possible simultaneous designation of the North Sea and Baltic Sea as NECA is being sought. To this end, the NECA North Sea Consultation Group and HELCOM are in contact with each other.

Passenger ships discharge large amounts of sewage into the Baltic Sea, which contains nitrogen and phosphorus. Annex IV of the MARPOL Convention provides for the possibility of designating special areas in which the discharge of sewage from ships is prohibited. Acting on a request submitted by the countries bordering the Baltic Sea, the Marine Environment Protection Committee (MEPC) of the International Maritime Organization (IMO) adopted a resolution designating the Baltic Sea as the first special area. This resolution states that passenger ships whose keel is laid as of 2019 may not discharge sewage unless they meet the stringent discharge criteria. This requires the use of on-board sewage treatment plants. If such plants are not in place, the sewage must be disposed of in the ports. The discharge criteria will apply to existing ships as of 1 June 2021. The date of 1 June 2019 is designed to give the German Baltic Sea ports at which passenger ships call the opportunity to make the necessary port waste reception facilities available.

In cases where it is unclear how sewage is to be disposed of in the future, the local authorities and their sewage disposal companies should cooperate with the ports sector and, where possible, also with shipowners, but maintaining contractual freedom, in the search for suitable solutions. This could include shipowners informing the ports about new shipboard sewage treatment methods and plannable peak periods by timely declarations of their intention to discharge or possibilities of discharging in another port. This would make it possible to improve the efficiency of port waste reception facilities, cut costs and progress effective sewage management planning. The coastal federal states could, by means of federal state legislation, already establish requirements for indirect discharge into the urban sewerage

¹⁰¹ Cf. Danish Ministry of the Environment: *Economic Impact Assessment of a NO_x Emission Control Area in the North Sea*, 2012.

Cf. also: PBL Netherlands Environmental Assessment Agency: *Assessment of the environmental impacts and health benefits of a nitrogen emission control area in the North Sea*, May 2012.

Cf. also: North Sea Consultation Group: *The impact on short sea shipping and the risk of modal shift from the establishment of an NO_x emission control area*, July 2013

system, including the feeding of sewage to the treatment plant, which would help to create legal certainty for the ports as well.

The Marine Strategy Framework Directive (MSFD), which entered into force in 2008, calls on the Member States of the European Union to take the necessary measures to achieve a good status in the marine environment by 2020 and maintain it beyond that date. The implementation process called for by the Directive to achieve the required good environmental status is coordinated in Germany primarily by the Federal Government/Federal State Committee for the North Sea and Baltic Sea on the basis of an administrative arrangement dating from 2012. The Federal Government and the coastal federal states have already reached agreement, for the German portions of the North Sea and Baltic Sea, on an initial assessment, a description of what constitutes "good environmental status" and the definition of environmental objectives and communicated it to the European Commission. The next step in implementation is the real core of the MSFD – the programmes of measures. It is here that the final decision will be taken on what has to be done to achieve the environmental targets established.

Description of the measures

- To protect the marine environment and human health, the **Federal Government** will continue to lobby for stringent and uniform international and European limits for emissions and sewage discharge from ships
- The **Federal Government** will campaign in the international and European organizations for the designation of emission control areas (SECAs and NECAs).
- The **Federal Government** will use its influence to prevent distortions of competitions resulting from different environmental standards between trades.
- The **ports sector** will provide, by 1 June 2019, the port waste reception facilities for sewage from cruise ships in the Baltic Sea area.
- The **federal states** and **local authorities** will support the ports sector in its search for solutions for the disposal of sewage from cruise ships.
- The **Federal Government** will lobby to ensure that the programmes of measures of the MSFD also give due regard to the transport interests of maritime shipping and the ports.

Impact

The introduction of stringent limits for emissions from ships and the discharge of sewage is designed to protect the marine environment and public health. The worldwide application of

the SECA and NECA standards will help to protect the environment, tackle climate change and avoid distortions of competition between the different trades and ports. Because of its particular geographical and hydrological properties and existing pollution, the Baltic Sea has to be protected against discharge more than other waters. Taking into account transport concerns in the MSFD will help to maintain the competitiveness of shipping and ports.

Responsibility

The Federal Government is responsible for negotiations in the international and European organizations. The ports sector (port operators) is responsible for providing the port waste reception facilities.

Budgetary relevance

None

EU relevance

With the creation of a level playing field in Europe in mind, the Federal Government supports the designation of further SECAs and NECAs in all European waters.

Implementation periods

It cannot yet be predicted when the objective of the Europe-wide application of SECAs and NECAs can be achieved. The port waste reception facilities in the Baltic Sea region must be provided no later than 1 June 2019.

4.2 Introduce a worldwide CO₂ monitoring system

Current situation

At its 62nd session in July 2011, IMO's Marine Environment Protection Committee adopted the Energy Efficiency Design Index (EEDI) and the Ship Energy Efficiency Management Plan (SEEMP). These were the first technical measures binding worldwide for the reduction of CO₂ emissions from maritime shipping. The next step should be for IMO to conduct negotiations on additional technical and operational measures to reduce CO₂. Germany has also played an active part in this by contributing ideas of its own,

The initiative for market-based measures, which was also contributed by Germany, was unable to prevail. Discussions at IMO are currently focusing on the introduction of a globally applicable CO₂ monitoring system that is to form the basis for a possible future measure. The European Commission is of the opinion that no sufficient success has yet been achieved in the

negotiations with IMO. For this reason, it submitted, in parallel with the worldwide negotiations, a draft regulation for an EU monitoring system for the monitoring and reporting of CO₂ emissions from maritime transport, which was adopted by the European Parliament in May 2015. Regulation (EU) 2015/757 on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport entered into force on 1 July 2015 and provides for emission monitoring from 2018 and reporting from 2019.

