

# **Sustainable Baltic Sea Shipping**

## **Green Technology and Alternative Fuels**

### **Draft Roadmap**

**for future actions 2014 – 2016 and 2017 – 2025**

**Shaping the future together**

The Baltic Sea is the lifeline in our region. “Mare Nostrum” provides connectivity and prosperity and well-being for countries and the people around the sea. Today the ecological state of the Baltic Sea is fragile, and finding ways of stimulating innovation and growth that goes hand in hand with sustainable development, is more urgent than ever. The use of green technology and alternative fuels in the shipping sector would bring economic growth for the region as well as many environmental benefits for the Baltic Sea. Joint actions by the administrations and the private sector stakeholders would promote an early introduction and use of new technological solutions and clean power for ships.

To make further progress in the field of sustainable shipping, the Finnish Presidency of the Council of the Baltic Sea States (CBSS) and HELCOM organized, in cooperation with the Baltic Development Forum (BDF) and the Northern Dimension Partnership on Transport and Logistics (NDPTL), a Conference on “Sustainable Baltic Sea Shipping, Green technology and alternative fuels with focus on air emissions” on 16th January 2014 on board the LNG fuelled passenger ship Viking Grace. The event brought together nearly 100 participants coming from the public and private sectors, policy makers, administrations, the business community, the finance expertise and research & development representatives.

### **Green Technology and Alternative Fuels Platform in the Baltic Sea**

A new cooperation forum, the “Green Technology and Alternative Fuels Platform in Baltic Sea Shipping” was launched at the Conference to promote development by working together, taking also into account synergies of such a Platform with other processes on regional and international level, such as HELCOM, the Saint Petersburg Initiative (SPI), the European Sustainable Shipping Forum (ESSF), and the International Maritime Organization (IMO). The Platform provides a forum for a structured dialogue between the public and the private sector stakeholders, including ship-owners, shipbuilding and marine design enterprises, manufacturers, ports, cargo owners and the research

community, with a view to enhance to effectiveness of measures through information sharing, increased communication and coherence.

The Platform will be open for all interested stakeholders.

A “Network of Platform Actors” will be created using existing networks and project organizations under the leadership of HELCOM and the Zero Vision Tool (ZVT)/Sweden and a List of National Focal points (amongst the administrations and the industry stakeholders) will be compiled.

A joint information sharing portal will also be developed based on experience and use of existing portals with the assistance of the Baltic Development Forum and the ZVT/Sweden.

## **Draft Roadmap for future actions**

The Conference worked on a joint understanding on the way forward to promote sustainable shipping, with a focus on air emissions from shipping, and developed a “draft Roadmap for future actions” in the field of green technology and alternative fuels in shipping in the Baltic Sea area, as found attached to this document

In the preparation of the draft Roadmap the discussions focused on two main themes:

1. technology development and alternative fuels to reduce air emissions from ships, including pilot project cooperation, infrastructure issues, need for rulemaking and guidance,
2. financial issues to promote pilot projects, acquisition of ships and retrofitting, as well as R & D in this field, with a focus on different financial instruments and mechanisms that could be used.

Priority actions were identified as well as lead partners and timelines for actions.

The Roadmap is a living document, which serves as a tool for promoting concrete joint actions and pilot projects in the Baltic Sea shipping. The Roadmap will, in the future, cover also other emissions from shipping and e.g. ballast water management related issues.

The revised “draft Roadmap for future actions” will be subject to further discussions during spring 2014 at national level and in the relevant Baltic Sea Organizations, with the aim to bring it to the Turku Baltic Sea Days from 1 to 5 June 2014 to be further discussed. During this week the CBSS Summit at Prime Minister’s level will be hosted by the Finnish CBSS Presidency and the BDF Summit and the 5th Annual Forum of the EU Strategy for the Baltic Sea Region will take place.

Partners: [actors' logos to be filled in]



BSPC | Baltic Sea Parliamentary Conference



SPC|Finland



COLLABORATION METHOD  
ZERO VISION TOOL

**Sustainable Baltic Sea Shipping**

**Draft Roadmap for future actions 2014 – 2016 and 2017 – 2025**

**Green Technology and Alternative Fuels**

This revised version is prepared on the basis of the discussions at the Green Technology and Alternative Fuels Conference on board M/S Viking Grace on 16<sup>th</sup> January 2014.

