34 YEARS BSPC
Baltic Sea Parliamentary Conference

Baltic Sea Parliamentary Conference

Working Group on Energy Security, Self-sustainability, Resilience and Connectivity (ESSRC)

Final Report

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The Baltic Sea Parliamentary Conference (BSPC) was established in 1991 as a forum for political dialogue between parliamentarians from the Baltic Sea Region. The BSPC aims to raise awareness and opinion on issues of current political interest and relevance for the Baltic Sea Region. It promotes and drives various initiatives and efforts to support the sustainable environmental, social and economic development of the Baltic Sea Region. It strives to enhance the visibility of the Baltic Sea Region and its issues in a broader European context. BSPC gathers parliamentarians from 10 national parliaments, 7 regional parliaments and 5 parliamentary organisations around the Baltic Sea. The BSPC thus constitutes a unique parliamentary bridge between the democratic EU- and non-EU countries of the Baltic Sea Region. BSPC external interfaces include parliamentary, governmental, subregional and other organisations in the Baltic Sea Region and the Northern Dimension area, among them CBSS, HELCOM, the Northern Dimension Partnership in Health and Social Well-Being (NDPHS), the Baltic Sea Labour Forum (BSLF) and the Baltic Sea States Subregional Cooperation (BSSSC).

The BSPC shall initiate and guide political activities in the region; support and strengthen democratic institutions in the participating states; improve dialogue between governments, parliaments and civil society; strengthen the common identity of the Baltic Sea Region by means of close cooperation between national and regional parliaments based on equality; and initiate and guide political activities in the Baltic Sea Region, endowing them with additional democratic legitimacy and parliamentary authority.

The political recommendations of the annual Parliamentary Conferences are expressed in a Conference Resolution adopted by consensus by the Conference. The adopted Resolution shall be submitted to the governments of the Baltic Sea Region, the CBSS and the EU and disseminated to other relevant national, regional and local stakeholders in the Baltic Sea Region and its neighbourhood.

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Introduction

Mr Andris Kulbergs

Ladies and gentlemen,

In 2023, the Baltic Sea Parliamentary Conference took a pivotal step towards reinforcing our region's energy security, self-sustainability, resilience, and connectivity. The establishment of the Working Group on ESSRC followed the BSPC's decision to suspend relations with the Russian Federation, which has opened the door to more transparent, democratic, and results-oriented dialogue among the parliaments of the democratic Baltic Sea states.

Between September 2023 and June 2025, the Working Group convened for six comprehensive and highly productive meetings:

- The **first meeting in Riga** laid the groundwork for the Group's deliberations and defined the key principles to guide its work. Discussions addressed energy, defence, digitalisation, and transport, particularly concerning energy diversification and regional interconnections.

- The **second meeting in Helsinki** focused on hybrid threats, resilience of critical infrastructure, and the strategic role of energy and maritime security in countering destabilising influences in the Baltic Sea region.

- The **third meeting in Greifswald** brought forward crucial insights into infrastructure protection, energy transition technologies, and cross-border cybersecurity challenges.

- The **fourth meeting in Bergen** included in-depth field visits to the Kollsnes gas processing plant and the Norwegian Navy. It addressed offshore resilience, the shadow fleet, and the need for multilateral enforcement mechanisms.

- The **fifth meeting in Stockholm** centred on maritime and land transport innovations, the protection of subsea infrastructure, and EU/NATO coordination frameworks. It also deepened cooperation with the CBSS and Conference of Peripheral and Maritime Regions (CPMR) Baltic Sea Commission.

- The **final meeting in Tallinn** concluded the Working Group's work, highlighting digital sovereignty, cyber defence, and maritime surveillance as the next strategic frontiers. Estonia's experience with decentralised digital governance and NATO's cyber resilience platforms served as key references.

Throughout these sessions, the Working Group engaged more than 40 external experts, conducted field visits, exchanged best practices, and discussed targeted Calls for Action to address the interlinked security, connectivity, and sustainability challenges. These discussions resulted in comprehensive policy recommendations to the 33rd and 34th BSPC Resolutions.

I want to extend my deepest gratitude to all those who have made a decisive contribution to the great success of this working group with their utmost commitment, particularly the members of the Working Group, our expert contributors and the secretariat, and to those in the governments and other public institutions who have answered our questions very thoroughly in detail and have taken a stand on the implementation of our recommendations and calls for action. Your engagement – whether through providing national insights, sharing cutting-edge research, or discussing regional strategies – has made this process a genuinely collaborative and forward-looking endeavour. Your commitment to strengthening the region's resilience, from underwater cables to hydrogen corridors, from joint surveillance to climate-neutral energy, has been invaluable.

The BSPC has proven its role as an essential forum for regional parliamentary dialogue and joint agenda-setting. As we move forward, we invite all member parliaments to build on this Working Group's conclusions, embed them in national strategies, and deepen interparliamentary cooperation to benefit the entire Baltic Sea region.

Andris Kulbergs
Member of the Baltic Assembly and the Parliament of Latvia
Chair of the Working Group

Executive Summary

The BSPC Working Group on Energy Security, Self-sustainability, Resilience and Connectivity (ESSRC), established in 2023, convened six times between October 2023 and May 2025. Its aim was to identify concrete policy recommendations and foster deeper cooperation among the democratic states and parliaments of the Baltic Sea region in addressing critical strategic challenges.

The Working Group met in:

- **Riga** (**15–16 October 2023**) to define priorities and guiding principles,
- **Helsinki** (**17–18 March 2024**) to focus on geopolitics, hybrid threats, and energy security,
- **Greifswald** (**26–28 May 2024**) to explore infrastructure protection and maritime resilience,
- **Bergen** (**26–28 November 2024**) to address offshore energy, shadow fleets, and military-civil cooperation,
- **Stockholm** (**16–18 March 2025**) to deepen discussions on cyber and subsea infrastructure security, transport resilience, and regional coordination,
- **and Tallinn** (**18–20 May 2025**) to conclude its work with a focus on cyber resilience, digital sovereignty, and multilateral governance.

Throughout its sessions, the Working Group welcomed more than 40 expert presentations, conducted several field visits, and prepared joint recommendations. These are reflected in the BSPC Resolutions of 2024 and 2025 and provide a strategic framework for regional parliamentary cooperation.

Key cross-cutting topics included:

- energy transition and regional interconnectivity,
- critical infrastructure protection and preparedness,
- cybersecurity and hybrid threats,
- maritime security and the rule of law at sea,
- digital governance and innovation,
- and the geopolitical context of resilience-building in the Baltic Sea region.

The Group's work was grounded in openness, mutual respect, and practical exchange between national and regional parliaments. Its outcomes are intended to support long-term stability, cooperation, and democratic resilience in the Baltic Sea region.

1. Programme of the Working Group

a) Constitution

The Working Group is constituted as an ad hoc working group under the auspices of the Standing Committee of the Baltic Sea Parliamentary Conference, following the BSPC Rules of Procedure.

b) Background

The Russian invasion of Ukraine was a shock to the Baltic Sea region and its energy systems. Energy dependence on Russia is dangerous, and it is important to find new ways to ensure energy security and self-sustainability of the region. Another area of importance for the Baltic Sea region is resilience and connectivity. The regional energy, transport, and digital networks need to become stronger and more integrated to meet the needs of the modern world. The BSPC Working Group on Climate Change and Biodiversity ended its work in August 2023, but despite that, the BSPC needs to continue working on sustainability and meeting the regional climate goals. The BSPC has become an excellent format for discussing energy security, self-sustainability, resilience, and connectivity in the Baltic Sea region. The BSPC has a pivotal role in finding solutions to current and future challenges and the potential to enhance cooperation of the Baltic Sea states in the areas covered by the Working Group.

c) Objectives

The overarching objective of the Working Group is to elaborate political positions and recommendations on energy security, self-sustainability, resilience, and connectivity. For this purpose, the Working Group should establish and maintain contacts with relevant institutions, organisations, and other actors in the Baltic Sea region and beyond. The Working Group shall contribute to the exchange of knowledge and best practices. It shall also help to actively drive cooperation in the Baltic Sea region in this policy field and to follow and influence political initiatives.

d) Main Directions of the Work of the Working Group

- **Energy Security and Self-sustainability of the Region**

Producing green, affordable, and climate-neutral energy has been among the traditional common challenges for the countries in the Baltic Sea region; however, the activities of Russia have also brought about challenges relating specifically to energy security, availability, and affordability. In the energy sector, the Baltic Sea region should aim to achieve self-sustainability that would contribute greatly to the economic development and stability of the region.

The main topics to be discussed by the Working Group include:

- joint approaches in further phasing out and preventing dependency on fossil fuels, especially from Russia;
- enhancing cooperation to ensure clean and affordable energy, in particular, but not limited to hydrogen policy;
- encouraging collaboration in energy and sustainability research and innovation.

- **Resilience and Interconnectivity of the Baltic Sea States**

The aim to connect the Baltic Sea region is based on common features and challenges of the region. Increasing the connectivity between the Baltic Sea states and the resilience of critical infrastructure will contribute to thriving regional communities and businesses as well as to building similarly strong relationships with neighbouring countries.

The main topics to be discussed by the WG include:

- joint measures towards an open, competitive, fully integrated, and resilient regional energy market;
- building interconnected, sustainable, and resilient transport systems together;
- accelerating the transition to a single digital market resilient to internal and external threats.

e) Participation

All member parliaments and parliamentary organisations of the BSPC are invited to participate in the Working Group with one member and one substitute each, accompanied by staff. Members and substitutes must be parliamentarians.

f) Mode of Work

The Working Group will collect and compile information utilizing expert presentations, study visits, and other information-gathering activities. The materials will be discussed and analysed continuously during the meetings of the Working Group. The aim is to gradually elaborate positions and recommendations for the annual resolutions of the BSPC.

The Working Group shall adopt a working plan at its first meeting. The Working Group is expected to hold at least two meetings a year and prepare a set of political recommendations for the annual resolutions of the BSPC. The interim report will be presented during the 33rd BSPC and the final report during the 34th BSPC.

g) Follow-up

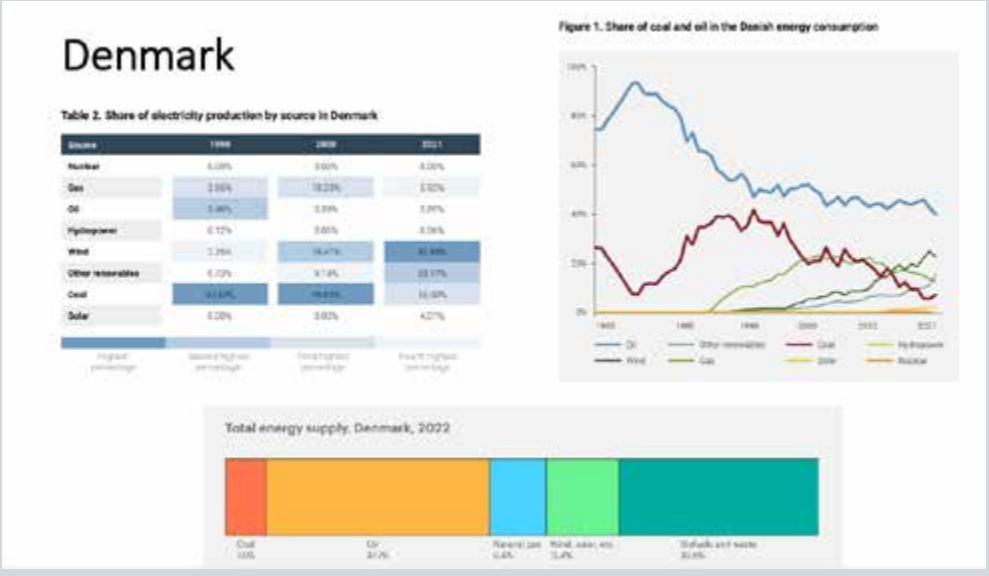
After the publication of the political recommendations at the 33rd and 34th BSPC, the members of the Working Group should take various initiatives to disseminate the recommendations and monitor their implementation. The members are invited to raise discussions about the recommendations in their home parliaments and relevant Committees, pose questions to their governments and public authorities, and engage in various opinion-building activities, not least in their constituencies.

2. Comparative Analysis of the Countries in the BSPC

Energy

The countries in the Baltic Sea region have different energy portfolios, meaning there are plenty of possibilities and challenges. The Baltic Sea countries, to varying degrees, have to change their energy portfolios to achieve carbon-neutral generation. For the past 10-15 years, energy research publications have shown that the future of energy systems is hybrid. To build a hybrid energy system, it is necessary to understand the contents of the energy portfolio and identify the needs to be produced, imported or borrowed from the neighbouring countries.