Description of the measures

- The **Federal Government** will campaign for the introduction of an internationally applicable CO₂ monitoring system.
- The **Federal Government** will support IMO in developing a worldwide market-based measure to incentivize a reduction in CO₂ emissions.
- The **Federal Government** will lobby to ensure that the European port operators are not placed at a disadvantage vis-à-vis non-European ports as a result of additional administrative requirements.

Impact

An internationally applicable CO₂ monitoring system could be a first step towards the development of further technical and operational action to tackle climate change and, ultimately, also towards a market-based and competitively neutral measure to incentivize a reduction in CO₂ emissions and is preferred by the Federal Government over a *European measure*.

Responsibility

The Federal Government is responsible for implementing these measures.

Budgetary relevance

None

EU relevance

In the maritime shipping and ports sector, the Federal Government, as a matter of principle, prefers international rules and regulations to European measures in order to prevent the emergence of distortions of competition in different trades.

Implementation periods

It is not possible to estimate how much time the negotiations on the planned internationally applicable CO₂ monitoring system will require.

4.3 Progress market development in the field of alternative fuels

Current situation

Because of the environmental constraints, it will hardly be possible in the future to continue using heavy fuel oil, which has hitherto been the predominant fuel used in maritime shipping. It is true that there are filter technologies for exhaust gas cleaning (scrubbers). However, these are very expensive and only suitable for part of the existing fleet. The low-sulphur middle distillates used in inland waterway transport (marine gas oil, marine diesel) significantly surpass the SECA requirements (sulphur content lower by a factor of 100) but are considerable more expensive than the heavy fuel oil used so far. For this reason, liquefied natural gas (LNG) is considered to be a promising alternative fuel in waterborne transport. The Federal Government's Mobility and Fuel Strategy focuses in particular on a further reduction in emissions by means of a market entry strategy for LNG in shipping (including inland waterway transport).¹⁰²

The development of LNG infrastructure at ports is gradually gaining momentum. Whereas initially stationary LNG terminals at ports were favoured, companies are now increasingly focusing on more flexible bunkering vessels with a capacity of 6,000 to 7,000 m³ of LNG. In doing so, they are creating flexible storage capacity, which also makes ship-to-ship bunkering possible, which is in line with the expectations of the shipping industry. Initially, the LNG is to be sourced from the ZARA ports. Later, stationary storage facilities in Germany are planned. Alongside the "large" bunkering vessels, smaller, flexibly deployable bunker barges are to be used. Brunsbüttel Ports, N-Ports und Rostock Port are working with companies in the energy industry on supply solutions, and are also exploring the installation of an import terminal. At smaller locations, such as Bremen, stationary LNG bunkering stations are planned.

The investment for the creation of an LNG bunkering infrastructure will be made by the port operators and/or the operators of the infrastructure. Accompanying measures will comprise

¹⁰² Federal Ministry of Transport, Building and Urban Development: *Die Mobilitäts- und Kraftstoffstrategie der Bundesregierung*, June 2013.

both the transfer of appropriate land and the provision of regional financial assistance, decisions on which will be taken at the local level, especially by the port authorities.

The port authorities and other decision-makers at the ports also have an important role to play from the point of view of port logistics, in other words the issue of location, hinterland connections and accessibility. The option preferred by operators, namely approval of ship-to-ship bunkering during the unloading procedure, having due regard to all necessary safety measures, is an important step towards establishing LNG as a marine fuel on a permanent basis in Germany. The same applies to the introduction of internationally recognized clearances during a joint unloading and bunkering procedure, in order to ensure maximum safety. All in all, the standardization and acceleration of internationally recognized approval procedures at German sea and inland ports is of crucial importance.¹⁰³

By transposing the *EU's Clean Power for Transport Directive*¹⁰⁴, which entered into force on 7 November 2014, Germany has undertaken to establish a national policy framework for the deployment of alternative fuels infrastructure within two years and transmit it to the European Commission.

¹⁰³ Cf. Maritime LNG Platform: *Die Markteinführung von LNG in Deutschland: Relevante Faktoren und Aspekte*, January 2015, p. 3f.

¹⁰⁴ *Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure.*

Description of the measures

- The **ports sector** will deploy infrastructure for the bunkering of LNG ships that is in line with market conditions.
- The **Federal Government** will explore whether, and if so what, measures can be considered to provide LNG with better sales prospects.
- The **federal states** and the **ports sector** will draw down the funds earmarked for the deployment of LNG infrastructure within the TEN framework.
- The **federal states, local authorities** and **ports sector** will provide land for the LNG infrastructure where this makes economic sense.
- The **Federal Government** will campaign for a harmonization and acceleration of internationally recognized approval procedures and standards for LNG infrastructure.
- The **Federal Government** will join forces with the federal states and the industry to develop a national policy for the deployment of alternative fuels infrastructure by the end of 2016.

Impact

The deployment of LNG infrastructure at the ports will help to make shipping more environmentally friendly and reduce its climate change impact, and will enable shipping to play the pioneering role envisaged in the Federal Government's Mobility and Fuel Strategy in the changeover to alternative fuels. Support by the Federal Government could accelerate the deployment of LNG infrastructure. The harmonization of internationally recognized approval procedures will ensure safety and standard procedures in LNG bunkering. The national policy for the deployment of alternative fuels infrastructure will transpose the corresponding EU directive

Responsibility

The ports sector (port operators) is responsible for deploying the LNG infrastructure. The provision of land is to be coordinated between the federal states, local authorities and port administrations on the one side and the operators of the LNG installations on the other side. The Federal Government is responsible for providing support to the deployment of the infrastructure, conducting the negotiations on the harmonization of internationally recognized approval procedures and standards and developing the national policy.

Budgetary relevance

The possible provision of financial assistance by the Federal Government to the deployment of LNG infrastructure could place a burden on the federal budget. TEN ports can receive European funding for the deployment of LNG infrastructure.

EU relevance

The measures are in keeping with the objectives of EU energy policy and are designed to transpose the *EU's Clean Power for Transport Directive*.

