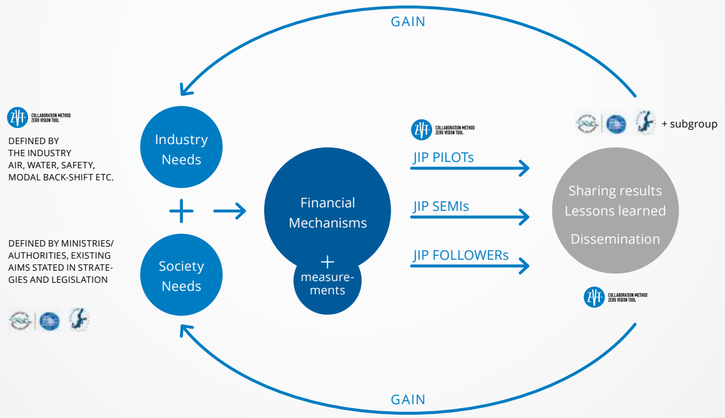
BENEFITS TO THE SEA, SOCIETY AND INDUSTRY



"Economic growth with respect to four basic pillars that are environment, society, technology and industry, can be achieved by increased maritime traffic in the Baltic and North Sea region. In order to maintain growth, maritime activities must still be profitable for the industry, while also reducing negative environmental impact, number of accidents and energy consumption."

To turn this into reality, the Zero Vision Tool (ZVT) was created and continues to develop. Ever more stakeholders use the method, reporting their needs and using it to bring forward new solutions.

Read more at www.zerovisiontool.com

Co-financed by:

SWEDISH MARITIME ADMINISTRATION

Co-financed by the European Union Trans-European Transport Network (TEN-T)

COLLABORATION METHOD ZERO VISION TOOL

www.zerovisiontool.com | info@zerovisiontool.com

Steering committee:

Ports of Sweden,
Swedish Shipowners' Association
and SSPA

ZERO VISION TOOL WHITE PAPER

Executive Summary 2016

INTRODUCTION

This booklet provides an update to the Executive Summary of the Zero Vision Tool White Paper, first published in 2015. The paper provided the overview of the background of the creation and development of the Zero Vision Tool (ZVT), a collaboration platform and method based on the vision of zero-environmental and climate-impact in maritime transport. The White Paper 2015 explained why and how the method was created, as well as provided suggestions for further development of the tool itself, as well as the vision for partnerships that it had enabled.

Zero Vision Tool is a pioneering effort and as such it enabled rapid changes in how partnerships for sustainable shipping have been conceived and operated, as well as quickly delivering effective results. These results and developments that took place mainly in 2015-2016 provided for what we can call a paradigm shift in collaboration for zero-vision maritime transport. A need to update previous documents with reflecting the latest results and way forward, is urgent.

ZVT White Paper Executive Summary 2016 retains elements of the preceding document, namely that it provides the definition of ZVT collaboration and method (page 4), as well as explains the background of its development (page 5). Furthermore, it also explains the very process of ZVT (page 6-7). The updated summary, however, lists new results and new findings within the platform, among which are included more specific calculations on the benefits for the society as the result of introducing sustainable shipping solutions.

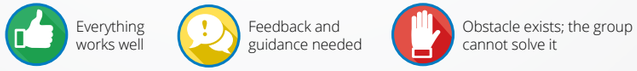
The full ZVT White Paper can be found at www.zerovisiontool.com. Besides the aforementioned, the White Paper elaborates on how various political strategies have inspired the development of ZVT. The updated version of both, this summary and the White Paper itself, introduces further developments in cross-sectorial dialogue that ZVT as a platform facilitates between the industry stakeholders and the public sector.

Zero Vision is: A vision aiming to achieve increasing economic growth, to increase welfare as well as transport by sea and reduce environment and climate impact, accidents and energy consumption.

Zero Vision Tool is: A collaboration method and project platform for a safer, more environmental, climate and energy efficient while still profitable transport by sea.