## Baltic Sea Shipping - Platform for Green Technology and Alternative Fuels

<b>1. Creating a joint Baltic Sea Platform for Green Technology and Alternative fuels in shipping</b>	Initiate discussions among all relevant actors at national level in the Baltic Sea Countries and within relevant Baltic Sea Organizations how joint cooperation could promote development and how this could be done	Spring 2014  St Petersburg, Baltic Sea Day, 20-21 March 2014  St. Petersburg Initiative (SPI) April 2014, Moscow (tentative)  Turku Baltic Sea Days, June 2014 (CBSS Summit, BDF Summit, EUSBSR Annual Forum etc.)	All actors, engaging especially the industry in the process from the beginning  Working methods - national forum for e.g. public & private discussions (governmental, industry, other NGOs) - pan-Baltic organizations - a Baltic Sea “core group” to take the creation of a Platform forward (leadership, secretariat and participation – to be discussed)
	Preparation of a draft Roadmap for future actions	Viking Grace 16.1.2014	Participants of the event
	Discussions and stocktaking	Turku Baltic Sea Days, 1.-5.6.2014 (CBSS, BDF etc.)	CBSS, HELCOM, BDF etc. industry, national administrations, research communities
	Discussion and stocktaking	HELCOM Maritime, November 2014	HELCOM
	Creation of a Baltic Sea network of relevant actors, using existing networks and project organizations	Spring 2014	All stakeholders, particularly the industry Leadership and Secretariat: (to be discussed)

	A joint information sharing portal in active use, a new portal or revitalizing an existing portal.	Presentation of the progress made at Turku Baltic Sea Days, June 2014 (CBSS, BDF etc.)	Industry, ZVT, BDF, CBSS etc. Leadership and Secretariat: (to be discussed)
<b>PART 1 - Technology and alternative fuels</b>			
<b>A. Alternative fuels and deployment of necessary infrastructure in the Baltic Sea area</b>			
<b>2. Use of alternative fuels – general aspects</b>	<p>a) Carrying out a pan-Baltic review of</p> <ul style="list-style-type: none"> <li>- ship-owners' plans concerning use of fuel in the future, short term/long term</li> <li>- plans for providing LNG bunkering possibilities in ports in the BSR (fixed terminals, trucks, barges etc.) <ul style="list-style-type: none"> <li>– assessment on how to meet the supply and demand</li> <li>– defining needed volumes for alternative fuels, or the economies of scale, in the Baltic Sea region</li> <li>– current “minor use” of biofuels</li> <li>– current plans of fleet renewal vs retrofits</li> </ul> </li> </ul> <p>The review should diversify perspectives including awareness on available solutions.</p> <p>b) Carrying out a detailed study on the possibility to establish a Norwegian type NOX-fund for the Baltic Sea area.</p>	2014 – 2015	<p>Industry, BPO/ports, research communities, administrations;</p> <p>A possible EUSBSR flagship project?</p> <p>Administrations, industry; A possible EUBSR flag ship project?</p>
<b>3. LNG</b>	<p>a) Promotion of the preparation of National Action Plans for deployment of alternative fuels infrastructure (LNG)</p> <ul style="list-style-type: none"> <li>- with focus on the needs of shipping lines operating in the Baltic Sea area and</li> <li>- building e.g. upon the recommendations in the North European LNG infrastructure Study 2012 and the EU work</li> </ul>	<p>Stocktaking</p> <ul style="list-style-type: none"> <li>- SPI April 2014</li> <li>- Turku Baltic Sea Days, June 2014</li> </ul> <p>HELCOM Maritime, November 2014</p>	<p>Bunker fuel suppliers, ship-owners, ports, administrations, land based users: industry, heavy goods vehicles, households</p>