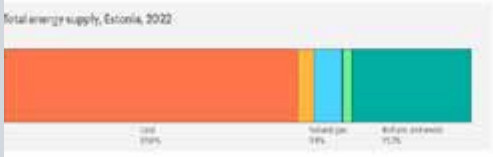
Baltic Sea Region Energy Profiles



Estonia

Table 7. Share of energy consumption by source in Estonia

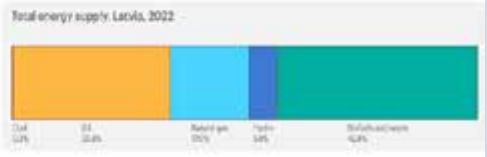
Source	1990	2000	2021
Nuclear	0.00%	0.00%	0.00%
Gas	13.14%	10.40%	7.21%
Oil	33.41%	21.22%	25.84%
Hydropower	0.00%	0.13%	0.13%
Wind	0.00%	0.93%	2.93%
Other renewables	0.00%	7.21%	10.24%
Coal	53.45%	59.75%	51.66%
Solar	0.00%	0.37%	1.83%



Latvia

Table 8. Share of energy consumption by source in Latvia

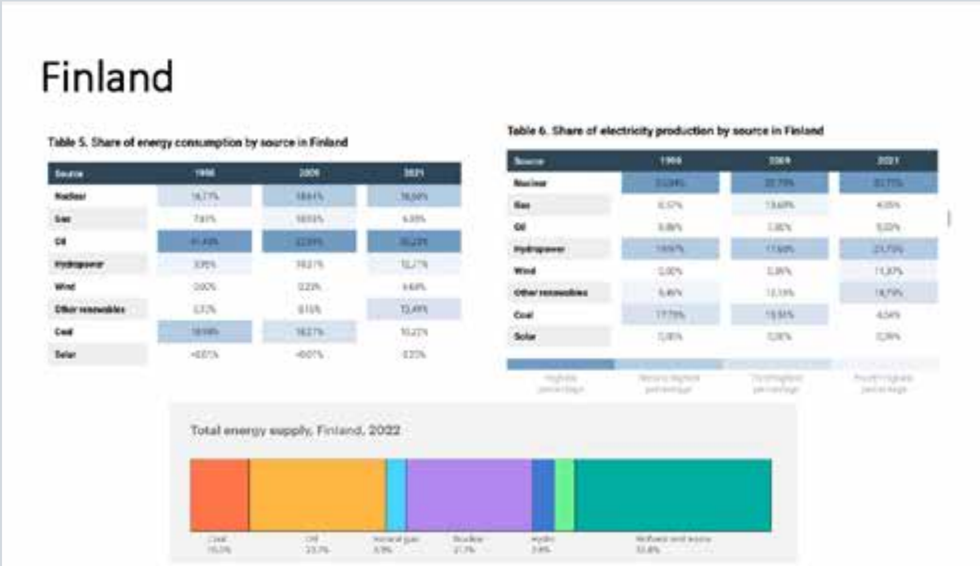
Source	1990	2000	2021
Nuclear	0.00%	0.00%	0.00%
Gas	28.71%	22.59%	27.46%
Oil	43.56%	41.45%	45.66%
Hydropower	14.26%	23.03%	14.81%
Wind	0.00%	2.21%	0.87%
Other renewables	0.00%	0.93%	4.31%
Coal	3.92%	2.27%	0.85%
Solar	0.00%	0.00%	0.00%

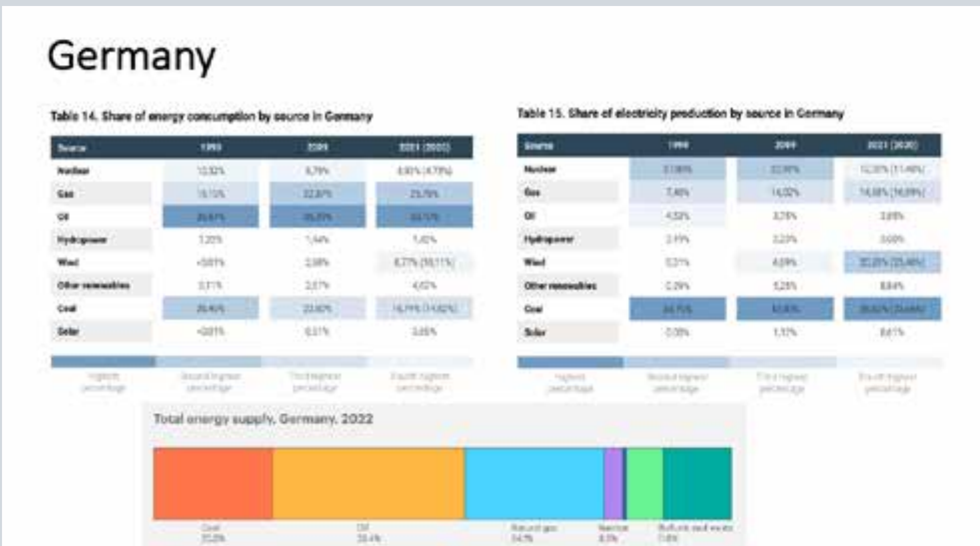


Lithuania

Table 11. Share of energy consumption by source in Lithuania

Source	1990	2000	2021
Nuclear	23.91%	32.59%	0.00%
Gas	26.49%	26.44%	31.79%
Oil	42.91%	32.95%	32.92%
Hydropower	3.61%	1.83%	1.44%
Wind	0.00%	3.43%	3.08%
Other renewables	0.00%	0.89%	2.92%
Coal	4.09%	2.13%	3.03%
Solar	0.00%	0.00%	0.44%


Finland
Table 5. Share of energy consumption by source in Finland
Source
Nuclear
Gas
Oil
Hydropower
Wind
Other renewables
Coal
Solar
Table 6. Share of electricity production by source in Finland
Source
2021
Nuclear
Gas
Oil
Hydropower
Wind
Other renewables
Coal
Solar
Total energy supply, Finland, 2022


Germany
Table 14. Share of energy consumption by source in Germany
Table 15. Share of electricity production by source in Germany
Total energy supply, Germany, 2022

Sweden

Table 3. Share of energy consumption by source in Sweden

Source	1990	2000	2021
Nuclear	26.36%	22.64%	21.01%
Gas	0.65%	1.16%	2.01%
Oil	32.36%	27.03%	22.63%
Hydropower	31.42%	27.73%	24.47%
Wind	0.03%	1.13%	12.35%
Other renewables	0.91%	6.24%	8.71%
Coal	5.05%	3.96%	3.40%
Solar	0.00%	0.00%	0.02%

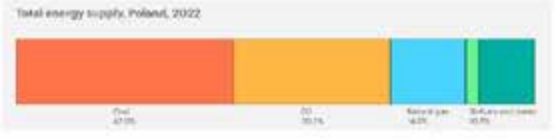
Table 4. Share of electricity production by source in Sweden

Source	1990	2000	2021
Nuclear	46.75%	38.19%	31.19%
Gas	0.29%	1.34%	0.28%
Oil	1.27%	1.41%	1.31%
Hydropower	49.16%	48.71%	47.97%
Wind	0.01%	1.82%	13.95%
Other renewables	1.32%	8.39%	7.76%
Coal	0.74%	0.27%	0.32%
Solar	0.00%	0.01%	0.01%

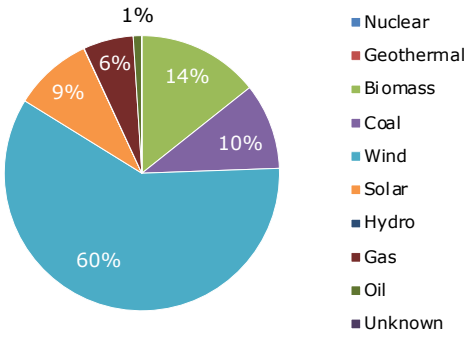
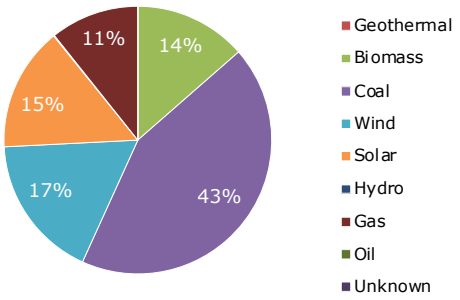
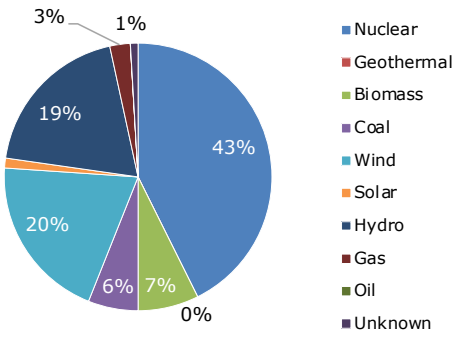
Poland

Table 13. Share of energy consumption by source in Poland

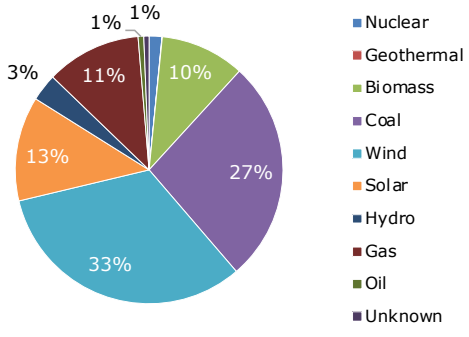
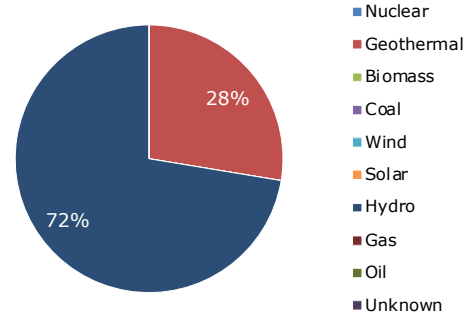
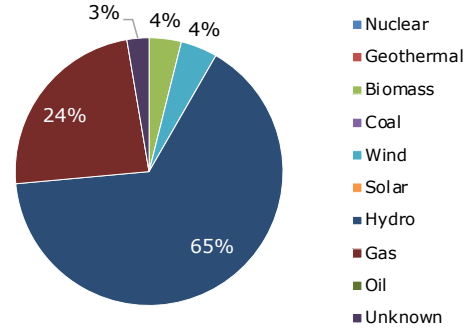
Source	1990	2000	2021
Nuclear	0.00%	0.00%	0.00%
Gas	8.00%	14.00%	10.04%
Oil	13.00%	18.00%	20.00%
Hydropower	0.30%	0.51%	0.92%
Wind	0.00%	1.20%	3.44%
Other renewables	0.00%	5.00%	1.40%
Coal	79.00%	70.00%	62.00%
Solar	0.00%	0.00%	0.00%

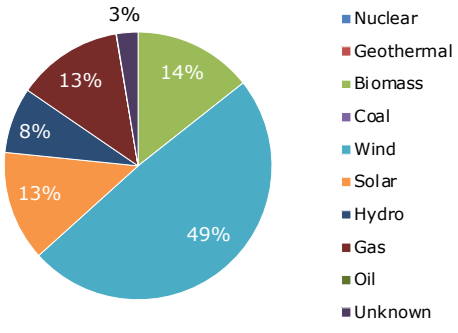
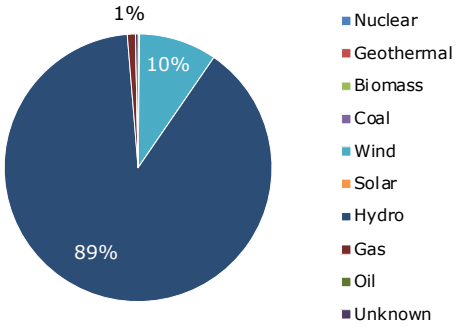
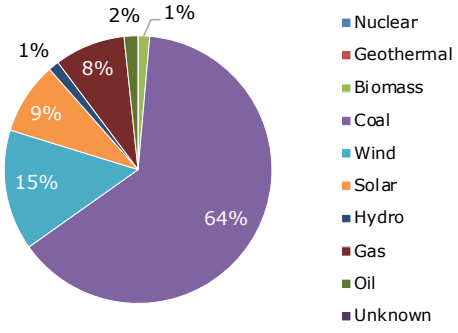


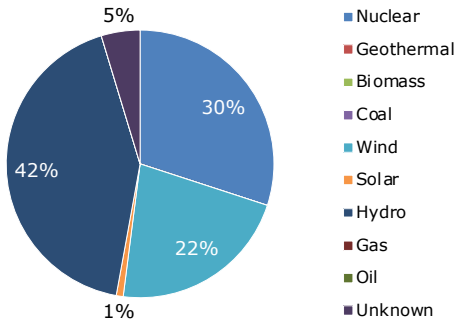
Baltic Sea Region Electricity Production in 2023[1]

Country	Production, TWh	Share of renewable energy	Electricity production by source
Denmark	32.9	83 %	
Estonia	4.63	46 %	
Finland	74.5	48 %	

1 *Data retrieved on 16 June 2024, https://app.electricitymaps.com/zone/NOttps://www.gie.eu/publications/maps/system-capacity-map/*

Country	Production, TWh	Share of renewable energy	Electricity production by source
Germany	446	60 %	
Iceland	15.9	100 %	
Latvia	5.69	74 %	