Within the platform representatives of industry, academy, agencies and administrations meet to share experiences and to find common, workable and sustainable solutions. As of today, over 150 different organisations from various countries use the ZVT method, working within Joint Industry Projects (JIP), University Projects (JUP) and/or Authority Projects (JAP). A reference group, ZVTREF, compricing authorities, agencies and industry representatives, meets quarterly for the review of status and actions.

R/G/G traffic light is: A principle used in the ZVT platform in order to identify challenges that are keeping stakeholders from progressing to meet planned environmental and/or safety goals. It also helps to fast-track the overall development of zero-impact solutions. In practice, it enables the information flow between the platform projects (Joint Industry, Joint University, Joint Authority) and the ZVTREF.



The ZVT platform is **not** a tool for lobbying in the interest of one stakeholder, **but** one providing an opportunity for achieving long-term sustainable solutions where the environment, climate, safety issues and technology as well as human and financial factors are equally important.

KEEPING UP WITH REALITY: A NEEDS BASED METHOD

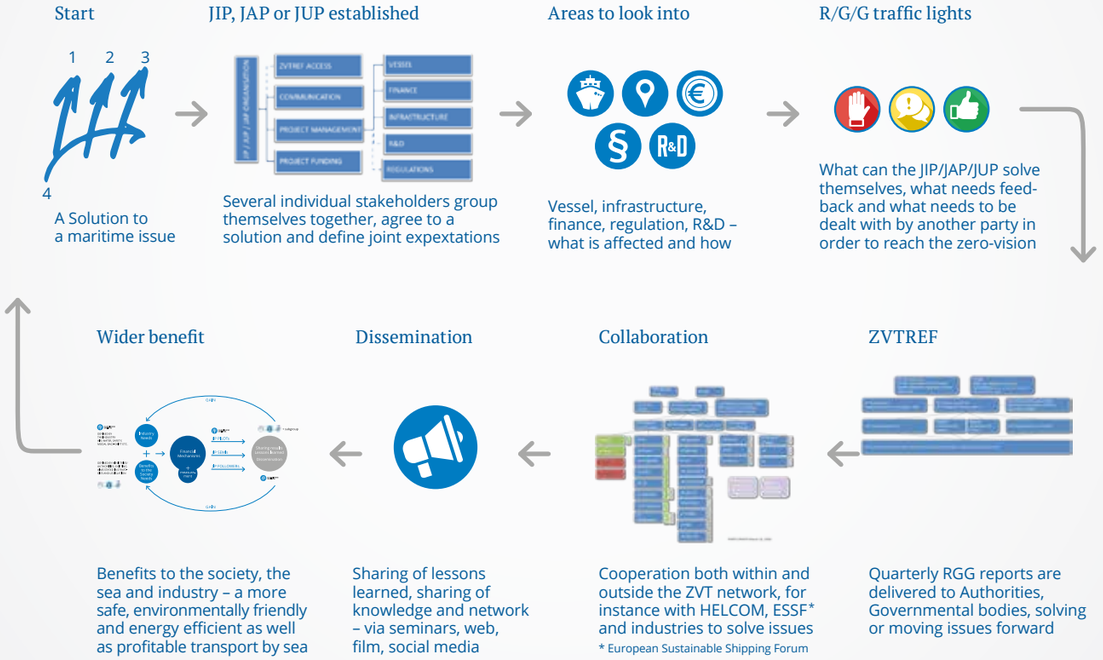
The main incentive to develop ZVT were the concerns of the maritime industry related to the developments of international regulations governing emissions of maritime shipping, in particular in 2008 revised MARPOL Annex VI (incorporated into the EU legislation in 2012). First, the question was how to successfully meet the emission targets, and second - how to nevertheless ensure profitability of the sector.

The concerns were grounded in evidence: commissioned studies by then have proved that if the new sulphur from marine fuel cap 0.10 % from 1 January 2015 will be applied in the legislative, market, technology, infrastructure and financial conditions that were prevalent just a few years ago, the changes would necessarily cause a modal back-shift and consequently increase the costs of freight. This in turn would move freight transport from sea to land. It became clear that a fundamental restructuring of maritime industry was needed, which would cross-sectorially apply to all affected areas in the chain: technology, infrastructure development, regulations and financial support principles - on both, national and international level.