	<p>on deployment of alternative fuels infrastructure for transport</p> <ul style="list-style-type: none"> <li>- taking into account the differences among the BS states and needs for transborder collaboration</li> <li>- taking into account synergies with land based use (industry, households)</li> </ul>		
	b) Elaborate a predictable price development; specification and price indications in place	2014 -	Bunker fuel suppliers, financing sector
	c) Harmonization of land-based and sea-based regulative and permission application process for LNG bunkering (“one stop shop”)	2014 – 2016	Administrations, ports, industry; EU’s Sustainable Shipping Forum (EFFS), St. Petersburg Initiative (SPI)
	d) Development of safe and efficient technologies for LNG bunkering and LNG fuelled vessels in ports	2014 – 2016	Industry, ports, pan-Baltic cooperation among administrations, BPO
<b>4. Methanol</b>	<p>Assessment of the need for a broader-based supply and infrastructure for methanol as transport fuel</p> <p>Methanol has certain benefits:</p> <ul style="list-style-type: none"> <li>– convenient handling and storage</li> <li>– reasonable conversion costs</li> </ul> <p>Both LNG and Methanol need to be more compatible compared to MGO for mainstreaming</p>	2014 – 2016	Industry; A possible EUSBSR flagship project?
<b>5. Biofuels</b>	<p>Assessment of the possibilities and challenges for development, production and use of biofuels in shipping (including wood, algae etc.)</p> <p>Carry out small local scale pilot projects on minor use of biofuel.</p>		Industry, research community (e.g. Aalto University/Finland)
<b>6. Other propulsion power (wind, solar)</b>	a) Pilot projects on wind, including Flettner rotors and fixed wings, as auxiliary power		Industry & Research community

etc.)	b) Pilot projects with battery-powered ferry in the Baltic Sea		A possible EUSBSR flagship project?
<b>B. Technology and best practices for reducing air emissions, e.g. abatement technology</b>			
<b>7. Scrubbers</b>	a) Overview/basis for selection of scrubber types - wet/dry, closed/open, hybrid and - vessel type, size, age - shipyard capacity for installations  Information sharing and best practices	2014	Industry, research
	b) Waste Management of Scrubbers	2014 HELCOM Maritime	Industry, ports, administrations
<b>8. Abatement technology for reducing NOx emissions</b>		Timing is related to the NOx Tier III effective date to be discussed at the meeting of the IMO MEPC66 31.3 – 4.4.2014	Industry, administrations
<b>9. Shore side electricity</b>	Joint measures to promote shore side electricity	HELCOM Maritime 2014 IMO EU/ESSF and SPI	Administrations, ports, shipping industry
<b>10. Best practices</b>	Deployment of good practices developed by some shipping companies (e.g. Maersk), which could be beneficial also for other companies.	2014	Shipping industry, research community A possible EUSBSR flag ship project?
<b>C. Regulation, incentives and compliance: bunkering guidelines, use of low-flashpoint fuel, manning requirements (ship and land-based)</b>			



<b>11. Bunkering guidance for LNG</b>	Preparation of harmonized bunkering guidelines in cooperation at regional and international level (HELCOM, EU, IMO) <ul style="list-style-type: none"> <li>- bunkering while performing cargo operations and embarkation/disembarkation of passengers should be allowed</li> <li>- need to bridge the set of rules for land based and ship specific operations</li> </ul>		Administrations (close collaboration/communications among administrations regulating land based and shipping), ports, ship-owners, bunker fuel suppliers
<b>12. IMO rules</b>	a) IMO's IGF code for ships using gas or other low-flashpoint fuel needs to be finalized in 2014 b) Manning requirements regarding crew competences with respect to alternative fuels (IMO) c) Improving the IMO Resolution MEPC.184(59), 2009 Guidelines for Exhaust Gas Cleaning Systems	IMO MSC93, 12 – 16.5.2014 IMO MSC93 12 – 16.5.2014 IMO MEPC66, 31.3. – 4.4.2014	Administrations, industry Administrations, industry Administrations, industry
<b>13. Incentives</b>	a) Rewarding green technology solutions (e.g. port fees, fairway dues, including applying economic incentives according to e.g. the HELCOM recommendation on Economic incentives) b) Consider means to reduce negative incentives of environmental measures e.g. tonnage-bound fairway fees and heavy scrubbers c) Increase knowledge and awareness of existing incentive schemes d) Streamline “green labeling” of shipping to enable a common standard at least in the Baltic Sea Region	2014 -	Administrations, ports, industry
<b>14. Compliance</b>	a) Cooperation to ensure and enhance enforcement of the SOx requirements (including discussion on the issue of malfunction of scrubbers)	HELCOM Maritime - correspondence group (starting 2014)	HELCOM Maritime correspondence group; industry, administrations;