Implementation periods

The national strategy for the deployment of alternative fuels infrastructure is to be developed by the end of November 2016. The implementation periods are derived from this.

4.4. Ensure shore-side electricity supply

Current situation

While ships are berthed in ports, electricity and heating for their own consumption are generated with the help of on-board diesel engines. Under Article 14(1)(a) of the EU's Energy Products Directive (2003/96/EC), these fuels and the electricity generated by the ship itself are mandatorily exempt from energy and electricity tax respectively, and are thus attractively priced for ship operators. Nevertheless, despite the sulphur limit for marine fuel of 0.1 % that has applied at ports since 2010, these processes release considerable quantities of harmful substances (SO_x, NO_x, PM) and climate change gases (CO₂) that pollute the environment. The energy requirements of ships when berthed, especially cruise ships, are considerable and can be met either by on-board (internal combustion) engines or external power supply. Shore-side electricity supply is an ecologically acceptable alternative.

Given today's environment and electricity prices, the provision of shore-side electricity is uneconomical. The high costs cannot compete with the significantly cheaper generation of on-board energy. In addition, shore-side electricity requires additional expenditure on converting the ships.

The high costs mean that there is a lack of take-up for shore-side electricity supply in Germany. This significantly hampers the reduction in shipboard emissions in ports that is an aim of climate change and environmental policy. Ferries in our Scandinavian counterpart ports have been supplied with shore-side electricity for years.

The deployment of shore-side electricity infrastructure will be funded within the scope of the TEN-T programme.

Description of the measures

- The **Federal Government** will lobby for inclusion of mandatory tax exemption for shore-side electricity supplied to commercial shipping in the EU Energy Products Directive.
- The **Federal Government** has had the authorization to grant exemptions set out in Article 19 of the EU Energy Products Directive extended by the Council, acting on a proposal from the Commission, to 2020 for Section 9(3) of the Electricity Tax Act, as a result of which the electricity tax rate for shore-side electricity in Germany is lowered to the minimum tax rate of €0.50/Mwh.
- The **federal states** and the **ports sector** will draw down the funds earmarked for shore-side electricity supply within the TEN framework.

Impact

The lower electricity tax rate will reduce, at least in part, the difference in cost between shore-side electricity and electricity generated on-board. This will encourage more passenger vessels to use shore-side electricity, with a positive impact on the quality of the air in port cities. TEN funding can be used to reduce the costs of installing shore-side electricity systems.

Responsibility

The Federal Government is responsible for implementing these measures. The installation and operation of shore-side electricity systems is the responsibility of the federal states, the ports sector (port operators) or the energy supply sector.

Budgetary relevance

The lower electricity tax rate currently in force places a burden on the federal budget. The burden on the federal budget would increase accordingly if the Federal Government were to achieve inclusion of mandatory tax exemption for shore-side electricity in the EU Energy Products Directive.

EU relevance

The measures are in keeping with the objectives of EU energy policy and are designed to transpose the Clean Power for Transport Directive.

Implementation periods

It is not possible to estimate how much time implementation will require.

4.5 Introduce emissions-based port dues nationwide

Current situation

The Environmental Ship Index (ESI) makes it possible to identify ships that perform better in reducing air emissions than required by the current instruments of the International Maritime Organization. The Index describes the amount of nitrogen oxide and sulphur oxide that is released by a ship and includes a reporting scheme on the greenhouse gas emissions of the ship. The Index can be used to compare emissions from ships and derive emissions-based port dues.

Ships that score a high number of ESI points can be rewarded by means of lower port dues, whereas ships with high emission values have to offset some of the environmental costs they cause by paying higher dues. The ESI provides an incentive to use more environment-friendly propulsion systems and fuels. The German ports of Bremen/Bremerhaven, Kiel, Brunsbüttel, Rostock and Hamburg and the ports operated by Niedersachsen Ports use the ESI to offer corresponding reductions in port dues. Similarly, some harbour railways have already introduced emissions-based user charges for shunters.

Description of the measure

- The **federal states** will consider the introduction of emissions-based port dues for all German ports and introduce them if appropriate.

Impact

Emissions-based port dues provide shipowners with an additional incentive to switch over to more environment-friendly types of propulsion.

Responsibility

The federal states are responsible for implementing these measures.

Budgetary relevance

None

EU relevance

The measure is in keeping with the objectives of EU energy policy and is designed to transpose the *EU's Clean Power for Transport Directive*.

Implementation period

The process of consideration should start as soon as possible.

4.6 Mitigate the impact of noise

Current situation

Noise is a socially relevant problem. The population's exposure to noise must be reduced. Noise abatement should normally start by tackling the source of the noise. This is the most efficient and most sustainable strategy. The benchmark must be the state of the art for controlling emissions.

Freight traffic on the railways and to and from the ports can result in residents being exposed to enormous levels of noise if the transport infrastructure passes through residential areas or runs adjacent to them. In the years ahead, therefore, it will be necessary to undertake further substantial efforts to achieve significant progress in protecting people against traffic noise.

The measures of the Federal Ministry of Transport and Digital Infrastructure's Second National Traffic Noise Mitigation Package ¹⁰⁵ pave the way for this. On this basis, the Ministry has already established some milestones for reducing the population's exposure to traffic noise, for instance by:

- lowering the noise limits for tyres by a clearly audible 2-4 dB(A) and for motor vehicles in three stages over the period to 2026;
- sustaining and increasing the level of funding for noise mitigation on existing roads and railway lines;
- lowering the thresholds for noise mitigation on federal trunk roads by 3 dB(A);
- conducting successful tests of innovative noise mitigation measures on railway lines and revising the method for calculating railway noise ("Schall 03");
- abolishing the "rail bonus" in the calculation of noise;

¹⁰⁵ Federal Ministry of Transport, Building and Urban Development: *Nationales Verkehrslärmschutzpaket II „Lärm vermeiden – vor Lärm schützen“*, August 2009.

- introducing noise-differentiated track access charges for freight trains on the DB AG network and providing Federal Government funding for the retrofitting of freight wagons with whisper brakes.