The ZVT platform and method became a response to this need, developed by industry stakeholders, agencies and authorities. Various actors have been and still are engaged in developing and using the platform, with eventually involving over 150 stakeholder organisations. New solutions are being developed in a collaborative way, and without these it would not be possible to achieve environmental and climate impact reduction whilst ensuring continuous growth of the sector and avoiding the modal back-shift.

A unique result and success of this response was the shipping industry pioneering efforts, tested out in various constellations, ending up in ZVT to mobilise the whole variety of stakeholders that shape, develop, operate and regulate maritime sector. To be able to do so, the prerequisite was ensuring a cross-sectorial outreach, management and communication approach, empowered by the industry's own understanding that envisioned environmental goals with maintained level of industry's competitiveness cannot be achieved by singular actors without cooperation.

The first year has passed after SECA entered into force in the EU on the 1st January 2015. With the finalisation of several ZVT pilot projects solutions have been found for several issues within areas of technology, legislation and infrastructure. The platform and the method have also helped to identify further issues to be addressed - first and foremost, the need for a financial risk sharing instrument, as well as enhancing calculations of the green shipping benefit for the society. ZVT method, as enabling stakeholder engagement and bringing industry, regulation/policy makers and academia together, already proved to be a coherent and reality-grounded tool to ensure effective response to these issues.



THE PROCESS

With the overview to the left we have tried to simplify the ZVT process, even though there almost never exists a simple straight-forward way when working with a process of change. However, ZVT starting point is a constant: it always starts with searching for a safe, environmental, climate and energy efficient solution for transport at sea. It can be a solution to a new technology use, bunker handling, port reception issue, risk handling and sharing, environmental measurement or new regulations, just to mention a few.