Country	Production, TWh	Share of renewable energy	Electricity production by source
Lithuania	5.44	86 %	
Norway	151	99 %	
Poland	153	27 %	

Country	Production, TWh	Share of renewable energy	Electricity production by source
Sweden	155	70 %	

Baltic Sea Region Electricity Production and Consumption in 2023, TWh[2]

Country	Production	Consumption	Balance
Denmark	32.9	51.7	-18.8
Estonia	4.63	11.9	-7.27
Finland	74.5	84.3	-9.8
Germany	446	498	-52
Iceland	15.9	15.9	0
Latvia	5.69	9.05	-3.36
Lithuania	5.44	15	-9.56
Norway	151	162	-11
Poland	153	168	-15
Sweden	155	163	-8

2 *Data retrieved on 16 June 2024, https://app.electricitymaps.com/zone/NOttps://www.gie.eu/publications/maps/system-capacity-map/*

Baltic Sea Region Gas Infrastructure and Capacities in 2023, GWh[3]

Country	Yearly demand	Maximum production, GWh/d	Working gas volume[4]
Denmark	20.873	27	10.372
Estonia	3.425	-	-
Finland	13.315	0.5	-
Germany	803.300	147	251.353
Iceland	-	-	-
Latvia	8.201	-	25.000
Lithuania	14.912	-	-
Norway	-	-	-
Poland	176.613	82	37.493
Sweden	6.116	0.2	102

Geographical Distribution of the European Gas Demand[5]

Figure 2. - Geographical distribution of the European gas demand

3 *Data retrieved on 30 June 2025, https://www.gie.eu/publications/maps/system-capacity-map/*

4 *Total volume of gas storage minus the cushion gas*

5 *Yearly Supply Outlook 2022/2023 of the European Network of Transmission System Operators for Gas (ENTSOG)*

Transport

The countries of the Baltic Sea region have significant differences in transport infrastructure. Throughout the Working Group meetings, the members have discussed increasing connectivity between the countries. However, to understand the future possibilities, it is important to understand the strengths of each country.

Country	Short description regarding roads, railway lines, airports, and seaports
Denmark	Regional transport hub (air, sea, and railway) of major importance connecting Scandinavia and beyond
Estonia	Quality and sufficient capacity for national travel, seaports ensuring passenger and freight mobility as well as the development of the Rail Baltica project
Finland	Major source and destination of passengers and commercial freight
Germany	Advanced and varied public transport system
Iceland	Well-developed sea transport and air travel
Latvia	Riga Airport as the largest air traffic hub in the Baltic States, increased ferry connection to Sweden, and the development of the Rail Baltica project
Lithuania	Quality road infrastructure and the development of the Rail Baltica project
Norway	Well integrated into the overall Scandinavian transport system, a major sea-going capability with unprecedented relevance for the energy sector
Poland	Rapid improvements in developing roads and railway connections
Sweden	Well-developed national road, railway, and air travel system

3. Main Conclusions after the Meetings of the Working Group

3.1 Meeting on 15-16 October 2023 in Riga, Latvia

During the Working Group's inaugural meeting, the members and experts discussed all the topics to be covered during its meetings, including energy, defence, transport, and digital connectivity of the Baltic Sea region. WG Chairman Andris Kulbergs underlined that the region was facing many challenges, a major one being the security of energy, economies, and societies. Ukraine showed an example of how the energy sector could be attacked directly and its vulnerability if it was too centralised.

The main information and conclusions of the meeting – particularly from the perspective of the experts – are summarised in this subchapter, but more detailed information can be found in the meeting notes. The experts that have contributed to the meeting are Energy market analyst Mr Reinis Āboltiņš, Minister of Transport Mr Kaspars Briškens, Latvenergo AS Regulatory Affairs Director and Sadales tīkls AS Chairman of the Supervisory Board Mr Kristaps Ločmelis, and Deputy State Secretary Ms Līga Rozentāle.

Energy

- Reinis Āboltiņš pointed out that countries in the Baltic Sea region had different energy portfolios, meaning that there were plenty of possibilities and challenges. He emphasised that all countries in the Baltic Sea region had challenges in reaching carbon-neutral energy portfolios. Despite that, there was no single technology that could provide an ultimate solution; however, for the last 10-15 years, all indexed energy research publications had been showing that the future of energy systems was hybrid. The ability to build a hybrid energy system, according to Mr Āboltiņš, required understanding the contents of the energy portfolio and identifying the needs to be produced, imported, or borrowed from the neighbouring countries. The maintenance and timely investment in the energy portfolio was highlighted as important.

- Energy production and balancing were important topics for future discussion. The parliamentary side emphasised the importance of understanding the plans in this area for the countries in the Baltic Sea region. They highlighted the importance of balancing "unreliable" sources of energy such as wind and solar and finding solutions to balance renewables while improving regional connectivity.

- Minister of Transport of the Republic of Latvia Kaspars Briškens agreed that electricity and gas infrastructure required years to develop. He added that for this reason, transmission system operators were regularly updating 10-year network development plans, including so-called common interest projects.

- Mr Āboltiņš noted that it was important to ensure interconnections and energy flows across borders in the Baltic Sea region. He highlighted the huge wind energy potential in the area, although the countries were not utilising it to its full extent, despite it potentially being the second biggest source of electricity.

- Kristaps Ločmelis noted that the development of wind energy projects in the region were facing considerable difficulties and thus needed better coordination. He concluded that several challenges were connected with public support and biodiversity requirements. Nowadays, according to him, it took too long to get access to or realize the projects. Sharing experience in this area was vital for the development of wind energy in the region.

- Mr Āboltiņš affirmed that there was a clear projection of rapid electricity consumption increase in several industry-leading countries such as Sweden and Germany, whose electricity generation portfolio would be falling behind the demand and would have to be balanced by neighbouring countries through improved interconnectivity.

- Mr Kristaps Ločmelis spoke of an untapped renewable energy system potential in the Baltic States, as they might supply the European Union member states with green energy. Considering the relatively low local consumption, the Baltic States could export most.

- Mr Āboltiņš suggested that the gas market had reacted to the global convulsions provoked by the Russian invasion of Ukraine, a very targeted and long-planned action by Russia. He reminded the meeting that many policymakers and decision-makers had refused to view the Nord Stream pipelines as a political project and security risk. At their cumulative capacity of 110 billion cubic metres of natural gas, Nord Stream would have matched almost exactly the volume annually carried from Ukraine to Europe.

- He further noted that, when looking at the energy systems, the countries had become cleverer: They were managing quite well and diversifying their gas supplies away from Russia. The biggest challenge was continuing to look for better solutions and having a broad vision, not narrowing down on the national interests. That was even more important at the present time of increasing interconnection of markets.

- Mr Āboltiņš indicated that the countries with more energy connections having lower energy prices demonstrated to the rest of Europe that interconnections were extremely important. If there was no connectivity in the energy market, there would be blackouts, constrained situations, and limited cross-border capacities, leading to price spikes.

- Mr Āboltiņš suggested regional policies in terms of hydrogen in the Baltic Sea countries as another important issue to be addressed, such as considering the synchronisation of their plans and policies.

- Deputy State Secretary of the Ministry of Climate and Energy of the Republic of Latvia, Ms Līga Rozentāle, explained the current energy storage solutions in Latvia, mentioning that the country was exploring various storage technologies, including large-scale batteries, hydrogen storage, and nuclear energy. While Latvia was currently focusing on maintaining natural gas as a key energy source, the transition to more sustainable storage solutions was crucial. The integration of these technologies would be essential for balancing the intermittent nature of renewable energy sources such as wind and solar.

- Ms Rozentāle discussed investments in solar energy, emphasising that Latvia saw significant potential in solar energy, particularly for households and small businesses. The country was focusing on supporting solar microgeneration and creating a legal framework to encourage the adoption of solar energy systems. This included simplifying the process for households to install solar panels and ensuring an easy connection to the grid. Additionally, she highlighted the importance of solar energy in achieving Latvia's renewable energy targets and reducing dependence on fossil fuels.

- Mr Kristaps Ločmelis outlined the developments in the electric vehicle (EV) infrastructure in the Baltic Sea region. He emphasized that its expansion was critical for promoting the adoption of electric vehicles and achieving sustainability goals. Latvia, for instance, was investing in the development of nationwide EV charging networks, with a focus on ensuring that there were sufficient charging stations in both urban and rural areas to support the growing number of electric vehicles. He mentioned that Latvenergo, one of the leading energy companies in the Baltic States, was actively developing a charging network for electric vehicles in the region. Among other aspects, they were installing fast-charging stations along major highways and in cities, ensuring convenient access to charging points for EV users. The company was also exploring innovative solutions such as smart charging and vehicle-to-grid (V2G) technologies to optimise energy use and support grid stability.

Military Mobility and Transportation

- Minister Kaspars Briškens called the integration of the Baltic Sea region across various areas, including transport, digital connectivity, and defence, very important for regional security and development.

- He stated that the Baltic Sea region had the potential to become an integrated defence area with strong cooperation on coastal, air, and maritime defence. Strengthening military mobility or a new strategy for military mobility should be a joint priority in all different modes of transport. He added that, for example, the cable corridors connected with the development of the Rail Baltica project would serve not just for the railway's technical and commercial requirements, but also as an opportunity to connect the defence and civil infrastructure with independent digital networks.

- Mr Briškens noted that the Baltic Sea was heavily navigated, yet significant potential remained to further strengthen the interconnection across the Baltic Sea region, especially in the East-West direction.

Digital Connectivity

- Minister Briškens saw the last-mile connectivity as a challenge across the Baltic Sea region. It was important to share all the best practices across the region on how to implement these final connections, how to commercialise them, and how to ensure that the digital infrastructure managers would cooperate with commercial operators.

- He viewed potential in the Baltic Sea region for strengthening digital connectivity, both across and along the Baltic Sea. One example was the far greater number of submarine cables in the North Sea and the Atlantic Ocean than in the Baltic Sea. However, some of the cables in the Baltic Sea had been laid down in the early 1990s. The development of high-capacity broadband 5G – and the impending advent of 6G technologies – meant that their capacity might prove insufficient.

Cross-Border Projects

- Minister Briškens said that large-scale infrastructure projects, such as the Rail Baltica railway and the Fehmarn Belt tunnel, tended to experience delays in their development. Such delays were causing capital expenditure escalations and leading to the generous funding from the European Union being reduced. Each call seemed to be a separate action with a separate accounting procedure and paperwork.

On occasion, a project might receive one package while waiting for another. Thus, the project developers were left idling. He proposed raising awareness of these issues in the European Union: Changes were necessary if Europe wanted to accelerate large-scale projects and deliver the TEN-T core network by 2030.

Summary of the Key Points from the Expert Presentations

The following summary captures the key points from the expert presentations, emphasising the strategic initiatives, challenges, and solutions in transport and energy security within the Baltic Sea region. The focus on regional cooperation, renewable energy development, and infrastructure investments underscores the importance of integrated approaches to enhance connectivity, resilience, and sustainability.

Transport and Connectivity

Minister of Transport of the Republic of Latvia, Kaspars Briškens:

- Rail Baltica Project: A critical initiative to enhance north-south access, connecting the Baltic States with Poland and integrating into the broader European transport network. This project is part of the North Sea-Baltic TEN-T corridor and aims to create new corridors connecting the Baltic Sea, Black Sea, and Aegean Sea, including integration with the UK.

- Air Baltic: The airline operates from bases in Riga, Tallinn, and Vilnius, covering routes in Finland, Sweden, Denmark, Germany, Poland, and beyond. It has one of the greenest fleets in Europe.

- Marine Traffic: The Baltic Sea, particularly the Danish straits, is heavily frequented. Efforts are underway to reestablish ferry connections between Riga and Stockholm and improve the east-west connection.

Latvian Logistics Sector:

- It is undergoing a significant shift from reliance on Russian raw materials to focusing on European connections. Its historical ties with Central Asia provide opportunities to enhance trade routes through Latvian ports.

- Emphasis is placed on creating integrated logistics corridors for Western and Nordic customers.

Digital Connectivity:

- There is a potential for strengthening submarine cable infrastructure in the Baltic Sea.
- Rail Baltica will feature cable ducts for commercial and defence digital networks, contributing to Latvia's digital connectivity policy.

Energy Infrastructure:

- Future plans include developing coastal wind farms and hydrogen policies for transport.
- Ports and logistics sectors are prepared to support investments in offshore wind parks and hydrogen storage distribution.

Challenges and Solutions:

- Administrative burdens and capital expenditure escalations affect mega-projects like Rail Baltica. Streamlining processes and ensuring timely EU funding are vital.
- The geopolitical situation emphasises the importance of regional security and interconnectivity projects.

For more details, see the following presentations:

https://www.bspc.net/wp-content/uploads/2023/10/Briskens_Kaspars_RegTran_161023_194_KB.pdf

https://www.bspc.net/wp-content/uploads/2023/10/2023-10-13-_RBR-final.pdf

Energy Sector and Security

Deputy State Secretary of the Ministry of Climate and Energy, Līga Rozentāle:

- Energy Independence and Export: Latvia aims to achieve energy independence and eventually export energy, leveraging wind, biomass, solar, and hydroelectric power.