The programme of noise mitigation work for federal trunk roads, which has been running successfully for many years, has made a major contribution to improvement in areas suffering from high levels of noise. The programme of noise mitigation on existing federal railway lines, which has been running since 1999, is also increasingly covering these areas. By increasing public funding for noise mitigation on roads and railways to its current level of €195 million per annum (€65 million for federal trunk roads, €130 million for federal railway infrastructure), it has been possible to include additional sections of roads and railway lines in the financial assistance programme.

Many ports are sufficiently far away from residential areas that the noise emitted by the handling and industrial enterprises does not constitute a nuisance to the population. However, other ports, because of their proximity to residential areas, are in permanent conflict with the local residents because of their noise emissions.

There are instruments in Germany to protect neighbourhoods against industrial noise, namely the Federal Immission Control Act and the Technical Instructions on Noise Abatement. Under these instruments, approval for the construction and operation of industrial and commercial installations is only granted if the installations do not cause harmful environmental impacts through noise.

Description of the measures

- The **Federal Government** will continue to lobby to ensure that the population's exposure to noise is reduced by 50 percent in the railway sphere and 30 percent in the road sphere by 2020, compared with 2008 levels, as envisaged in the Second Noise Mitigation Package.
- The **Federal Government** will continue the noise mitigation measures on existing roads and railway lines.
- The **ports sector** will consider how the emissions of noise from port handling facilities and industrial enterprises in the ports can be reduced using state-of-the-art technology where this is necessary because of the proximity to residential areas and commercially feasible.

Impact

The measures are designed to protect the population against noise emissions from freight traffic and ports.

Responsibility

The measures to reduce noise pollution by freight traffic are to be implemented by the Federal Government, the federal states and the logistics sector. The Federal Government is responsible for continuing the programme of noise mitigation work on existing roads. DB Netz AG, with the support of the Federal Government, is responsible for the corresponding programme on existing railway lines. Reducing the noise directly emitted by ports is the responsibility of the ports sector (port operators and port companies).

Budgetary relevance

The noise mitigation measures are covered by the federal budget.

EU relevance

None

Implementation periods

The levels envisaged in the Second Noise Mitigation Package for a reduction in railway, road and inland waterway noise are to be achieved by 2020. In addition, noise mitigation is a permanent task.

4.7 Protect German coasts against the consequences of climate change**Current situation**

The climate is changing. The German Strategy for Adaptation to Climate Change is based on the assumption that the average annual temperature in Germany will rise by 0.5 to 2.5 degrees Celsius over the period from 2021 to 2050 and by 1.5 to 4.5 degrees Celsius over the period from 2071 to 2100, compared with the period from 1961 to 1990. Precipitation is likely to increase in winter. Depending on the regional climate model, this increase could be up to 40 percent, and in some areas precipitation may increase by as much as 70 percent. Summer precipitation could decrease nationwide by up to 40 percent, depending on the model, with the southwest of Germany being especially hard hit. An analysis of the consequences of climate change has to take into account not only the likely impact of these gradual changes emerging

in the mean values, but also the consequences of extreme events that are likely to occur more frequently and with increasing intensity and of increasing climate variability.¹⁰⁶

In the past, storm surges have repeatedly resulted in high levels of damage, for instance the 1962 storm surge. Thanks to the coastal protection measures that were subsequently taken, the approximately 1.1 million hectares of low-lying areas on the German North Sea and Baltic Sea coasts are protected today. So far, it has been possible to prevent all the subsequent storm surges from causing major damage.

The German Strategy for Adaptation to Climate Change has laid the foundation for a medium-term process in which, gradually and in cooperation with the federal states and stakeholders from society, the level of impact of global climate change will be identified, risks assessed, requirements for action specified and adaptation measures developed and implemented. The objective of the Adaptation Strategy is to reduce vulnerability to the consequences of climate change and to maintain or improve the adaptability of natural, social and economic systems.¹⁰⁷

The Federal Ministry of Transport and Digital Infrastructure's KLIWAS research programme, which ran for five years (2009 to 2013) and comprised 30 projects, developed new methods and tools for appraising, on a sound scientific basis, the impact of climate change on waterways and shipping with a holistic approach to looking at the water system. As a result, for some issues and regions it is already possible to identify the need for adaptation in a new quality. The fact that the Federal Ministry of Transport and Digital Infrastructure's departmental research establishments involved in the programme (Federal Institute of Hydrology, Federal Waterways Engineering and Research Institute, Federal Maritime and Hydrographic Agency, German Meteorological Service) permanently work "at the coal face" and that they are closely interlinked to form a collaborative research group played a crucial role in the successful outcome of the research programme.

The findings of KLIWAS are of fundamental importance for the waters in Germany, and thus also for many other action areas of the German Strategy for Adaptation to Climate Change. The approach of considering the waterways integrally as a system and establishing a spectrum

¹⁰⁶ Federal Ministry for the Environment, Nature Conservation and Nuclear Safety: *Aktionsplan Anpassung der Deutschen Anpassungsstrategie an den Klimawandel*, November 2012, p. 9.

¹⁰⁷ Ibid. p. 8.

of projections at the levels of the model chain, thereby creating awareness in the academic adaptation discussion, was an innovative feature of KLIWAS.

KLIWAS is thus a lighthouse project of the Federal Government in the implementation of the German Strategy for Adaptation to Climate Change and is of cross-departmental importance to the Adaptation Action Plan (APA I, 2011). For the North Sea, the KLIWAS research project has developed significantly improved projections for the future by carrying out for the first time a regional coupling of ocean and atmosphere.

In the coupled projections, seawater and air temperatures will rise significantly over the period to the end of the century: mean annual water temperatures by up to 2.5°C and air temperatures by up to +2.8°C, with warming possibly exceeding +3°C in the cold winter half of the year. The wind direction and wind speed are subject to high variability and there are currently no clear trends. As far as sea state is concerned, a rise was recorded in the eastern North Sea and a decrease in the western North Sea. The rise in sea level on the German coasts is currently still inadequately quantified, because it is subject to great uncertainty as a result of the share of melting mountain glaciers and continental ice sheets.