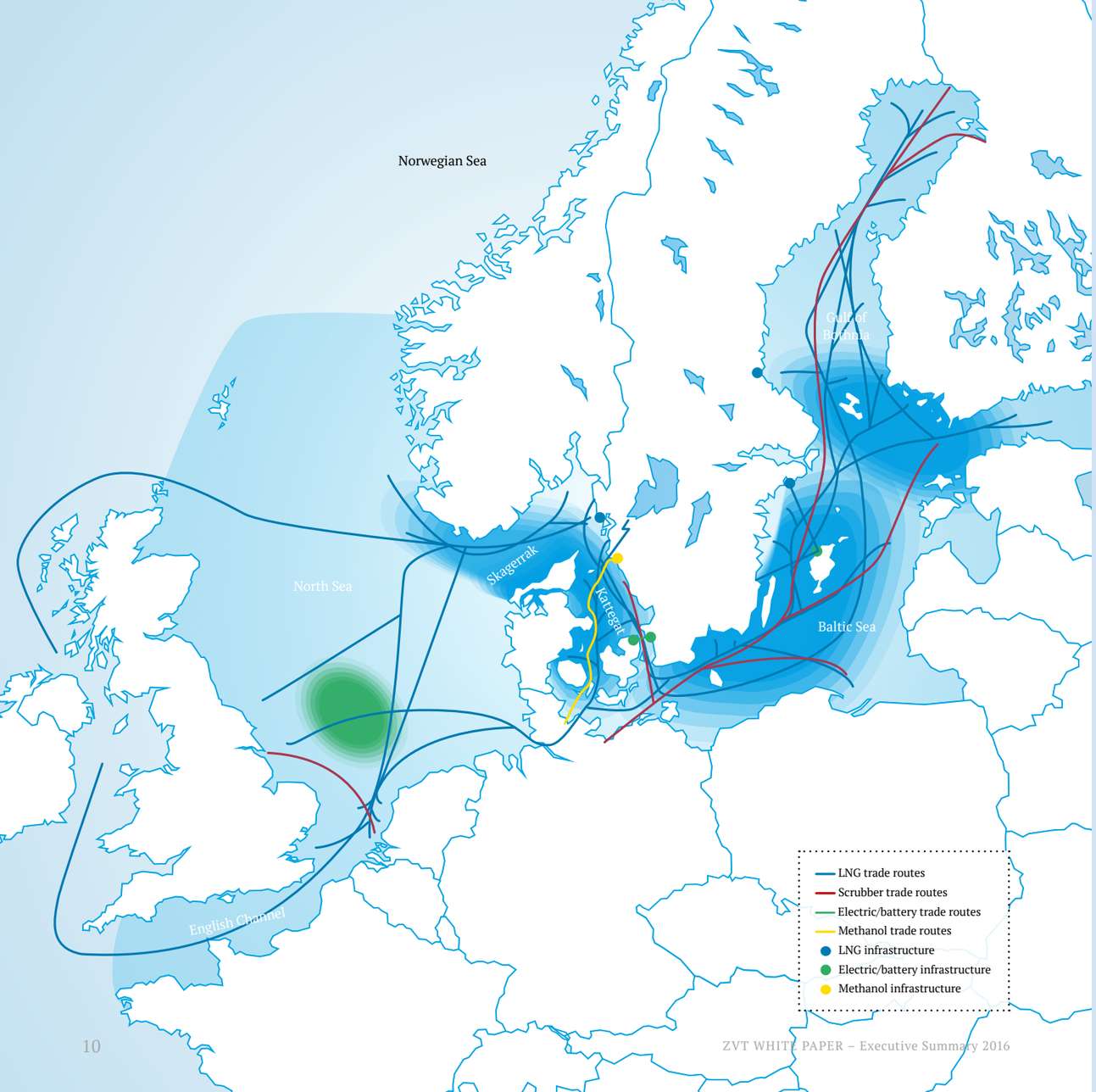
To use the ZVT method you have to establish a working group, a Joint Industry Project (JIP), comprising different types of industry partners (like a shipowner, port, cargo owner, supplier, etc). This is so in order for the group to be able to search for the solution from five identified perspectives, namely Vessel, Infrastructure, Finance, Regulation, R&D. The same requirement applies for Joint University Projects (JUP) and Joint Authority Projects (JAP).

Since we are working with change, we all need help/support once in a while. In order to get the support needed, we need to explain why, as well as point to the situations that are at hand. Having relevant information and understanding of the issue, the respondent thus would be able to take that concrete issue further and/or offer a solution. Four times per year all the JIP/JUP/JAP report progress and status to ZVT Reference Group, ZVTREF, to get the exchange of solution knowledge between authority and industry/academia.

The exchange of knowledge and information dissemination, are also an important part of the process - both between the projects and with other stakeholders. At the website *www.zerovisiontool.com* you can find more information about ZVT projects, some of the events we are holding/participating in as well as radio interviews on topics important to the platform stakeholders.

So, we are working with change, a change towards a safer, more environmentally and energy efficient transport at sea. You might say that's fine. We, however, would like to go further than that and to show what the benefits to the industry, society and, of course, to the sea actually are. Representatives from ZVT are therefore also participating within the Roadmap for Green Technology and Alternative Fuels in Shipping - a sub-group under the Helsinki Commission (HELCOM) Working Group Maritime, as well as the concept and cooperation framework Motorways of the Sea (launched and facilitated by the European Commission), in order to take further issues raised within ZVT. In early 2016, ZVT has also submitted an official invitation to the Council of the Baltic Sea States Expert Group on Maritime Policy (EGMP) to become an observer at ZVT Reference Group. A new JUP is also working on calculating the benefits of what the safety, environmental and energy efficiency improvements that all the JIPs implement, are worth.

Nothing would be possible without the hard work and investments of all the participants, nor without the EU Motorways of the Sea co-funding of the industry projects and Swedish Maritime Administration's crucial support of the ZVT administration and communication.