		- meeting Nov. 2014	EU/ESSF and (poss.) SPI
	b) MGO/MDO compliance scrubbers performance, remote monitoring on compliance of sulphur regulations on fuels etc.	From 1.1.2015 onwards	Administrations, including Port State Control; EU/ESSF, SPI
<b>Part 2 - Financing investments in clean shipping and alternative fuels</b>			
<b>A. Alternative fuels</b>			
<b>15. LNG</b>	<p>a) Call for the need to have an appropriate number of LNG refueling points at Baltic Sea and European maritime core ports by 2020, at the latest.</p> <p>b) Co-funding during the start-up stage</p> <p>c) Joint work between the Baltic Sea countries for application of EU funding (for example CEF)</p> <p>d) Identify and network the user groups for LNG outside the shipping sector (industry, household etc.)</p>	February 2014 start-up meeting, CEF-call in September 2014	<p>a) and b) Industry, ports, fuel suppliers, administration, EU, NDPTL</p> <p>c) Initiative by Sweden to call for a start-up meeting with more countries</p> <p>d) Industry</p>
<b>16. Methanol</b>			
<b>B. Financing green technology in shipping, including pilot projects and new buildings</b>			
<b>17. Promoting investments in green technology and new buildings</b>	<p>a) Identifying industry needs</p> <p>b) Information sharing about</p> <ul style="list-style-type: none"> <li>- technology development</li> <li>- best practices</li> <li>- financing possibilities and solutions</li> </ul> <p>c) Initiate a dialogue between Baltic Sea countries on</p>		<p>Industry, financial institutions, incl. commercial banks, at national and regional level (NIB,EIB, EBRD, NDPTL, SPI, EUSBSR, EU/ESSF)</p> <p>see above point 15 c</p>

	mobilizing financing with the use of e.g. the EU Baltic Sea Region Programme 2014 – 2020 and the EU Structural funds		
<b>18. Financing pilot projects/references</b>	Development of sources for financing pilot projects; start-up, turning innovation into operational solutions		Industry (ship owners/operators, manufacturers, cargo-owners), financial institutions
<b>19. Identifying Pilot projects for the BSR</b> (these could also be used as “flagship projects in the EUSBSR)	1) 2) 3)	Meetings Stocktaking	Industry, all stakeholders EU Funding including EUSBSR; KfW
<b>20. Financing new buildings</b>	a) Development of new risk sharing mechanisms (including e.g. guarantee mechanisms)		Commercial banks, financial institutions at national level and NIB,EIB, EBRD etc.
	b) Development of “Alliances”		Ship-owners, charters, cargo-owners, ship-yards, financial institutions
<b>21. The EU State aid guidelines</b>	Discussions on how the EU state aid guidelines could promote European innovation and growth		Administrations, industry, EU/ESSF
<b>Part 3 - Energy efficiency in the logistic chain</b>			
<b>22. Ship</b>	Development of ship design, machinery, propulsion, operation and logistics, with more focus on reducing CO2 emissions from shipping	Continuous	Ship-owners, manufacturers, ship design, ports
<b>23. “Ship and shore”</b>	a) Development of the cargo handling process in the whole logistic chain b) Initiate discussions on the possibilities of slow steaming		Ship-owners, ports, cargo-owners, shippers etc.

**Part 4 - Research and development, innovation**

<b>24. Research</b>	<ul style="list-style-type: none"> <li>a) Assess the needs of the industry</li> <li>b) Development of supporting research programs</li> <li>c) Strengthen the collaboration among the research community and the industry</li> </ul>		R&D industry, stakeholders BONUS, EU Funding, EBRD, NDPTL, SPI, CBSS, national innovation funding agencies
<b>25. Turning innovation into operational solutions</b>	<ul style="list-style-type: none"> <li>a) Assess new markets for technology and services</li> <li>b) Close cooperation with end-users</li> </ul>		(same as above)

**Part 5 - Informing and involving the general public**

<b>26. Develop a Communication strategy and outreach</b>	<p>Development of a Communications strategy and a “common image” for the Platform</p> <p>Informing the public about the green shipping sector and efforts done in the Baltic Sea region</p>	Turku Baltic Sea days, June 2014	Industry, stakeholders, CBSS, HELCOM, BDF, ZVT etc.
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