KLIWAS was unable to address all regions and issues, which means that it is necessary to continue the research activities. Some of the unanswered questions can be addressed in a cross-modal context by a network of experts from the Federal Ministry of Transport and Digital Infrastructure's departmental research establishments. In addition, the establishment of the developed methods as a regular range of services for climate change and water projections in Germany and for the monitoring of climate change and adaptation progress confronts the departmental research establishments with a new challenge.

In Germany, the federal states are responsible for measures to improve coastal protection. In accordance with Article 91a of the Basic Law, the Federal Government participates in the performance of this function within the scope of the "Act to Improve Agricultural Structures and Coastal Protection." This Act is implemented annually by the Federal Government and federal states drawing up framework plans for the joint task of improving agricultural structures and coastal protection. Alongside the provision of financial assistance to coastal protection via the regular framework plan, there is also a special framework plan entitled "Coastal Protection Measures required because of Climate Change." This plan pursues the objective of speeding up implementation of first-priority coastal protection measures taken by the coastal federal states of Schleswig-Holstein, Hamburg, Lower Saxony, Bremen and

Mecklenburg-Western Pomerania. This involves expenditure of federal funds of up to €35.7 million per annum.¹⁰⁸

Description of the measures

- Within the limits of the funds available, the **Federal Government** will continue to support measures taken by the federal states to improve coastal protection at a rate of up to 70 % of the eligible costs incurred.¹⁰⁹ Coastal protection and flood control measures will be improved by conceptual preliminary work and surveys, new construction, the reinforcement and heightening of flood defences, barrages and other structures in the flood control line, groynes, breakwaters and other in-sea installations, foreshore works in front of sea dikes plus beach nourishment and embankments.
- The **Federal Government** will continue to join forces with the **federal states**, within the framework of the German Strategy for Adaptation to Climate Change, to address specific issues related to climate change adaptation.
- The **federal states** will join forces with the Federal Government to implement the necessary measures to protect the coasts against the consequences of climate change.

Impact

The coastal protection measures will protect people and material assets on the German coasts in an optimum manner against the consequences of the increasing extreme weather events. KLIWAS can provide foundations for possible later adaptation measures.

Responsibility

In accordance with Article 91a of the Basic Law, the Federal Government participates in the performance of this federal state function within the scope of the Act on the Joint Task of "Improving Agricultural Structures and Coastal Protection." The federal states are responsible for implementing the measures. All parties involved are responsible for evolving measures for adaptation to climate change.

Budgetary relevance

The measures of the special framework plan entitled "Coastal Protection Measures required as a Result of Climate Change" currently impose a burden of up to €25 million per annum on the federal budget.

¹⁰⁸ Ibid. p. 53.

¹⁰⁹ Cf. Federal Ministry of Food and Agriculture: *GAK-Rahmenplan ab 2015 - Förderbereich "Küstenschutz"*, March 2015.

EU relevance

The European Commission has presented a European adaptation strategy addressing the issue of climate change adaptation.

Implementation periods

The measures of the special framework plan entitled "Coastal Protection Measures required as a Result of Climate Change" are to be implemented by 2025. Even after that date, it will still be possible to provide financial assistance to coastal protection via the regular framework plan. Climate change adaptation is a permanent task.

4.8 Ensure port development in flood zones

Current situation

Many competent licensing authorities are currently reviewing the flood zones on German rivers. This is resulting in changes, which means that parts of ports that used to be outside flood zones are now within them.

The incorporation of ports into flood zones can result in new buildings, extensions and modifications in ports being hampered because, for instance, they are prohibited by the Federal Water Act. Implementation by designating compensation land as soon as possible and as close to the original site as possible is often not possible or not economically feasible in conurbations. Section 78(1) of the Federal Water Act provides for an exemption for development plans of ports. However, case law contains no more detailed explanations as to how Section 78 of the Federal Water Act is to be understood, so that its application to specific planning and construction cases is unclear.

Description of the measure

- The **Federal Government** will examine whether there should be clarification of Section 78(1) of the Federal Water Act in relation to ports, shipyards and similar water-related enterprises.¹¹⁰

Impact

Clarification will lead to legal certainty and make it possible to carry out the necessary construction works in the ports in order to meet future logistical requirements.

¹¹⁰ In Hamburg, there are no development plans for the port area. Rather, the Port Development Act is applicable. Clarification of Section 78 of the Federal Water Act should be given special consideration in this regard.

Responsibility

The Federal Government is responsible for clarification.

Budgetary relevance

None

EU relevance

Clarification is to take account of European *Directive 2007/60/EC* of 23 October 2007 on the assessment and management of flood risks.

Implementation period

This measure is to be implemented by 2017.

5. Measures for good training and jobs**5.1 Re-launch the programme to train and integrate long-term unemployed workers****Current situation**

In the 2009 National Ports Strategy, the Federal Employment Agency and the ports sector agreed to reintegrate 2,800 people, most of them long-term unemployed workers, into the mainstream labour market by 2012. The Federal Employment Agency (local employment agencies and job centres) provided €80 million of funding for this programme of training and recruitment. Notwithstanding the economic crisis, the ports sector went beyond its pledge, which meant that up to 2014 it was possible to offer over 4,200 long-term unemployed workers job prospects.

For the next 15 years, the maritime traffic forecast for 2030 predicts lower growth in the volume of cargo handled by the ports than was assumed in earlier forecasts before the global economic crisis.¹¹¹ Additional port capacity, for instance at Rotterdam, is intensifying competition between the North Range ports. As a result of this, and as a result of technological developments, the German seaports are coming under increasing pressure to rationalize. Thus, the priorities for the port companies are to stabilize employer-employee relations and extend initial training. Despite this, they are prepared to continue the programme of training and recruitment for long-term unemployed workers with support from the Federal Employment Agency.