REALITY CHECK:

METHOD RESULTS

- Provides foundation for collaboration and knowledge sharing.
- Commitment of stakeholders – both, private and public – has been secured, to jointly work for the zero-vision by 2050.
- Methodology, routines and administrative infrastructure is provided to the stakeholders, based on their needs.
- A structural approach based on concrete basic pillars was developed, that enables delivery of zero-vision solutions. *The pillars are: vessel (technology and calculation), infrastructure (responsibilities and increased opportunities), financing (short and long term), research and development (environmental efficiency and safety in the future), as well as regulations' development (for new areas or to reach consensus between transportation modes).*
- Provided basis for formulating the concept and proposal for a joint toolbox for creating benefits to the society and the Baltic Sea.
- Provides basis for measuring effectiveness of its own functioning and benefit to the society and the Baltic and North Sea, as well as the modal shift/back-shift in terms of measuring direct and indirect costs as well as social aspect.
- Providing means to make measurements for comparing and calculating the benefits both before and after a new solution from the industry is installed/delivered. The measurements include areas such as air emissions, water discharge, modal shift/reverse shift, safety/risk, noise and job opportunities.
- Provides a way of sharing knowledge within Motorways of the Sea on behalf of the European Union.

REALITY CHECK ZVT

JIP 6–7 METHANOL
To prove and showcase that methanol is an innovative, safe and sustainable fuel by converting an existing ro-pax ferry to run on methanol.

JIP FLEXI
Designing and building of a bunker tanker that will support the distribution of LNG for gas-fuelled ships.

JIP LNG4SOLUTION
Introduce a new two-stroke gas engine that operates at low pressure and ordering of 2+2 new tanker vessels.

JIP LNG CONV
Converting of an existing vessel to LNG and the closely following different stages from technology implementation at the yard.

JIP LNG SEA RIVER
Design and build a small bulk/dry cargo vessel with LNG as fuel without losing cargo carrying capacity.

JIP SCANBUNK
Developed a hub for LNG Bunkering in Scandinavian with a storage capacity of 30.000 m^3.

JIP SIC
Investigating options and functions for using scrubbers as a SECA compliant solution for existing vessels.