- Liberalised Markets: Latvia's electricity and gas markets are fully liberalised, encouraging competition and consumer choice.

- Synchronisation with Continental Europe: An accelerated timeline aims to synchronise with Europe's grid by February 2025, enhancing energy security.

Renewable Energy Development:

- Projects include the Estonian-Latvian Wind Park (ELWIND) and the Baltic Wind Connector between Estonia and Germany.

- Efforts focus on optimising network use and auctioning public land for wind parks.

Gas Sector:

- Developing a common gas market with Estonia and Finland, with the potential for Lithuania to join.

- Exploring a hydrogen infrastructure and biomethane production, leveraging the Inčukalns underground gas storage for regional security.

Current Security of Gas Supply:

- The Inčukalns storage is close to full capacity, with significant reserves and long-term agreements with the Klaipėda LNG terminal.

- There are plans to develop a common framework for utilising the Paldiski LNG terminal if needed.

Climate Neutrality Goals:

- High renewable energy targets have been set, with a focus on solar and wind power for domestic use and exports.
- There is potential for hydrogen production from electricity and regional cooperation on nuclear energy.

Challenges and Considerations:

- Regional cooperation on balancing renewable energy sources and infrastructure investments is needed.
- Timely investment in electricity and gas infrastructure is vital to prevent blackouts and ensure supply security.

https://www.bspc.net/wp-content/uploads/2023/10/Rozentale_Liga_BSPC_KEM__161023.pdf

Renewable Energy and Market Dynamics

Latvenergo AS:

- Strategy: The company aims to double its generation capacity by 2030, focusing on hydropower, cogeneration plants, and renewable energy solutions.
- Challenges: Environmental permits, grid connections, and military-restricted areas pose obstacles to wind power development.
- Interconnections: These are essential for the security of supply, with planned investments in new radars to facilitate wind farms.

Regional Wind Energy:

- Despite the high potential for wind energy in the Baltic Sea region, permitting processes and biodiversity concerns delay projects.

- European Commission regulations could help expedite wind power plant installations.

Market Dynamics:

- Different energy portfolios across the region offer opportunities for cooperation and hybrid energy systems.

- Maintaining and investing in transmission grids and interconnections to balance supply and demand is crucial.

Hybrid Energy Systems:

- Future energy systems will be hybrid, combining various renewable sources and technologies.

- Regional cooperation and open-market policies are crucial for managing interconnected energy markets and ensuring resilience.

Geopolitical Considerations:

- The exclusion of Russia allows for more cohesive regional energy strategies.

- Synchronisation of national plans for energy production, consumption, and interconnection is essential for regional security and sustainability.

3.2 Meeting on 17-18 March 2024 in Helsinki, Finland

During the 2nd meeting of the WG, the members discussed geopolitics, energy, addressing hybrid threats and other topics. The main conclusions of the meeting are summarised in this subchapter; however, more detailed information can be found in the notes of the meeting. The experts that have contributed to the discussions of the meeting: Programme Director of Natural Resources of the Institute of Finland Ms Johanna Kohl, Head of International Relations at the Hybrid Centre of Excellence Mr Tapio Pyysalo, COI Director Mr Jukka Savolainen, Leading Researcher of the Finnish Institute for International Affairs Mr Marco Siddi, Mr Jussi Soramäki, and Docent of the Russian Resource and Energy Policy of the National Defence University of Finland Mr Veli-Pekka Tynkkynen.

Geopolitics

- Mr Veli-Pekka Tynkkynen emphasised that the Baltic Sea region countries should reevaluate the strategy of Russia not just from the military but also from the economic and hybrid perspective. He stated that it was necessary to understand the strategy of Russia as "a great power of flows". In present-day Europe, imperial and colonial Russia was battling against a free, democratic Ukraine serving as an anti-Russian module. He indicated that the culture, language, and sovereignty of Ukraine and Belarus were unthinkable for many Russians.

- Mr Tynkkynen claimed that Russia viewed the world as all "flows" functioning as means of coercion and repression, which were persuasive and alluring at the same time. There was the violence of war machinery: bullets and missiles killing people, troops, tanks, and others. But Russia had also been targeting infrastructure and nature. He noted that people were also considered as flows – the deported and Russianised Ukrainians were either seen as new Russians and given passports or Russianised in Ukrainian lands. While the flows of violence were material, the greatest export commodity was fear. The Russian regime continued claiming that it would nuke its adversaries as if Russia were the only nuclear power in the world. It was important to be sceptical in taking this fear in.

- He further said that Russia was also battling against the energy transition and climate policies. In the past 30 years of Vladimir Putin's reign, energy had been vital in centralising the power of Russia. Energy revenues were highly important for the country as they made up half of the state budget. That had also created enormous economic liberties and had made it possible to divert a large share of that money to violence. Throughout Putin's years in power, energy had been crucial in paving the way for the dictatorship and increasing violence both inside and outside Russia.

- Mr Tynkkynen indicated that Russia was a "fossil empire". Based on a fossil energy economy, and due to its mystified history, it stood against technological modernisation, the energy transition, and climate action. Russia was pulling the brakes on the European energy transition, understanding that the country would suffer because of climate change but seeing that other countries would suffer more, which would make them a stronger player. The people in power were willing to let Russia suffer as long as others suffer more.

- He also said that energy had turned from a soft to a hard weapon. It could still be alluring if a country is interested. Transport routes had also been used – for example, by impacting the ability to fly over Russia. Other material targets included grain (such as destroying Ukrainian fields), metals (such as nickel and lithium), the environment (coercing and exporting fear via the potential of an accident, such as in the Baltic Sea), people (illegal immigrants on the borders), cyber (cyber attacks and information war), critical infrastructure (targeting and threatening western infrastructures such as wind parks), money (funding right-/left-wing extremists in the West) as well as assassinations (covert killings and sabotage in Europe). If this was the strategy of Russia, due to their economic vulnerabilities, they were under threat. For Mr Tynkkynen, this was a narrative Europe could use.

Energy

- Mr Marco Siddi noted that nowadays energy was used as a weapon. Before 2022, there were instances of such weaponisation but not to such a scale. He added that within certain limits, Gazprom had already been exporting less to Europe before the full-scale invasion. A series of measures, such as embargos, phaseouts, and price gaps on Russian oil products had taken place. These had lost their effect as Russia had found ways around these sanctions. Thus, it was very important to link up with the rest of the world.

- He furthermore mentioned that the EU had quickly responded to the war. This had been the second time in two years that the region had faced a serious crisis. In the energy sector, the RePowerEU Plan had been presented by the European Commission on 18 May 2022. It proposed accelerating the energy transition by reducing gas imports from Russia, focusing on energy efficiency and saving as well as diversifying energy sources. Mr Siddi viewed these as temporary fixes, though. The best way for the EU to move ahead was to focus on the green transition. At the same time, the debate on nuclear power seemed to have revitalised.

- Mr Siddi stated that the EU should also balance its energy security by domestic production. The war was not confined to Ukraine as critical infrastructure was being targeted in the Baltic Sea as well (e.g., the Nord Stream sabotage). Gas from Russia was reaching the EU via Turkstream and Ukraine, while LNG imports had been increasing, with Spain and Belgium becoming larger importers. He believed that the Balticconnector damage on 8 October 2023 was another example of damage to the infrastructure.

- He also noted that the winter of 2025 could be crucial in terms of energy, necessitating better preparedness. He encouraged the countries in the Baltic Sea region to set up more interconnections in the energy sector and exchange information.

Addressing Hybrid Threats

- Mr Tapio Pyysalo asserted that hybrid threats were coordinated and synchronised actions that deliberately targeted systemic vulnerabilities of states and institutions through a wide range of means, exploiting the thresholds of detection and attribution. They were aimed at influencing the decision-making of the target country. Hybrid threats were targeting the foundations of democracy across civic services and governance spaces, challenging the availability of their services. He noted that hybrid threats were currently increasing due to disinformation and cognitive threats. This process was also affected by global competition and systemic rivalry, global instability and the proliferation of conflict, weaponised interdependence, technological developments, cognitive threats, and the cost-efficiency of hybrid tools.

- Mr Pyysalo stated that the cyber domain was used for attacks against Western societies and mass data collection. Military cooperation was also increasingly used for strategic gain. Responding to such hybrid threats, in the short term, required raising the situational awareness. In the medium and long term, there was a need to build societal resilience that would help build deterrence against hybrid threats, providing a cultural or systemic change.

- Mr Jukka Savolainen indicated that critical infrastructure was vital and used in cases of conflict and espionage. Since private companies did not welcome any extra costs, they did not want to provide extra security. In his view, it was necessary to explain that investing in security was important for durability.

Maritime Connectivity and Security

- Jussi Soramäki highlighted that connectivity was under threat, as shown by the example of the Balticconnector pipeline case. Protecting maritime infrastructure in the exclusive economic zone was extremely difficult as it questioned the freedom of the sea, a problem most states had not yet solved.

- Additionally, he pointed out that Finland was technically an island dependent on maritime transport with 95 % of exports and imports to the country transported by sea. The Baltic Sea was the main shipping route and lifeline for Finland. Some traffic was still incoming from Russia, but the majority of the border was almost entirely closed. He asserted that this temporary closure would persist as long as Russia continued its different kinds of hybrid threats.

- Mr Jussi Soramäki further warned that the so-called Shadow fleet (tankers transporting oil from Russian ports in the Gulf of Finland) harboured a great risk of a major oil spill. He advocated for the European Maritime Safety Agency taking a stronger role in controlling and helping the countries in the Baltic region. Additionally, he referenced wastewater from St Petersburg and the Leningrad Oblast, stressing the importance of cooperating with neighbouring countries and investment banks to cut the emissions, adding that, with the geopolitical situation and the embargo, anything might happen. Any kind of deliberate hybrid acts could result in major pollution in the Baltic Sea.

Crisis Preparedness

- Mr Janne Känkänen observed that there was no infrastructure for regional stockpiling and combining resources. However, it would be useful to develop one. Finland and Sweden had had fairly extensive discussions on developing a joint stockpile, but the idea could be explored even further in the future. It would be excellent to create an extra layer of security and resilience that could complement the national solutions. He also pointed out a growing interest in countries cooperating on preparedness.

Bioeconomy

- Johanna Kohl emphasised that Europe aimed for open strategic autonomy challenges to optimise the use of bio-based raw materials throughout the value chain. In her view, it was vital for the EU to reduce its food system's dependence on imported production inputs.

- She believed that the bioeconomy had the potential to boost the added value; however, the development of bioeconomy value chains had recently been forgotten. She stressed the need to utilise and optimise the sustainable use of the forests and waters, advocating for the field to become an essential part of EU industrial and finance policies to create bioeconomy solutions to the polycrisis.

- Johanna Kohl recommended investing in research, technology development, and innovation, supporting the development of strong regional business clusters and value chains, educating the new generation of farmers and identifying the linkages between land use, new challenges in providing comprehensive regional security, and the need to increase the added value of the food sector. She highlighted the importance of increasing the EU RDI budget, focusing on the strategic competitiveness in Europe. She pointed out that it was important to focus on building long-term competitiveness rather than just providing manufacturing subsidies. Strengthening the role of bioeconomy in EU industrial policy and emphasising the collaboration between research, finance, and industry was necessary to stimulate investments leading to high value-added production using bio-based raw materials.

For more details, see the following presentations:

https://www.bspc.net/bspc-maritime-policy180324final2jussi-soramaki/
https://www.bspc.net/russia_great-power-of-flows-tynkkynen/
https://www.bspc.net/energy-politics-and-security-in-the-baltic-region-cbp2-siddi/
https://www.bspc.net/nutrient-recycling-in-the-grip-of-geopolitics-_kohl2/

Summary of the Key Points from the Expert Presentations

This summary encapsulates the key points of the BSPC WG meeting on 18 March 2024, reflecting the discussions and contributions of the experts involved.

1. Hybrid Threats and Countermeasures:

- Hybrid CoE Overview: Mr Pyysalo from the Hybrid CoE explained its role as an international, autonomous network promoting a whole-of-government and whole-of-society approach to counter hybrid threats.

- Rising Hybrid Threats: These threats target systemic vulnerabilities through various means, including disinformation, cyberattacks, and economic influence.

- Cooperation and Capacity Building: The emphasis is on fostering EU-NATO cooperation and increasing situational awareness to counter these threats. There is a need to build societal resilience for medium- and long-term deterrence.

2. Specific Hybrid Threats and Responses:

- Artificial Intelligence in Hybrid Threats: Ulrike Täck raised concerns about the role of AI in hybrid threats. Mr Pyysalo acknowledged the challenge, noting that AI could be used both defensively and offensively.

- Platforms and Measures: Anna Kassautzki questioned the effectiveness of current measures and regulations. Mr Pyysalo emphasised the need for better implementation and cooperation across social media platforms.