¹¹¹ MWP, IHS, UNICONSULT, Fraunhofer CML: *Seeverkehrsprognose 2030*, May 2014, p. 1.

Description of the measures

- Provided that the growth in the volume of cargo handled by the German ports follows the trend predicted in the maritime traffic forecast for 2030, the German **seaports sector** will, over the period to 2020, take on 1,000 unemployed people, most of them long-term unemployed workers, on a permanent basis.
- The **Federal Employment Agency** (local employment agencies and job centres) will provide funding of up to €30 million for the training and recruitment of the 1,000 predominantly unemployed workers and the stabilization of employer-employee relations via the programme entitled "Advanced training for low-skilled and older workers employed in companies".
- The **social partners** will support this process by demonstrating flexibility in their collective bargaining.

Impact

These measures will reduce long-term unemployment, especially in less favoured regions.

Responsibility

The ports sector (port operators and port companies) and the Federal Employment Agency are responsible for implementing this measure.

Budgetary relevance

The costs of this measure will be covered by the ports sector and the Federal Employment Agency, with its local employment agencies and job centres.

EU relevance

None

Implementation periods

This measure will run up to and including 2021.

5.2 Provide staff with the skills they need to meet new challenges

Current situation

Ports offer a wide range of attractive, interesting and often highly skilled jobs. To ensure rapid and safe cargo handling at ports, highly skilled workers are required, for instance on the

handling equipment, in the movement of containers in the port, in the slinging of loads, in taking delivery of goods, in distribution and in checking containers.

Occupational profiles at ports are subject to constant change, which has recently accelerated due to technological developments. The growing degree of automation in port logistics, the increasing importance of the information flows accompanying consignments and the management of growing volumes of freight by means of innovations in the organization of interfaces and the handling of processes are raising the requirements to be met by workers' skills at all levels.

If ports are to compete successfully for skilled workers and retain their own staff in the company, it is important that they present themselves as an attractive employer. Pay alone is not sufficient to attract employees to a company and ensure that they stay there. According to a worldwide survey conducted by *Logistik Heute* and Europhia Consulting among 700 logistics professionals, companies that are attractive to employees are, above all, those that have a good corporate culture, those with which the employees can identify, those in which there is a good working atmosphere, those that guarantee a secure job and those that invest in training and coaching.¹¹²

In the logistics sector, too, there is great demand for skilled labour. Above all, there is a shortage of business administration graduates. Companies also bemoan a lack of skilled workers with commercial training and for physical logistics.¹¹³

It is the task of the social partners to champion initial and continuing training and skilled employment, so that the challenges posed by change can be tackled in partnership by the two sides of industry.

Description of the measures

- The **ports sector** will continue to address the change in occupational profiles and the skilled labour shortage by providing high-quality initial and continuing training opportunities so that the ports have sufficient skilled workers at their disposal for the challenges of the future.

¹¹² Quoted in German Logistics Association *Management Summary zur Umfrage „Arbeitgeber Logistik“ Arbeitgeber mit Zukunft – der Wirtschaftsbereich Logistik, Eine Umfrage der Bundesvereinigung Logistik (BVL) e.V.*, April 2012, p. 4.

¹¹³ Ibid. p. 9.

- The **social partners** will continue their sustained cooperation in championing initial and continuing training and skilled employment.
- The **ports sector** will regularly review initial and continuing training courses for the long-term unemployed and, where possible, give preference to long-term unemployed workers when hiring new staff.

Impact

Initial and continuing training courses will reflect the changing occupational profiles and new requirements to be met by the skills of employees at ports.

Responsibility

The social partners are responsible for implementing these measures.

Budgetary relevance

None

EU relevance

None

Implementation periods

These measures are permanent tasks.

5.3 Shape demographic change

Current situation

In the opinion of the ver.di trade union, the effects of demographic change in ports are aggravated by a high degree of physical and mental stress caused by "peak situations", which result from the requirements of ships that are getting larger.

The social partners are engaged in an intensive dialogue on the impact of demographic change. Their joint objective in collective bargaining is to develop toolkits geared to individual companies in order to future-proof the requirements and different job histories of the employees.

One of the main components of this is to be the establishment of a demographic fund for which both sides of industry are responsible and from which the financial assistance to the company-related applications is to be provided.

Description of the measures

- The **ports sector** will address demographic change among port workers in a dialogue with the unions. This will involve the social partners establishing "demographic funds" for the implementation of company-related toolkits on which agreement has still to be reached.
- The **Federal Government** and **federal states** will explore whether the social partners can be supported in the implementation of possible fund models.

Impact

The establishment of demographic funds for the development of company-related applications that will relieve the burden on older workers in the context of increasing ship sizes and cargo consolidation can meet demographic trends in the ports sector.

Responsibility

The social partners are responsible for implementing these measures. The Federal Government will explore the possibility of supporting the social partners.

Budgetary relevance

The provision of possible support by the Federal Government to the social partners would impose a burden on the federal budget; support by the federal states would impose a burden on the federal state budgets.

EU relevance

The provision of possible financial assistance by the Federal Government must remain within the constraints imposed by EU competition law.

Implementation periods

Agreement between the social partners is to be reached in 2016 if possible.

5.4 Improve working conditions of port workers and ensure workplace safety and health

Current situation

Because of technological progress, employees face new additional challenges, for instance in the handling of containers and cars, which, in addition to shift work and work on public holidays, place a physical strain on workers. Another aspect of change in dock work is that workers are expected to show a high degree of willingness to learn and flexibility.

Dock work involves health risks as a result of a number of factors, including process-related cooperation requirements, constantly changing workplaces, moving transport and equipment, unprotected and moving parts, falling or collapsing objects, and the special location and dimension of workplaces. A continuous review and improvement of occupational health and safety thus continues to be especially important in the field of dock work. For this reason, special attention should be focused on age-appropriate ergonomics and organization of work.