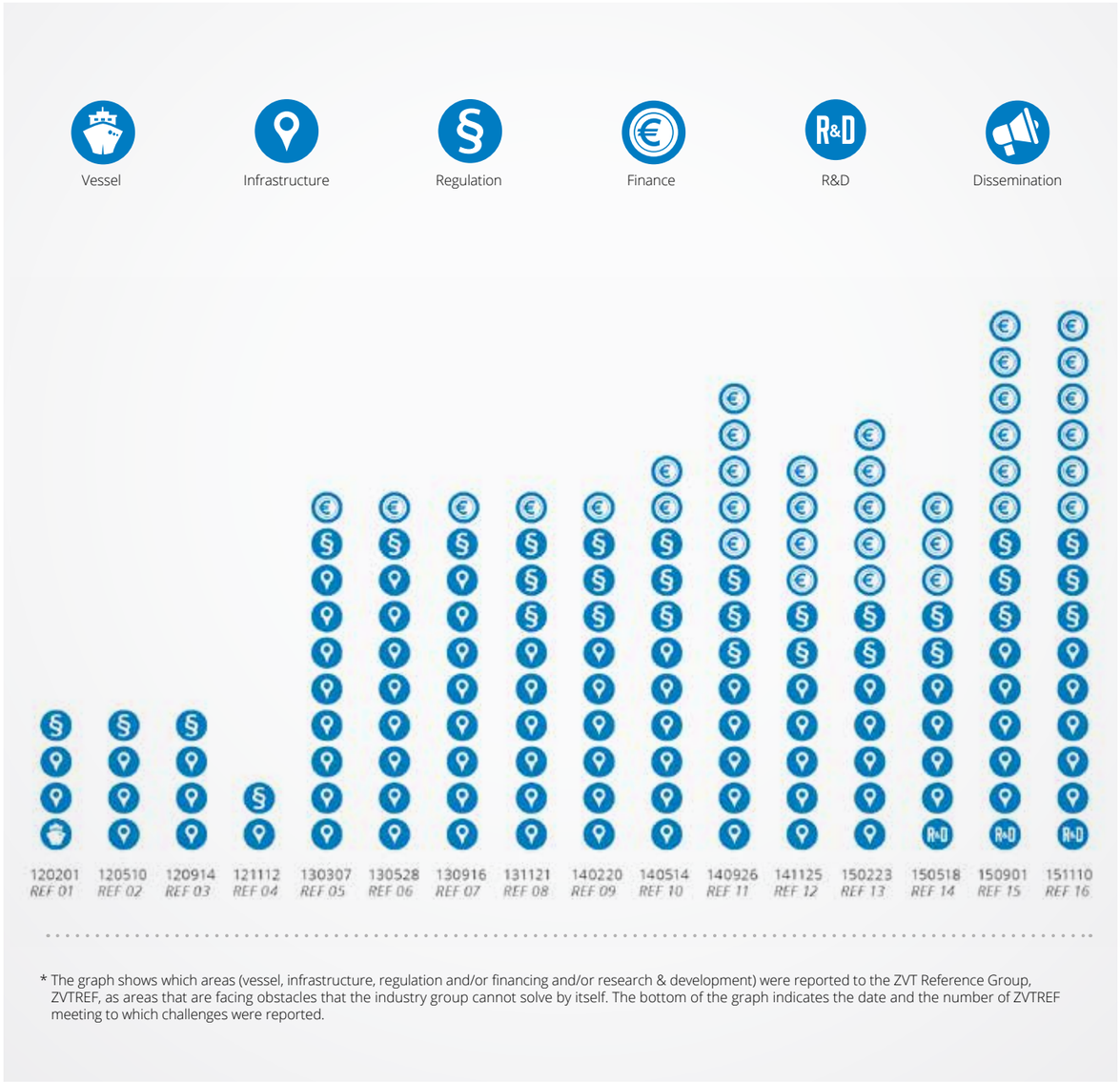
JIP MAKE A DIFFERENCE
Identify, minimise, and if possible eliminate, some of the thresholds when it comes to building and operating a dual fuel vessel, with LNG in focus and integrate with port.

REALITY CHECK:

JIP RESULTS

- The first *ferry in the world* to be run on Methanol: Methanol is being tested as an alternative fuel that contains no sulphur and thus enables full compliance with the Sulphur Directive.
- The first *LNG bunker vessel in the world* of this type: The first vessel with fast, efficient and safe bunkering system for LNG bunkering on- and offshore have been built.
- The first *hub for LNG bunkering* in Scandinavia have been developed.
- The first *vessel converted* into an LNG fuelled vessel started operating in 2015.
- The first *dry bulk cargo vessel in the world* to be run by LNG: A cement carrier with LNG powered pro-pulsion and without losing cargo carrying capacity have been built.
- The first *installed light weight scrubber solution in the world*: Innovative solution for equipping a vessel with the scrubber for cleaning of sulphur oxide exhaust fumes was developed.
- Major regulatory, cross-national and cross-sectorial coordination and harmonisation challenges for LNG shipping were identified.

REALITY CHECK ZVT



* The graph shows which areas (vessel, infrastructure, regulation and/or financing and/or research & development) were reported to the ZVT Reference Group, ZVTREF, as areas that are facing obstacles that the industry group cannot solve by itself. The bottom of the graph indicates the date and the number of ZVTREF meeting to which challenges were reported.

REALITY CHECK:

CONTINUING INTO THE FUTURE

The engagement and support to the ZVT method and platform by its stakeholders and partners have enabled an effective consolidation of the results and proposals for further development of zero-environmental and climate-impact shipping solutions throughout 2015. Deliverables of its pilots were presented at the European Commission's TEN-T "Motorways of the Sea" conference "Benefits to the society, maritime climate investments and job opportunities" in Gothenburg on 9-10 November 2015.