3. Maritime Security and Connectivity:

- Finnish Dependency on Maritime Transport: Mr Soramäki highlighted Finland's dependence on maritime transport, with 95 % of exports and imports transported by sea.

- Shadow Fleet Risks: Experts discussed the environmental threats posed by the Shadow fleet, including potential major oil spills. They advocated for a stronger role for the European Maritime Safety Agency (EMSA).

4. Geopolitical Context:

- Russia's Strategy: Mr Tynkkynen explained Russia's use of energy as a tool for coercion and repression, dubbing it a "fossil empire". He stressed the importance of understanding Russia's hybrid strategy and the need for Europe to use this narrative.

- Economic and Hybrid Perspective: Experts emphasised the need to reassess Russia not just militarily but also economically and in terms of hybrid threats. They highlighted the central role of energy revenues in Russia's state budget and its use for funding violence.

5. Energy Security:

- Energy as a Weapon: Mr Siddi and Ms Cordelia Buchanan Ponczek discussed the weaponisation of energy and the EU's response through measures like the RePowerEU Plan, aimed at reducing gas imports from Russia and diversifying energy sources.

- Renewable Energy and Interconnectivity: They noted the ongoing energy transition and the importance of regional cooperation and interconnections in the energy sector to ensure security and resilience.

6. Crisis Preparedness:

- National Emergency Supply Agency of Finland (NESA): Mr Känkänen detailed NESA's mission to ensure the continuity of vital state functions during crises. He highlighted Finland's extensive stockpiling system and the importance of cooperation with national and international partners.

- Pharmaceutical Supply: Ms Ulrike Täck emphasised the need for better cooperation among European countries to ensure a stable pharmaceutical supply, learning from the COVID-19 pandemic.

7. Bioeconomy:

- Potential of the Bioeconomy: Ms Kohl saw the bioeconomy's potential to boost added value although the development of bioeconomy value chains had recently been forgotten. She stressed the need to utilise and optimise the sustainable use of forests and waters, advocating for the field to become an essential part of EU industrial and finance policies to create bio-based solutions to the polycrisis.

8. Policy Recommendations:

- Regional Stockpiling: Experts observed the lack of infrastructure for regional stockpiling and combining resources, suggesting the development of a joint stockpile for added security and resilience.

- Collaboration and Competitiveness: They recommended investing in research, technology development, and innovation, supporting the development of strong regional business clusters and value chains, in addition to increasing the EU RDI budget to build long-term competitiveness.

3.3 Meeting on 26-28 May 2024 in Greifswald, Mecklenburg-Vorpommern








During the 3rd meeting of the WG, the members continued discussions on energy policy and energy security in the Baltic Sea Region with a particular focus on protecting critical infrastructure, energy transformation and reducing energy dependency. The main conclusions of the meeting are summarised in this subchapter; however, more detailed information can be found in the notes of the meeting. The experts that have contributed to the discussions of the meeting: Academic coordinator at the Alfred-Krupp-Wissenschaftskolleg Dr Christian Suhm, Minister of the Interior, Construction, and Digitalisation of Mecklenburg-Vorpommern Mr Christian Pegel, Entsorgungswerk für Nuklearanlagen GmbH, Dismantling of Greifswald Nuclear Power Plant Mr Kurt Radloff, European Commission, Head of Unit "Investment in High-Capacity Networks", Directorate-General for Communications Networks, Content and Technology (DG CONNECT) Mr Franco Accordino, Mayor of Greifswald Dr Stefan Fassbinder, Stralsund University of Applied Sciences Dr Andreas Noack and Stralsund University of Applied Sciences Dr Thomas Luschtinetz.

Protection of critical infrastructure

- Minister Christian Pegel stressed that only a comprehensive, coordinated strategy can secure the Baltic Sea region's infrastructure, protecting energy supply, communications, and transport routes against threats like cyberattacks, war, and natural disasters.

- He added that in the area of transport and traffic, the ports were becoming increasingly important as control and transhipment points due to new geopolitical developments.

- Minister Christian Pegel added that critical infrastructure, including LNG terminals and industrial ports, now have increased security measures and regular patrols to prevent and quickly address disruptions at sea. He noted improved information sharing between state and federal authorities, while also suggesting that centralizing responsibilities across the Baltic Sea region could strengthen collective security efforts.

- A recent NATO exercise took place at Mecklenburg-Vorpommern's seaport, where military equipment is now being transported via the Baltic Sea. The minister emphasized that the training, equipment, and mindset of soldiers are adapting as internal and external security increasingly overlap.

- Minister Christian Pegel outlined challenges following the Nord Stream incident in Germany, noting the complications due to separate policing systems across federal states and the federal police on the coastline. However, he highlighted improved information sharing, given the federal police's limited surveillance capacity across the Baltic Sea. Minister Christian Pegel expressed concern that Russian ships could freely move and stop along the Baltic, likely to monitor undersea electricity and communication cables. He noted similar discussions were happening in Finland, Sweden, Denmark, and Poland, aimed at strengthening regional security coordination.

- Minister Christian Pegel explained that, from Germany's perspective, the navy was the third part of the Baltic Sea. Russia is actively exploring the seabed for critical infrastructure like cables and pipelines. He shared that while the federal police saw the navy as already stretched thin, he hoped they would consider future responsibilities for monitoring this area. To achieve effective oversight, Pegel stressed the need for better technical resources and envisioned a regional cooperation center where Baltic Sea partners could coordinate. He also noted that, though international law may not evolve on this matter soon, proactive cooperation and information sharing are essential.

Safe decommissioning, dismantling, and disposal of the now-defunct nuclear power plants

- Kurt Radloff explained that following German reunification, the Federal Republic inherited state-run enterprises, including those operating the East German nuclear power plants in Greifswald and Rheinsberg. No investors stepped forward to privatize these plants, and significant upgrades would have been required to align with Western safety standards. As a result, the decision was made to decommission both plants.

- Kurt Radloff explained that dismantling the plants would produce around 1.8 million tonnes of material. About two-thirds could be released without radiological restrictions, while the remaining third would require decontamination at on-site conditioning facilities. By removing radioactive particles from materials like concrete, steel, stainless steel, and copper, these could then be recycled. This decontamination process is crucial not only for sustainability but also for reducing the final volume of radioactive waste needing disposal.

- He also shared that the Konrad shaft, Germany's designated repository for low and intermediate-level radioactive waste, is set to begin operations in 2029. Meanwhile, the search for a site to store high-level radioactive waste remains underway, managed by the Federal Company for Radioactive Waste Disposal. Radloff noted that a decision on a potential location is projected for no earlier than 2046, and possibly as late as 2068. This means that a functional high-level repository may still be several decades away.

Digital connectivity

- Franco Accordino explained that the goal of the EU vision for connectivity in the digital ecosystem aimed to have end-to-end integrated infrastructures and platforms as well as bundling connectivity with innovative use-cases, providing a stimulus to EU digital supply, new business models, and ensuring the competitiveness of the EU supply. This vision also included EU digital sovereignty, trusted suppliers, post-quantum crypto, and backbone connectivity. It was also to serve as an instrument to combine European and national public and private funds.

- The EU Regulation 2021/1153 supports two main actions: 5G infrastructure deployment, including 5G corridors and Smart Communities, and the development of pan-EU backbone infrastructures like Connectivity for Digital Global Gateways (e.g., submarine cables). The EU aims to strengthen internal connections and links to third countries, coordinating with various financial instruments and ensuring EU control over operations and technology (e.g., SMART cables). So far, 31 projects, including those in the Baltics, have received 311 million euros in funding.

- He suggested that a White Paper had been created to address Europe's digital infrastructure needs. Regarding submarine cable infrastructure, it proposed strengthening research and innovation in new fibre and cable technologies, creating an EU governance system for these infrastructures, and harmonizing security requirements in international forums. The paper also discussed establishing a dedicated EU certification scheme, a Delegated Act under the Connecting Europe Facility, and a review of available funding options, including the potential creation of an equity fund. The goal was to establish a system to understand the resilience gaps in the EU.

- Franco Accordino noted the strategic importance of the cables, sometimes leading to quite a lot of competition. It was vital to make these investments together with the private sector alongside interventions with the public and also at the level of governance. He recommended post-quantum cryptography data; furthermore, an expert group should be established and invitations sent to appoint member state representatives.

- Franco Accordino explained that the cables are equipped with sensors for temperature, movement, and optical changes, enabling them to detect any disruptions autonomously. By integrating these sensors, a global network can be formed, transmitting data to various entities, including defence organisations. He emphasised that this approach must be coordinated within the G7 and NATO. While the private sector should continue to deploy these cables, regulations should ensure that cable operators have specific obligations to protect them.

Cybersecurity

- Andreas Noack said that cybersecurity ventures was expecting global cybercrime costs to grow by 15 % per year over the next five years, reaching 10.5 trillion dollars annually by 2025. That made it more profitable than the global trade of all major illegal drugs combined. This had been the case since 2004, proving that cybercrime was a very important topic.

- The positive aspect was that companies spent around 10 % to 20 % of their IT budget on security. However, cybersecurity budget growth was below cybercrime cost growth (15 %).

- Andreas Noack summarised that present-day attackers ran very sophisticated cyber attacks that might take many years to reach their goal. In particular, he stressed that social engineering was a very powerful attack vector. This meant that more security awareness was needed, along with support for open source developers and considering social engineering in security monitoring tools.

Emission-free power supply and storage

- Thomas Luschtinetz highlighted the significant effort required for Germany to achieve the EU's goal of 40 gigawatts of electrolysis by 2030. He pointed out that importing green hydrogen could greatly benefit Mecklenburg-Vorpommern, potentially boosting jobs and economic value.

- He also emphasized the need for better knowledge exchange with the industry and the creation of transport infrastructure to effectively utilize hydrogen. Thomas Luschtinetz called on politicians to establish the necessary legal framework and offer support to make this transition possible.

Decarbonising Industrial Zones in the Baltic Sea Region

- Gabriele Hoffmann presented the "GreenIndustrialAreas" project, which aims to decarbonise industrial activities in the Baltic Sea region to reduce CO_2 emissions and decrease reliance on oil and gas imports. The project, involving partners from multiple Baltic states, seeks to certify green industrial zones and provides a toolbox showcasing decarbonisation technologies. Key outcomes include building capacities, developing certification guidelines, and establishing pilot sites. Dr. Hoffmann emphasized the project's contribution to fostering peace and stability in Europe.

Securing Offshore Wind Infrastructure

- Henrich Quick, Head of Offshore at 50Hertz, discussed the security risks facing offshore wind infrastructure, highlighting vulnerabilities such as drone attacks. He stressed the need for resilient systems and strong cross-border coordination, given the Baltic Sea's strategic importance to NATO. Dr Quick proposed enhanced communication with authorities and suggested implementing concentrated defence points to protect critical infrastructure

Transitioning to Hydrogen Energy

- Professor Stephan Knabe from Deutsche ReGas outlined their current LNG terminal in Lubmin and plans for transitioning to hydrogen energy. This includes a large-scale hydrogen production facility powered by offshore and onshore renewable energy, with the aim of integrating hydrogen into the regional energy grid. He underscored this initiative as part of Germany's transition from nuclear to renewable energy.

Advancing Fusion Energy Research

- Andreas Dinklage introduced the Wendelstein 7-X project at the Max-Planck-Institute for Plasma Physics in Greifswald, focusing on fusion energy research using stellarator technology. With significant progress in plasma confinement and discharge times, the Wendelstein 7-X represents a promising step toward fusion energy as a potential future energy source alongside renewables.

Energy Transition and Innovation

- Stefan Fassbinder, Mayor of Greifswald and World Mayor 2023, provided insights into Greifswald's rich historical legacy and its recent development as a hub for science and technology. He highlighted Greifswald's efforts in energy transition, including initiatives for decarbonising district heating systems, improving efficiency, and promoting combined heat and power systems. These local strategies align with broader regional goals for energy security and self-sustainability, contributing to CO_2 reductions and supporting Greifswald's role as a progressive, science-oriented city.

International Policy Framework for Infrastructure Protection

- Katrin Zschau, Chair of the Bundestag Committee on Climate Protection and Energy, addressed the critical need for infrastructure protection in the Baltic Sea, especially considering the threat posed by Russian scouting activities. She called for a strong international policy framework and robust cooperation between industry and environmental sectors to safeguard the region's infrastructure and promote investor confidence.

3.4 Meeting on 26-28 November 2024 in Bergen, Norway







The 4th meeting of the WG ESSRC took place in Bergen, Norway, from 24 to 26 November 2024. The meeting focused on critical infrastructure protection, energy resilience, offshore wind security, and the security implications of the Russian "shadow fleet" in the Baltic Sea. The discussions built on previous meetings, particularly the Greifswald session in May 2024, and included site visits, expert presentations, and policy recommendations. More detailed information can be found in the notes of the meeting.