Description of the measures

- The **ports sector** will, as in the past, pay port workers a decent wage, give them prospects of promotion and provide all port workers with opportunities for further training, as well as providing them with a safe and healthy workplace.
- The ports sector, in a dialogue with the unions, will continuously improve the working conditions of port employees, where this is necessary, taking care to ensure that workplaces are designed so as to be age-appropriate.

Impact

The measures will result in port workers, as in the past, having appropriate working conditions with decent pay and being protected against health hazards in an optimum manner.

Responsibility

The measures will be implemented by the ports sector (port companies) in a dialogue with the unions.

Budgetary relevance

None

EU relevance

None

Implementation periods

These measures are permanent tasks.

5.5 Increase the share of female workers at ports

Current situation

Dockworkers must be employable anywhere at the terminal and not just master a specific task. As a result of progressive automation of and changes to the work processes in cargo

handling, jobs at ports are becoming interesting and suitable for women. The share of women will thus increase significantly in the future. For reasons of demographic change, too, port companies should train and employ women so as to be able to meet their requirements for skilled labour in the future.

Description of the measures

- The **ports sector** will, as in the past, offer training initial and continuing training courses for women and men alike.
- The **ports sector** will, as in the past, hire women and men regardless of their gender.
- The **ports sector** will, as in the past, give equal pay for equal work by women and men.
- The **ports sector** will, as in the past, appoint people to management positions regardless of their gender.
- The **ports sector** will develop and implement further measures to promote work-life balance.

Impact

Providing more gender-neutral initial and continuing training, hiring women and men with the same aptitude, ensuring equal pay for equal work and appointing people to management positions regardless of their gender will improve the career prospects of women and address the skilled labour shortage and demographic change. Measures to promote work-life balance will support women and men alike in exercising their family rights and obligations.

Responsibility

The ports sector (port companies) is responsible for implementing these measures.

Budgetary relevance

None

EU relevance

The measures are in line with the rights laid down in the Community Charter of Fundamental Social Rights for Workers, which were integrated into the Lisbon Treaty.

Implementation periods

These measures are permanent tasks.

6. Measures to ensure appropriate safety and security

6.1 Evolve measures to protect the sea and inland ports

Current situation

Although the ports are among the best-protected links in the freight transport chains, they are exposed to new threats, especially from terrorism, natural disasters and cyber attacks.

Ensuring the protection of these infrastructures is a core task of precautionary security measures taken by the public and private sector and is a key issue in our country's security policy. If we are to preserve this high level of security in the future, we must continue along the path we have trodden so far, which has been one of constructive collaboration in a spirit of trust to ensure comprehensive protection for the ports, and intensify and expand the collaboration between the public and private sector stakeholders.

As part of its international cooperation, Germany supports all efforts and measures that are likely to identify and minimize the vulnerability of infrastructures, especially those with a cross-border impact. A key role is played by the expansion of existing and the promotion of new bilateral collaborative schemes for the exchange of information and best practice and for the coordination of measures to protect cross-border critical infrastructures.

Description of the measures

- The **Federal Government, federal states** and the **ports sector** will engage in open risk communications to evolve preventive and reactive measures to protect the ports.
- The **Federal Government, federal states** and the **ports sector** will be guided in the evolution of these measures by the need to avoid imposing unnecessary burdens on the ports through protective measures.
- The **Federal Government, federal states** and the **ports sector** believe that risk-based spot checks are an appropriate means for ensuring cargo security.
- The **federal states** will synchronize their efforts to evolve security measures to ensure that the procedures are as uniform as possible throughout Germany.
- The **Federal Government** will campaign at the international organizations for the evolution of appropriate mandatory international standards for shipping and port security.
- The **Federal Government** will campaign for an international harmonization of security measures where this is possible.
- The **Federal Government** will support the exchange of information, best practice and the coordination of measures to protect cross-border infrastructures at international, European and bilateral level.
- The **Federal Government** will continue, at international level, to oppose security measures that are disproportionate and distort competition.

Impact

The evolution of security measures within the scope of open risk communications will ensure appropriate protection and prevent unnecessary burdens being imposed on ports. Risk-based spot checks have proven to be an effective means of security. Coordination between the federal states in the evolution of measures will prevent unnecessary bureaucracy and duplication of work. International harmonization of the security measures and the exchange of information and best practice will prevent distortions of competition and disproportionate measures.

Responsibility

The Federal Government, federal states and ports sector (port operators) are responsible for evolving security measures. Evolving the measures at international, European and bilateral level is the responsibility of the Federal Government.

Budgetary relevance

Implementation of the security measures will be funded mainly by the ports sector.

EU relevance

Among other things, these measures implement European *Regulation (EC) No 725/2004*. In the evolution of the security measures, the Federal Government will consult with its European partners.

Implementation periods

These measures are permanent tasks.

6.2 Protect IT in the ports and logistics chains

Current situation

The use of IT in the ports sector and logistics will rise exponentially in the future, as a result of which logistics will become increasingly dependent on smoothly functioning IT.

Production and process automation systems – grouped under the heading of industrial control systems (ICS) – are used in almost all infrastructures that handle physical processes¹¹⁴, and thus also in ports.

These systems are increasingly exposed to cyber attacks, for instance the infection of control components by malware via office networks, malware infiltration via removable storage media and external hardware, social engineering, human error and sabotage or intrusion via remote maintenance interfaces. The attackers and their methods of attack are constantly evolving and becoming more professional, resulting in a heightened level of threat to cybersecurity.¹¹⁵

Internal information stolen by industrial espionage, for instance about competitors and their products, can constitute pecuniary advantages in global competition. There may also be cyber attacks by state intelligence services with the aim of industrial espionage. In the military sector, cyberspace is now in many cases regarded as a further important domain alongside the classic military fields of land, sea, air and space.¹¹⁶

¹¹⁴ Federal Office for Information Security: *Die Lage der IT-Sicherheit in Deutschland 2014*, November 2014, p. 14.