Ensuring of continuation of the dialogue across sectors means also building on previously established relationships. An important development that later enabled this dialogue to happen, was the 13th HELCOM Maritime Working Group meeting in 26-28 November 2013 where ZVT method was first presented in this context. This was followed by ZVT participation at a conference on "Sustainable Baltic Sea Shipping, Green technology and alternative fuels with focus on emissions," organised by the Finnish Presidency of the Council of the Baltic Sea States (CBSS) and HELCOM, in cooperation with the Baltic Development Forum (BDF) and the Northern Dimension Partnership on Transport and Logistics (NDPTL), in January 2014. Subsequently, ZVT was welcomed by the HELCOM Maritime sub-group "Green Technology and Alternative Fuels for Shipping" which was established as a result of the aforementioned conference.

Cooperation and partnerships are further developed and enhanced within ZVT activities in 2016, and it remains an important element in ensuring the effectiveness of ZVT operation. To facilitate the dialogue and information exchange across stakeholders from public and private sectors, ZVT invited the Council of the Baltic Sea States (CBSS) Expert Group on Maritime Policy to become an observer at ZVT Reference Group. Furthermore, ZVT greatly appreciated an invitation to participate and share experience at a stakeholders' workshop "Partnerships for Green Shipping", organised by the CBSS Secretariat at the European Maritime Day in Turku, 18-19 May 2016.

New developments are taking place and the principle suggested for the way forward on how the society, the sea, and the industry can benefit from working together remains the same: the idea is that the industry should not just react but work pro-actively, hand in hand with the strategy makers both in regards to environment, climate, safety, and health. ZVT offers a method to do so.

The results and findings within ZVT platform due to the new method of cooperation have opened for a paradigm shift in efforts to ensure zero-environment and climate-impact maritime shipping. The next steps for the transition to a new normal have been identified. To satisfy the society need, including that of gaining more employment opportunities, the transition to a shipping sector with no negative impact on air nor water has to speed up. To respond to the industry need, green investments have to be accelerated, especially by making them bankable. Grants for Pilots need to be continued. The suggested solution to ensure that these needs are satisfied is to complement the grant possibilities with a risk sharing fund, by linking resource availability from a financial instrument to actual external benefits to the climate, environment, and the society.

ZVT IDEATION AND DEVELOPMENT: From needs to action

DEVELOPMENT

2007-2008

Baltic Sea Action Plan (BSAP) →
Economic incentives are needed to motivate shipping sector to reduce health and environmental risks

MARPOL Annex VI Reg. 14 →
Stricter rules for Sulphur emissions from ships are set to be applied from 1 January 2015

2009

European Maritime Policy (EMP) until 2018 →
long-term zero-waste, - emission objective formulated

EU Strategy for the Baltic Sea Region (EUSBSR) →
Aims to reduce maritime transport impact on environment

2010

1) Increase economic growth
2) Increase welfare
3) Increase transport by sea
4) Reduce negative environmental impact, accidents and energy consumption

2011

Baltic Sea Position →
Customers and more stakeholders in co-operation provided a proof that integrated stakeholder approach is crucial

ZERO VISION TOOL →
Idea for a new method first formulated

2012

The first Joint Industry Groups start actively working: Focus is set on Vessel, Infrastructure, Regulations, Finance, Research & Development and, not least, Dissemination/sharing knowledge

2013

ZVT presented to HELCOM Maritime →
Method well received by the Member States

2014

First draft for Baltic and North Sea Sustainable Shipping Toolbox: the society, the sea and the industry cross-benefit through working together →
Industry to work pro-actively, hand-in-hand with the strategy makers

2015

By January 2015 →
ZVT has 21 industry and university projects

Is building and sharing knowledge within HELCOM Maritime subgroup

A financial instrument Pilot is under development

2016

ZVT continues to engage into a cross-sectorial collaboration for sustainable and prosperous shipping – Council of the Baltic Sea States Expert Group on Maritime Policy is invited to be an observer at the ZVT Reference Group