The PowerPoint presentations used at the meeting are linked (in bold under blue font) in the article about the meeting on the BSPC website and can be downloaded from the link below:

https://www.bspc.net/strengthening-energy-security-and-infrastructure-resilience-in-the-baltic-sea-region/

1) Visit to Kollsnes Process Plant

The BSPC WG visited the Kollsnes Process Plant, a key facility in Norway's gas infrastructure. Site Manager Bjarte Padøy provided an overview of the plant's role in European energy supply, its operational framework, and future strategic goals. Kollsnes is operated by Gassco, with Equinor as the technical service provider. It processes natural gas from the Norwegian continental shelf and exports it to European markets. The plant has been in operation since 1996, and continuous upgrades have increased capacity and efficiency.

Key Takeaways

- Essential Role in European Gas Supply: Kollsnes delivers gas to approximately 18 million households in Europe daily. The facility has a processing capacity of up to 156 million standard cubic meters per day, nearly doubling its initial capacity of 80 million cubic meters when it began operations.

- Strategic Infrastructure and Workforce: The Kollsnes plant employs around 350 Equinor staff, while Gassco serves as the system operator. In total, Equinor's Norwegian operations include approximately 1,600 offshore employees and 4,000 onshore staff. The facility comprises a gas processing plant, liquid separators, and export compressors to ensure continuous gas flow.

- Security and Resilience Measures: In response to the Nord Stream sabotage and rising geopolitical tensions, Kollsnes has strengthened its security measures to guard against cyber and physical threats. The Norwegian Navy and security services have intensified their monitoring of critical infrastructure.

- Carbon Capture and Emission Reductions: The Northern Lights project, a major carbon capture and storage (CCS) initiative, will begin operations in 2025. It will store liquefied CO_2 in subsea reservoirs, contributing to Equinor's goal of reducing operational emissions by 50% by 2030.

- Energy Strategy and Market Dynamics: Norway exports approximately 1,207 TWh of natural gas per year, meeting up to 35% of the EU and UK's gas demand. The Kollsnes plant exports gas exclusively via pipelines, without reliance on sea transport. Future investments focus on optimising gas production while expanding into renewables, battery storage, and CCS technologies.

- During discussions, Working Group members examined gas infrastructure vulnerabilities, Europe's energy independence, and long-term sustainability strategies. The visit offered valuable insights into Norway's role in ensuring European energy stability amid evolving geopolitical dynamics.

2) Visit to Eviny Renewable Energy Company

The BSPC WG visited Eviny, one of Norway's largest renewable energy companies, where Senior Adviser Per Rune Henriksen provided insights into the company's operations and Norway's energy landscape. Eviny has been a key player in hydropower for over a century, with its first power station, built in 1927, still in operation today. The company also plays a significant role in regional grid services, electric vehicle charging infrastructure, and offshore wind energy development.

Rune Bratland, Head of HSE, Security, Emergency Preparedness, and Quality, outlined Norway's power supply governance structure, highlighting the roles of various authorities in energy security, crisis management, and emergency preparedness. The Power Supply Central Crisis Authority coordinates national responses, ensuring resilience against potential threats, including hybrid attacks and cyber risks.

Key Takeaways

- Hydropower Dominance: Hydropower accounts for 89% of Norway's power production, with 1,240 reservoirs holding more than 75% of Europe's total capacity. Eviny owns 39 hydropower plants, generating 7.7 TWh annually—enough to supply 480,000 households.

- Decentralised Grid Operations: Norway's regionalised energy system enhances resilience but requires close coordination among 85 different grid operators to balance supply and demand.

- Energy Export and Grid Interconnections: Norway's extensive cross-border energy links connect it to Sweden, Denmark, Germany, the UK, and the Netherlands, securing regional energy supply but also generating policy debates on electricity exports and price fluctuations.

- Cyber and Security Challenges: Hybrid threats to energy infrastructure are increasing, with state actors and organised crime potentially exploiting system vulnerabilities. Strict cybersecurity and close cooperation with law enforcement are necessary to mitigate risks.

- Future of Hydrogen and Renewables: While Eviny is expanding into offshore wind and battery storage, the high cost of hydrogen production currently limits its large-scale deployment. Future projects will depend on economic feasibility and regulatory frameworks.

- Discussions emphasised the importance of Norway's hydropower in ensuring energy security for the region and the challenges of balancing market dynamics with national energy policy goals. The Working Group gained valuable insights into how Norway integrates resilience, sustainability, and market-based principles in its energy strategy.

3) Meeting with the Royal Norwegian Navy

During the visit to the Royal Norwegian Navy, Commander Senior Grade Preben Ottesen provided insights into maritime security operations in the North and Baltic Seas, focusing on the protection of undersea infrastructure. The discussion addressed the growing security threats posed by Russian and Chinese vessels, which are actively monitoring gas pipelines, communication cables, and offshore energy installations. The Nord Stream sabotage in 2022 highlighted the vulnerabilities of critical energy infrastructure and underscored the urgent need for enhanced surveillance and response capabilities.

Key Takeaways

- Increased Naval Presence for Deterrence: Since the Nord Stream attacks, the Norwegian Navy has increased its patrols around key offshore energy installations to reassure energy workers and deter potential sabotage. While 24/7 monitoring is no longer in place, strategic presence and rapid response capabilities have been reinforced.

- Surveillance of Russian and Chinese Activities: Norwegian forces actively monitor Russian military and state-controlled research vessels, which frequently operate near critical infrastructure. Additionally, there is rising concern over Chinese ships, as recent incidents suggest their involvement in seafloor mapping and potential espionage.

- Challenges in International Waters: Under current international maritime law, no legal framework exists to intervene preemptively against suspicious activities in international waters. The lack of NATO-wide coordination further complicates the situation, as most responses are managed at the national level.

- Maritime Security Network and Intel Sharing: The Navy collaborates with NATO allies, civilian industry partners, and security agencies to strengthen information-sharing mechanisms. This includes joint vessel monitoring, surveys of undersea cables, and real-time intelligence exchange with offshore infrastructure operators.

- Need for Stronger Policy Coordination: The discussion emphasised the necessity of developing a coordinated international approach to maritime security threats, particularly through closer cooperation between naval forces, governments, and industry stakeholders.

4) Session on the Russian "Shadow Fleet"

The Working Group discussed the growing presence of Russian "shadow fleet" oil tankers in the Baltic Sea, focusing on their legal, environmental, and security implications. Professor Henrik Ringbom and Dr Alexander Lott provided detailed insights into the challenges posed by these unregulated vessels, which frequently change ownership and flags to evade sanctions on Russian oil exports.

Legal and Security Challenges

Professor Ringbom outlined how these vessels exploit legal loopholes in international maritime law, operating under flags of convenience with minimal oversight. He emphasised that the lack of clear enforcement mechanisms prevents effective action against them. Alexander Lott noted that while the EU has introduced stricter regulations, enforcement remains problematic due to flag-state reluctance and jurisdictional limitations in international waters.

- The 1857 Copenhagen Convention, guaranteeing freedom of navigation in the Danish Straits, was cited as a legal barrier to imposing stricter controls on shadow fleet vessels.

- The frequent renaming and re-registration of these ships make it difficult to enforce sanctions and track ownership structures.

- Several Baltic Sea states are exploring coordinated responses, but a lack of harmonized legal frameworks complicates enforcement efforts.

Environmental and Operational Risks

The aging condition of many shadow fleet vessels raises serious environmental and navigational safety concerns. Professor Ringbom warned that these ships often operate with outdated safety systems, posing a high risk of oil spills.

- Many tankers disable their Automatic Identification System (AIS), making collisions and illegal discharges harder to detect.

- The Baltic Sea's fragile ecosystem is particularly vulnerable to spills or chemical discharges from poorly maintained vessels.

- Alexander Lott highlighted the absence of liability mechanisms, meaning that any environmental damage caused by these ships could go unpunished.

Maritime Security and Intelligence Risks

Alexander Lott raised concerns that some shadow fleet vessels may be engaged in intelligence gathering, mapping undersea energy and communication infrastructure. Professor Ringbom linked this issue to broader hybrid threats, emphasizing that current international law does not adequately address state-led sabotage in international waters.

- The Nord Stream pipeline sabotage (2022) demonstrated the vulnerability of undersea infrastructure.

- Experts called for stronger surveillance measures to detect and deter potential sabotage activities.

- The Working Group discussed proposals for enhanced cooperation among Baltic Sea states to improve monitoring and legal responses.

Surveying Regional Governments

A significant outcome of the meeting was the decision to launch a survey targeting national and regional governments in the Baltic Sea states. The survey, developed by the BSPC WG ESSRC, seeks to assess:

1. Existing measures for monitoring shadow fleet activities and plans for enhancing maritime surveillance.

2. Legal opinions and procedures in place to address undersea infrastructure sabotage.

3. Gaps in current legal frameworks and potential initiatives for bridging these gaps.

4. The feasibility of establishing regular high-level Council of the Baltic Sea States (CBSS) meetings to address critical infrastructure protection.

The survey aims to foster a coordinated response and will serve as a foundation for discussions at the next working group meeting in March 2025 in Stockholm.

https://www.bspc.net/government-survey-of-the-bspc-wg-november-2024-10-dec-webversion/

Looking Ahead

Chairman Andris Kulbergs closed the meeting by emphasising the urgency of building resilience across the Baltic Sea region. The WG ESSRC will continue addressing these critical challenges, ensuring the Baltic Sea remains a bastion of cooperation and sustainability.

3.5 Meeting on 16-18 March 2025 in Stockholm, Sweden

The fifth meeting of the WG ESSRC took place in Stockholm, Sweden, from 16 to 18 March 2025. It was attended by 30 participants representing parliaments and institutions from the Åland Islands, the Baltic Assembly, Denmark, Estonia, Finland, Germany, Hamburg, Latvia, Lithuania, Mecklenburg-Vorpommern, Norway, Poland, Sweden, and Schleswig-Holstein. The meeting focused on advancing sustainable and resilient land and maritime transport, safeguarding critical infrastructure, enhancing civil preparedness, and fostering interinstitutional cooperation in light of increasing geopolitical instability in the Baltic Sea region. The main conclusions of the meeting are summarised in this subchapter; however, more detailed information can be found in the notes of the meeting.

The PowerPoint presentations used at the meeting are linked (in bold under blue font) in the article about the meeting on the BSPC website and can be downloaded from the link below:

https://www.bspc.net/developing-sustainable-and-resilient-transport-and-energy-solutions-in-the-baltic-sea-region/

Chairman of the Working Group, Andris Kulbergs, opened the meeting by underlining the urgency of closer coordination in view of the deteriorating security environment and repeated hybrid threats in the Baltic Sea. He reaffirmed the Working Group's commitment to strengthening democratic resilience and upholding the rule of law and freedom of expression.

Sustainable Transport Solutions and Technological Innovation

The Working Group visited the KTH Royal Institute of Technology and received an introduction to the university's research profile. Professor Jonas Åkerman presented key findings of the "Sustainable Transport 2035" study, emphasising that short-distance land transport is rapidly shifting to electrification, while sea and air transport remain hard to decarbonise due to technical and cost barriers. He called for greater policy effort to manage demand and eliminate tax exemptions for fossil-based air travel.

Professor Henrik Ernstson highlighted the ecological and geopolitical implications of dredging operations in Baltic ports, urging a more integrated understanding of industrial expansion, environmental degradation, and infrastructure development in light of NATO's strategic expansion.

Professor Lina Bertling Tjernberg outlined how power grids must evolve to support the energy transition, combining local renewable generation, green hydrogen production, and potentially small modular nuclear reactors. She noted that resilient and decentralised grid architecture is crucial for regional self-sufficiency and crisis resistance.

Electric Maritime Mobility and the Role of Industry

During a site visit to the electric boat company Candela, CEO Gustav Hasselskog introduced the development of hydrofoil-based, high-speed electric vessels. The P-12 shuttle, currently operating on Stockholm's commuter Route 89, offers 90% energy savings and a 97% reduction in carbon emissions per passenger kilometre. Hasselskog criticised the lack of EU regulatory incentives for non-fossil maritime transport, pointing out that maritime diesel is still tax-privileged compared to electricity. He called for reforms in procurement frameworks to enable broader deployment of clean waterborne mobility.

The visit also underlined the regulatory challenges facing small electric vessels in Europe and the lack of technology-neutral public procurement rules in maritime transport. Participants discussed the potential of electric waterborne mobility for peripheral communities around the Baltic Sea and the strategic relevance of regional manufacturing capacities.

Protection of Critical Infrastructure and Maritime Security

Professor Hans Liwång of the Swedish Defence University and KTH warned that resilience in the underwater domain of the Baltic Sea is hampered by poor situational awareness, limited sensor reach, and fragmented communication between infrastructure operators and national authorities. He called for a generative culture of civil-military cooperation and emphasised that infrastructure diversity is key to countering coordinated attacks. He supported the idea of establishing a Baltic Sea Maritime Security Coordination Centre (BSMSCC) but cautioned that better baseline data and actionable information from the sea are prerequisites for its effectiveness.

He argued that resilience depends not only on technical capabilities but on deeper societal preparedness and mutual trust between sectors. A key challenge remains the current legal ambiguity in reacting to hybrid threats in international waters, which was discussed extensively during the meeting.