¹¹⁵ Ibid. p. 25.

¹¹⁶ Ibid. p. 24.

In the protection of critical information infrastructures, the Federal Government is pursuing a holistic approach, both strategically and in operational implementation, within the framework of which the KRITIS implementation plan was created in 2005 and 2006 in cooperation with the operators of critical infrastructures. Publication of the implementation plan in 2007 institutionalized this public-private cooperation, which is now known as UP KRITIS. The joint objective is to improve the protection of critical infrastructures across sectoral boundaries. The cross-sectoral cooperation between the private and public sectors in UP KRITIS has become an example of best practice.¹¹⁷

The ports sector is called upon to join forces with the Federal Government and contribute to the implementation of the cyber security strategy for Germany. The objective must be that implementation of these protective measures not only safeguards the sector's own business processes but also makes Germany a more attractive place to do business and enhances the international competitiveness of our country.

On 25 July 2015, the Act to enhance the Security of Information Technology Systems (IT Security Act) entered into force. This is one of the first tangible outcomes of the Federal Government's Digital Agenda. The Act describes requirements to be met by the IT security of critical infrastructures, i.e. installations that are of key importance for the body politic, for instance in the transport sector. In the future, the operators of critical infrastructures are to comply with a minimum standard of IT security and report serious IT security incidents to the Federal Office for Information Security.

Description of the measures

- The **Federal Government** and the **ports sector** will progress the implementation of the cyber strategy at ports.
- The **ports sector** will participate in fleshing out the statutory instrument implementing the IT Security Act, within the framework of the Federal Ministry of Transport and Digital Infrastructure's existing "Security in Logistics Working Party".
- The **ports sector** will progress implementation of the cyber security strategy and implement the provisions of the IT Security Act to the extent that it is affected by the requirements to be laid down by law.

¹¹⁷ Federal Office for Information Security: *UP KRITIS – Öffentlich-private Partnerschaft zum Schutz Kritischer Infrastrukturen*, February 2014, p. 6.

- The **Federal Government** will take care to ensure that implementation of the IT Security Act does not result in any duplication of the requirements of EU and international law.

Impact

Implementation of the cyber security strategy and the IT Security Act will result in a higher level of protection of IT systems and infrastructures against cyber attacks and will make it possible to continuously adapt this protection to new security threats. To preserve legal clarity, duplications of provisions in the IT Security Act and in European and international law must be avoided.

Responsibility

The Federal Government and the ports sector (port operators and port companies) are responsible for implementing these measures.

Budgetary relevance

Implementation of the provisions of the IT Security Act will be funded mostly by the ports sector to the extent that it is affected by the requirements to be laid down by law.

EU relevance

This measure will transpose the EU's NIS Directive.

Implementation periods

These measures are permanent tasks.

7. Measures for better coordination of ports policy

7.1 Intensify cooperation between the Federal Government and federal states in ports policy

Current situation

In recent years, the Federal Ministry of Transport and Digital Infrastructure has registered a sharp increase in the number of responsibilities in the sea and inland ports sector. In particular,

national

- infrastructure policy (demands by the federal states regarding implementation of the Ahrensburg List and the Düsseldorf List),
- investment policy (demands by the federal states for the provision of financial assistance to the ports for offshore wind energy),
- security policy (protection of critical infrastructures) and

- environmental and climate change policy (Regulations Governing Installations that Handle Aquatic Pollutant Substances);

but also **European** (representation of the Federal Government's and federal states' interests in the negotiation and implementation of EU regulations, directives and guidelines)

- economic policy (planned Regulation on European ports policy, Concessions Directive, state aids directives),
- infrastructure policy (TEN),
- environmental policy (Directive on the deployment of alternative fuels infrastructure, Invasive Species Regulation)

increasingly require the Federal Government to act in matters relating to ports.

The provision of timely information to the Federal Government and its inclusion in the federal states' port planning activities at an early stage would enable it to point out plans that do not correspond to the Federal Government's ideas and to identify problems resulting from this.

Projects supported by the Federal Government would carry more weight and their implementation would be facilitated.

Whereas the Federal Government's processes include the federal states in the case of strategic planning and projects of relevance to ports, such as the FTIP, maritime traffic forecast and National Ports Strategy, this is not sufficiently the case the other way round.

However, it will not be possible to maintain and improve the competitiveness of the German ports unless the division of responsibilities and cooperation between the Federal Government and the federal states work in an optimum manner.

Description of the measures

- The **federal states** will involve the Federal Government in their port development planning activities at an early stage.
- The **federal states** will involve the Federal Government in the development of their own specific port strategies.
- The **Federal Government** and the **federal states** will reciprocally provide each other with all relevant information that is necessary for representing the interests of the ports at European and international level.
- The **Federal Government** will assume a greater coordinator role in the transposition of port-related European rules and regulations by the federal states.

- The **Federal Government** and the **federal states** will take greater account of the port interests of the landlocked federal states in ports policy in a Ports Working Party.

Impact

The timely involvement of the Federal Government in the federal states' port development planning activities and port strategies will support targeted infrastructure planning and funding policies. The provision of more comprehensive information will enable the Federal Government to better represent the interests of ports at European and international level. Tighter coordination of the transposition of European rules and regulations by the Federal Government will result in a more uniform transposition of the rules and regulations and/or prevent different interpretations of them. Involvement of the landlocked federal states in a Ports Working Party will encourage the linking-up of the sea and inland ports and take the interests of the inland ports into account.

Responsibility

The federal states are responsible for making it possible for the Federal Government to be involved in their port development planning activities at an earlier stage and for the provision of information. A Ports Working Party will be created jointly by the Federal Government, the federal states and trade associations.

Budgetary relevance

None

EU relevance

The representation of port and port sector interests at EU level will be improved.

Implementation periods

These measures are permanent tasks. The working party comprising the Federal Government and the federal states with ports is to be established in 2016.

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