Consolidating findings of ZVT projects to inform decision makers

Launching of new projects within the ZVT platform

REALITY CHECK

2009

Studies show →
MARPOL Annex VI would cause a modal back-shift

2010

Further impact assessments show →
MARPOL Annex VI decision with stricter regulations in the Northern Europe 2015, while the rest of Europe in 2020, would cause a modal back-shift

2011

Despite the Baltic Sea Position, new investments are not generated →
Need to engage customers in cooperation

ZVT process comes to its full potential →
Joint Industry Project and Joint University define challenges that can only be solved through the new method

2012

Röd-Gul-Grön (RGG, red-yellow-green, "traffic light") method →

Challenges are identified and tracked →

Ensuring that a project concern is being brought forward, and not a concern of a singular stakeholder

2013

European Sustainable Shipping Forum established →
Aim to handle maritime issues regarding new technology and new regulations

2014

Roadmap for Green Technology and Alternative Fuels in Shipping the Baltic Sea Area →
ZVT is nominated to represent the industry

European Sustainable Shipping Forum sub-groups (LNG, Scrubber, innovation and finance) →
ZVT projects are invited to share lessons learned – Pilots, first out in the North of Europe, we stand risk

HELCOM Maritime sub-group →
Basis in the Roadmap, the ZVT method is referred to in the decision text

2015

New regulations are in the pipeline →
Reality checks can easily be made on industry, university and authority level →

Reality checks include what is possible technology wise, infrastructure needs, financial possibilities etc

2016

Joint University Project (JUP) 0.8 delivers its calculations →
Green shipping benefits for the society can be calculated and should ensure bankability of green investments

RESULT/REACTION

2009

Swedish Shipowners' Association (SSA) →
Commits to the EMP objectives →
Becomes the first association in Europe to commit to the EU zero-vision

SSA and Ports of Sweden (PoS) →
Becomes to EUSBSR goals →
Become first shipping sector associations to commit to a macro-regional strategy in Europe

2010

Industry Group: 50 North European industry stakeholders gather under leadership of SSA, Finnish Shipowners' Association, Associations for Swedish, Finnish and Lithuanian. Enterprise for raising awareness on the SOx study results, ask for more time to implement and suggest a solution further.

Baltic Sea Position: First attempts to gather such stakeholders as ports and shipowners and launch a common way forward.
www.balticseaposition.eu

2011

The solution ZVT →
A platform for developing, testing and adapting regulations and targets as well as running business in respect to the environmental, societal and competitiveness needs
www.zerovisiontool.com

2012

Reference group (ZVTREF) is established →
Quarterly meetings are planned

JIP Make A Difference receives EU TEN-T co-funding →

To identify hindrances for land and sea when implementing LNG as marine fuel and to build and operate a dual fuel vessel

2013

Pilot LNG, Pilot Methanol and Pilot Scrubber receive co-funding via TEN-T Motorways of the Sea →

Start LNG infrastructure with terminal, newbuilding/retrofit LNG vessels and bunker vessel.
Retrofit Methanol vessel. Installation of unique lightweight scrubber solutions

2014

Motorways of the Sea Conference →
Arranged by ZVT on behalf of the European Commission →
All the JIPs/JUPs working according to ZVT are presented
www.zerovisiontool.com/GotMoS

Baltic SO_2lution receive co-funding via TEN-T Motorways of the Sea →

Newbuilding LNG vessels

2015

A second Motorways of the Sea Conference →
Arranged by ZVT on behalf of the European Commission →
www.zerovisiontool.com/event/GotMos-2015

Pilots and collaborations are actively working via ZVT →
Sharing knowledge and implementing a more safe, environmentally and energy efficient as well as profitable transport by sea

2016

Participation in bringing forward Green partnerships in the Baltic Sea Region – a workshop at European Maritime Day 2016, organised by the Council of the Baltic Sea States Secretariat

Over 150 different organisations from various countries use the ZVT method

Join in, we call for action together!

YEAR