Fredrik Gustavsson, Deputy Head of Security at Svenska kraftnät, detailed Sweden's efforts to protect the national electricity transmission system from cyberattacks, physical sabotage, and supply chain disruptions. He reported increased cooperation with the Swedish Navy and Coast Guard and called for redundancy and multi-operator diversity in cross-border energy links. He also announced the formation of a civil defence repair force to support infrastructure restoration in crisis scenarios.

Rebecka Bergholtz of the Swedish Energy Agency presented national long-term energy scenarios. All variants show sharp declines in fossil fuel use and rising electricity demand. Electrification of transport and heating, expansion of land-based wind power, and extended nuclear plant lifespans are central. She emphasised that resilience must be built into the energy transition by combining flexibility, redundancy, and decentralised systems. She also warned of declining investment confidence due to perceived political risks around hydrogen infrastructure and energy system planning.

She further stressed that resilience planning must account for wartime conditions, including prioritisation of critical energy users, secure communication infrastructure, and civil-military coordination. The energy transition must be designed in a way that strengthens—not undermines—national defence capabilities.

Cooperation with Baltic Sea Institutions

Gustav Lindström, Director General of the Council of the Baltic Sea States (CBSS), outlined current priorities of the CBSS in the areas of regional identity, security, and sustainability. He presented the ongoing strategic review led by Toomas Hendrik Ilves and Gabrielius Landsbergis, which is expected to include recommendations on deepening security-related cooperation.

He underlined the importance of stronger involvement of regional actors in EU infrastructure and resilience strategies. Multilevel governance and cross-border cooperation were cited as indispensable for facing the emerging risks in the Baltic Sea.

Tomas Mörtsell, President of the Conference of Peripheral and Maritime Regions (CPMR) Baltic Sea Commission, presented the Commission's vision for a connected, climate-resilient, and competitive Baltic Sea region. He called for EU cohesion policy to be better tailored to regional realities and for the reinforcement of critical undersea infrastructure as part of the EU Port Strategy and Ocean Pact.

Summary of the key points from the Expert Presentations

- Transport: Electrification is progressing in land transport, but maritime and aviation sectors remain difficult to decarbonise. Regulatory reform and demand-side management are essential.

- Maritime innovation: Electric hydrofoil ferries offer transformative potential for sustainable waterborne transport, but EU policy lags behind technological advances.

- Infrastructure resilience: Interconnected, diversified, and decentralised energy systems are critical to countering hybrid threats. Greater data sharing and civil-military coordination are needed.

- Cyber and physical threats: TSOs and operators face persistent cyberattacks and physical risks. Civil preparedness measures, including strategic reserves and rapid repair capabilities, are being developed.

- Strategic interconnectivity: Investment in grid redundancy and cross-border interconnections must accelerate to avoid single-point failures.

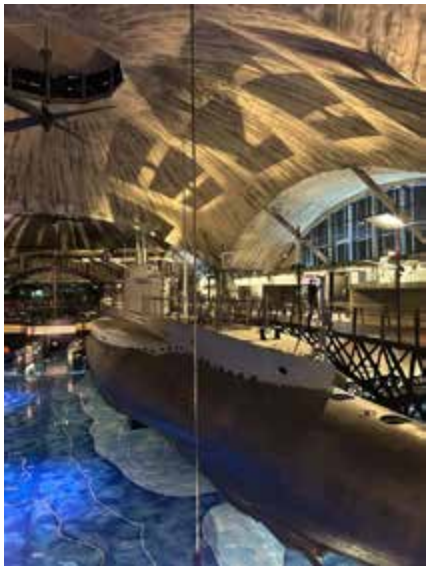
- Governance: Regional and multilevel governance institutions (CBSS, CPMR) should be empowered to promote cooperative responses to infrastructure security and energy transition challenges.

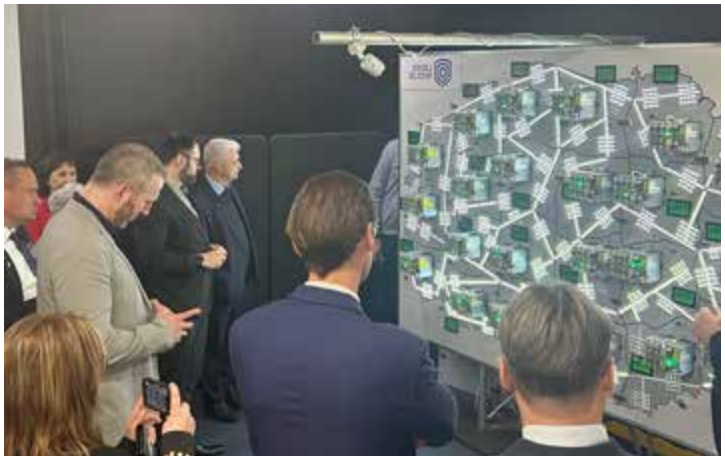
- Legal frameworks: Participants stressed the need to clarify and modernise international maritime law to enable effective preventive action against hybrid threats and protect undersea infrastructure.

- Societal resilience: Experts and delegates underlined the role of civil society and local actors in contributing to security and preparedness. Engaging municipalities and infrastructure operators in strategic planning is essential.

The Working Group agreed on a set of five draft recommendations covering maritime domain awareness, hybrid threat response, action against the Russian shadow fleet, infrastructure resilience, and NATO-EU coordination.

3.6 Meeting on 18-20 May 2025 in Tallinn, Estonia





The sixth and concluding meeting of the BSPC WG ESSRC was held from 18 to 20 May 2025 in Tallinn, Estonia. Over 30 participants from Åland, the Baltic Assembly, Estonia, Finland, Germany, Hamburg, Latvia, Lithuania, Mecklenburg-Vorpommern, Norway, Poland, Sweden and Schleswig-Holstein convened to examine regional strategies for maritime and cyber resilience, secure digital infrastructure, and energy system preparedness. The meeting featured high-level expert contributions and study visits to key national and NATO institutions in Estonia.

Operation of the shadow fleet and the geopolitical implications

The meeting opened with a visit to the Seaplane Harbour, where security expert Raivo Vare outlined the current economic and military situation in the Russian Federation. He highlighted that Russia continues to finance its war through revenues from commodities, supported by the operations of the shadow fleet, including ageing and underinsured tankers in the Gulf of Finland. This poses significant security, legal, and environmental challenges to the Baltic Sea region.

Digital Governance and Cyber Resilience

The Working Group then visited the e-Estonia Briefing Centre, where Digital Transformation Adviser Johanna-Kadri Kuusk presented Estonia's model of decentralised digital governance. Estonia's digital services are now almost entirely automated and accessible online. The national electronic ID system and the X-Road platform facilitate secure data exchange and empower citizens. Estonia also hosts leading cybersecurity institutions and exercises, including the NATO Cooperative Cyber Defence Centre of Excellence (CCDCOE) and the "Locked Shields" cyber defence simulation, which was described in detail by Ms Angelica Tikk, Head of International Relations at the CCDCOE. Estonia's experience underlines the close interlinkage between public trust, cybersecurity, and digital service resilience.

Cyber Defence Architecture and Capabilities

A key theme of the meeting was maritime infrastructure protection. During a visit to the Estonian Navy, Deputy Commander Johan-Elias Seljamaa described the challenges of securing the maritime domain and critical underwater infrastructure. He reported that Estonia's undersea electricity cable EstLink 1 had recently been damaged by a commercial vessel, leading to a prolonged monitoring operation. Over 5,600 ships were visually inspected, and more than 4,000 were identified, illustrating the scale of monitoring efforts required. A new NATO operation, "Baltic Sentry", was launched in response to these incidents.

Cyber Range Technology and Simulation

At the cyber defence and training centre CR14, the delegation was introduced to Estonia's cyber range infrastructure by Mr Martin Hanson. The cyber range supports exercises and scenario simulations in defence, industry, and critical infrastructure protection – including domains such as space technology and AI-enabled attacks. Dr Tarmo Korõtko of Tallinn University of Technology explained how resilience engineering and digital twin technologies could enable earlier detection of adverse conditions, simulate cascading failures, and improve crisis management across electricity and heat systems. The main conclusions of the meeting are summarised in this subchapter; however, more detailed information can be found in the notes of the meeting.

Protection of Maritime Infrastructure, and Domain Awareness

Mr Johan-Elias Seljamaa, Estonian Navy discussed the complexity of maritime surveillance in the Baltic Sea, described Estonia's patrolling of the EstLink 1 cable, and outlined the functions and challenges facing the Estonian Navy in maritime domain protection and international legal enforcement.

Resilience of Critical Infrastructure and Legal Coordination

At the International Centre for Defence and Security (ICDS), several speakers analysed the legal and strategic shortcomings in protecting undersea infrastructure. Dr Tomas Jermalavičius and Mr Henrik Praks pointed out that hybrid attacks in the Baltic Sea remain difficult to attribute and respond to, partly due to legal gaps in United Nations Convention on the Law of the Sea (UNCLOS) and inconsistent national practices. They called for a regional harmonisation task force and stronger legal interoperability. A Baltic Sea code of practice and resilience fund were proposed as concrete steps to close the implementation gap.

International Legal Framework and Strategic Coordination

Kristi Land, Director General at the Estonian Foreign Ministry's Legal Department, added that while amending UNCLOS was unrealistic, Baltic Sea states could pursue joint legal interpretations, develop a non-binding regional framework for behaviour at sea, and reform national laws to enable stronger enforcement. Estonia has already updated its legislation to give the navy more powers and criminalise infrastructure sabotage. Participants agreed that a regional initiative was needed to support joint surveillance, early warning, and shared maritime security protocols.

Resilience of Electricity Grids after Synchronisation

Further discussion focused on electricity grid synchronisation and market resilience. Mr Andrus Durejko, CEO of Eesti Energia, reported on the challenges following the February 2025 synchronisation of the Baltic States with the continental European grid. While the technical transition was successful, Estonia is now experiencing high system balancing costs due to a lack of dispatchable generation and insufficient frequency reserves. Balancing prices have increased significantly, leading to higher electricity prices for consumers. Estonia's system currently depends on fossil-based reserves and test-scale batteries. There is an urgent need for new fast-reacting, gas-based generation and more grid-friendly market structures.

Wartime Energy Resilience and Lessons from Ukraine

Permanent Secretary of the Estonian Ministry of Defence, Mr Kaimo Kuusk, delivered a vivid account of how fuel shortages and air attacks on Ukrainian energy infrastructure exposed systemic weaknesses during wartime. He underlined the importance of grid redundancy, regional interconnections, and protected infrastructure. Investments in resilience – from shelters to stockpiles – must be made before a crisis occurs. His message was clear: prepare early, or pay dearly later.

The presentations of the meeting are available here (in bold under blue font):

https://www.bspc.net/news/enhancing-maritime-cybersecurity-and-energy-grid-resilience-in-the-baltic-sea-region

Summary of the key points from the Expert Presentations

- **Shadow fleet and maritime security:** Russian shadow fleet activity poses persistent legal, environmental, and security threats. Surveillance and legal coordination are still insufficient.

- **Digitalisation and cybersecurity:** Estonia's model shows the potential of decentralised, citizen-centric governance with strong cybersecurity backing. Interoperable digital infrastructure is key.

- **Maritime domain awareness:** Constant monitoring and clear legal mandates are essential to deter sabotage. Existing patrol and identification systems must be scaled and coordinated regionally.

- **International legal frameworks:** While UNCLOS amendment is not feasible, coordinated interpretations and harmonised national laws can bridge legal gaps in responding to hybrid threats.

- **Electricity market resilience:** Grid synchronisation has created new balancing costs and market instabilities. Dispatchable generation and frequency containment assets are urgently needed.

- **Cyber defence readiness:** NATO and Estonian cyber defence initiatives (e.g. Locked Shields) show the value of regular, scenario-based cyber exercises and private-public-military cooperation.

- **AI and system resilience:** Digital twins, scenario simulations and AI-enhanced early detection are promising tools for improving infrastructure resilience.

- **Lessons from Ukraine:** Robust civil protection infrastructure, rapid repair capability, and interconnection with allies are essential to withstand energy warfare.

- **Policy recommendation:** Governments should establish legal frameworks and mandates for testing, invest in scalable monitoring, and synchronise their maritime and energy resilience efforts.

During the final meeting, the WG also held an in-depth discussion of the proposed Calls for Action to the governments to be included in this year's Baltic Sea Parliamentary Conference Resolution. The group unanimously endorsed the recommendations as presented in this final report.

In conclusion, Chairman Andris Kulbergs thanked all delegates, experts, and the secretariat for their sustained commitment. Reflecting on the significant achievements in the recent past, he emphasised the urgency posed by cyber threats and highlighted the necessity for swift, coordinated governmental action. He summarised the Tallinn meeting as a final call to action. He stressed that the tools for coordination already exist but require stronger political will, harmonised national legislation, and synchronised implementation. A shared roadmap, regional legal interoperability, and increased maritime domain awareness must now follow.

Outlook

The Tallinn meeting marked the conclusion of the BSPC Working Group's series of sessions across the region. Chairman Kulbergs reiterated that energy, digital, and transport systems must be made resilient against physical, hybrid and cyber threats. He called for a comprehensive regional strategy, closely coordinated with national efforts and embedded in EU and NATO legal frameworks. The Working Group resolved to finalise its work and to present its conclusions and recommendations to the 34th Baltic Sea Parliamentary Conference in Mariehamn in August 2025.

4. Political Recommendations

4.1 Recommendations of the BSPC Working Group to the 33rd BSPC Resolution

Based on the expert presentations, discussions and results of the first two meetings mentioned before, the BSPC Working Group developed and discussed in its meeting in Greifswald on 28 May 2024 and an additional digital meeting on 3 June 2024 the following political recommendations and unanimously agreed to propose including them in the 33rd BSPC resolution; the input to its third meeting in Greifswald was discussed and considered for the final report of the working group and the 34th resolution:

Regarding energy security and self-sustainability to

- given the current geopolitical challenges, prioritise and support projects aimed at improving energy security in the Baltic Sea region;
- while building new or transforming the already existing energy infrastructure, take strongly into account the regional needs, resilience considerations, and sustainability goals;
- facilitate more interconnections in the Baltic Sea region;
- unite in a regional political initiative for common interconnections and strongly involve the EU Funds in order to succeed in the development of a regional renewable energy market;
- regularly exchange experience and best practices concerning the implementation of onshore and offshore wind projects in the Baltic Sea region;

Regarding resilience and interconnectivity to

Defence

- agree on a coordinated approach to address the lack of information exchange, threat control centres, threat mitigation policy as well as effective communication against the spread of targeted fake news and propaganda, considering multiple recent and potential hybrid threats towards critical energy and communication infrastructure in the Baltic Sea region;

- commit to realising the potential of the Baltic Sea region to become an integrated NATO defence area with strong regional cooperation in coastal, maritime, and air defence;

- pay particular attention to raising situational awareness and increasing societal resilience to respond to hybrid threats in the Baltic Sea region;

Transport

- increase the funding for improving infrastructure and start discussions on a new strategy to enhance military mobility capabilities and civil transport in the region;

- develop and execute plans to further improve maritime and railway transport connectivity in the Baltic Sea region;

- significantly improve coordination of activities and regular cooperation of the democratic Baltic Sea countries in protecting maritime infrastructure in the Baltic Sea region;

- create a plan for addressing shipping insurance challenges in the region that can disrupt trade routes, leading to delays and increased costs for businesses;

Digital connectivity

- commence negotiations between the democratic Baltic Sea countries on enhancing cooperation in the area of cybersecurity;

- develop incentives and support for strengthening underwater communication infrastructure in the Baltic Sea, including expanding connections and ensuring the resilience of the existing ones;

- cooperate and exchange practices on increasing universal coverage and service for Internet connectivity in the Baltic Sea region;

Cross-border projects

- raise awareness and search for solutions to facilitate the implementation of large-scale cross-border projects of regional importance;

- coordinate cooperation to rapidly stimulate the installation of needed computing capacity in the Baltic Sea region, in light of the rapid development of AI software and services demanding green and sufficient energy as well as abundant computing power; in this regard, the Baltic Sea renewable energy market growth and interconnectivity development are to serve as a basis for supercomputer implementation and usage.

4.2 Recommendations of the BSPC Working Group to the 34th BSPC Resolution

1. Develop a comprehensive, well-coordinated strategy:

- Further develop a detailed, region-wide strategic framework to enhance the resilience of energy supplies, transportation and communications networks. This strategy should integrate threat-specific resilience planning and align with both national initiatives and existing EU/NATO frameworks for protecting critical infrastructure in the Baltic Sea region.

2. Centralise responsibilities across the Baltic Sea region:

- Promote a centralised coordination mechanism within the Baltic Sea region to address maritime threats proactively. This mechanism would focus on early threat detection, rapid response, and prevention of criminal activities, drawing on existing cross-national cooperation frameworks and aiming for alignment with NATO initiatives.

3. Establish a standing Baltic Naval Force:

- Encourage actions regarding a collaborative maritime security unit, modelled after successful NATO and EU initiatives, to protect vital sea lines of communication. This unit would operate with member states' naval contributions and focus on safeguarding critical maritime routes.

4. Digital Real-Time Connectivity - Jointly fund and sustain open-source technology:

- Initiate a funding initiative focused on securing and advancing open-source digital infrastructure essential to the Baltic Sea region's connectivity and resilience. This could include setting up a regional fund to sustain and protect shared digital tools critical to maintaining cybersecurity and information integrity.

5. Strengthening Maritime Domain Awareness in the Baltic Sea

- Establish a permanent Baltic Sea Maritime Security Coordination Centre (BSMSCC) to enhance situational awareness, coordinate intelligence-sharing, and improve the monitoring of hybrid threats.

- Advocate for real-time data-sharing agreements between Baltic Sea states, linking naval forces, coast guards, and infrastructure operators.

- Develop and use automated monitoring systems, including satellite surveillance, AI-powered anomaly detection, and sonar-based detection of underwater activities.

6. Framework for Preventing and Responding to Hybrid Attacks on Critical Infrastructure

- Establish a common legal framework among democratic Baltic Sea states to criminalise intentional disruptions to critical subsea infrastructure, ensuring sanctions and legal accountability.

- Develop a joint operational protocol for responding to sabotage and hybrid attacks, including military, law enforcement, and emergency response coordination.

- Advocate for a Baltic Sea Rapid Response Mechanism (BSRRM) to ensure that joint naval and coast guard teams can react to suspected sabotage within hours.

7. Coordinated Action Against the Russian and other Shadow Fleets

- Expand the EU sanctions list to include logistics providers, insurers, and flag states facilitating Russian and other shadow fleet operations.
- Require port inspections and tracking of Russian-linked tankers to ensure full transparency of cargo and destinations.
- Establish a Baltic Sea' No-Go Zone' for uninsured tankers to mitigate environmental and security risks.
- Develop a joint Baltic Sea position with IMO and EU institutions to create legal pathways for enforcing sanctions in international waters.

8. Resilience and Redundancy of Energy and Communication Networks

- Establish a Baltic Sea Critical Infrastructure Resilience Fund, co-financed by EU and regional governments, to upgrade energy and communication networks.
- Invest in strengthening fibre-optic and power grid interconnections between democratic Baltic Sea states.
- Strengthen cyber resilience and intrusion detection systems for all undersea infrastructure.

9. Strengthening NATO and EU Coordination on Baltic Sea Security

- Support and reinforce NATO's existing maritime security operations in the Baltic Sea, including Operation Baltic Sentry and the Commander Task Force Baltic (CTF Baltic) Headquarters in Rostock, to ensure the continued protection of undersea infrastructure and trade routes.
- Advocate for the institutionalisation of a long-term NATO maritime security mission in the Baltic Sea, building upon existing frameworks to create a structured and permanent regional security presence focused on deterring hybrid threats.

- Enhance EU-NATO cooperation by integrating NATO maritime security efforts with:
    - The EU's Permanent Structured Cooperation (PESCO) projects on maritime security.
    - The European Maritime Safety Agency's (EMSA) initiatives to strengthen surveillance and response to hybrid threats.
    - The EU's Connecting Europe Facility (CEF) and European Defence Fund (EDF) to improve energy and communication infrastructure resilience.
- Expand joint NATO-EU exercises, with a specific focus on protecting offshore wind farms, pipelines, undersea cables, and critical coastal infrastructure, ensuring the integration of hybrid threat scenarios in regional military planning.
- Strengthen political and parliamentary engagement by ensuring parliamentary participation in NATO and EU security discussions related to maritime security, hybrid threats, and critical infrastructure protection.
- Ensure BSPC participation in relevant NATO and EU security discussions.

10. Research in the field of sustainability, energy and transport innovation

Continue support for research in long-term energy solutions and innovative maritime mobility.

11. Establishment of Regional Repair Capabilities for Critical Maritime Infrastructure (WG)

- Develop a coordinated Baltic Sea mechanism to repair damaged undersea infrastructure rapidly.
- Provide shared storage of essential spare parts and tools, and deploy multipurpose repair vessels.
- Ensure joint contingency protocols and shared technical standards for cross-border interventions.

12. Creation of a Baltic Sea Infrastructure Resilience Forum for Cross-Sectoral Exchange (WG)

- Establish a standing Baltic Sea Infrastructure Resilience Forum to bring together public authorities, private operators, research institutions, and civil protection actors.
- Facilitate best-practice exchange on infrastructure resilience and emergency risk management across sectors.
- Include regular simulation-based training for resilience to hybrid and climate-induced disruptions.

13. Development of a Baltic Sea Cyber Crisis Simulation Framework (WG)

- Establish a recurring, multinational cyber crisis simulation framework focused on critical maritime infrastructure in the Baltic Sea Region.
- Engage public institutions (defence, energy, coast guard) and private stakeholders (grid operators, maritime companies).
- Utilise digital twins and scenario planning tools to create joint standard operating procedures.

14. Promotion of Multi-Use Design Standards for Critical Infrastructure (WG)

- Introduce Baltic-wide technical guidelines and planning incentives for the multi-use design of infrastructure assets.
- Promote cross-functionality of infrastructure (e.g., fibre-optic + power cables, transport + data corridors).
- Incentivise public-private innovation projects on dual-purpose infrastructure.

15. Enhancing Digital Resilience in Rural and Peripheral Areas of the Baltic Sea Region (WG)

- Launch dedicated EU and national programmes to upgrade digital infrastructure in rural and island regions.

- Expand secure satellite and underwater connectivity (e.g. LoRaWAN, redundant cabling, 5G/6G backbones).

- Prioritise the implementation of the CISE platform in peripheries and promote transnational connectivity resilience.

16. Integration of Environmental Risk into Maritime Security Strategy (WG)

- Mandate environmental risk assessments (e.g. oil spills, dredging impact, noise) as part of Baltic Sea maritime security planning.

- Incorporate environmental risk indicators into hybrid threat monitoring.

- Promote the development of dual-use detection technologies for both environmental and security incidents.

5. Intergovernmental Survey

5.1 Responses to the BSPC Working Group survey about the areas of interest for the respective parliamentarians

In Spring 2024, the BSPC Working Group sent out a survey with several questions about the areas of interest for the respective parliamentarians. The summary of the answers received until June 2024 is compiled in this chapter. The answers in full are available on the BSPC homepage under the link:

https://www.bspc.net/government-statements-on-energy-security-in-the-democratic-baltic-sea-region/

1) What are the national and regional long-term energy consumption projections and energy production plans?

Country	Answer
Estonia	Estonia will analyse the system requirements and launch a call in order to contract 150-400 MW of dispatchable energy for the balancing reserve by 2028. From the beginning of 2025, Estonia will open additional capacity markets for balancing reserves and aFRR (automatic Frequency Restoration Reserve) and FCR (Frequency Containment Reserve) energy markets (this need is due to the desynchronisation from BRELL and synchronization to the Continental-Europe network). As the Baltics forms one load-frequency containment block (LFC block), the reserve need will be addressed and kept jointly in the Baltic area.
Finland	The latest energy projections are being modelled in a project that will end in June 2024. They are based on existing policy measures as additional measures are still being prepared for modelling work.
Germany	By 2030, at least 80 % of gross electricity consumption in Germany is to come from renewable energies. The expansion paths for wind and solar energy will be significantly increased: The expansion target for offshore wind energy will increase to at least 30 gigawatts (GW) by 2030, to at least 40 GW by 2035 and to at least 70 GW by 2045. For onshore wind energy, 10 GW of installed capacity is to be added each year to reach a total of 115 GW by 2030 and 160 GW from 2040, and 22 GW per year for solar installations to reach a total of around 215 GW by 2030 and 400 GW by 2040.
Hamburg	Hamburg's total energy consumption is set to decrease gradually until 2045 by about 25.6 % from 50.8 TWh per annum in 2020. Fossil fuel consumption, most notably conventional gas as well as petrol and diesel, is projected to decrease to nearly zero in 2045, with part of that reduction achieved through efficiency gains and another part through a shift to renewable or carbon-free energy sources. The energy shift will lead to a rise in electricity consumption, set to be decarbonised nationwide by 2035, district heating, biomass, hydrogen for industry and heavy-duty transport as well as e-fuels. In absolute terms, the largest increases are expected in hydrogen and e-fuel consumption.

Country	Answer
Latvia	Regarding plans for energy production, the long-term development plan of the joint-stock company "Latvenergo" envisages the installation of renewable energy resources generating a capacity of 600 MW by 2026 and 2300 MW by 2030. At the same time, work is being done on strengthening the infrastructure (reinforcing the capacity of the electricity transmission and distribution network, construction of interconnections).
Lithuania	The National Energy Independence Strategy 2050 (NEIS 2050) foresees that Lithuania will become a self-sufficient energy country by 2050 with a climate-neutral energy industry that generates significant added value. Most of Lithuania's consumed energy will be generated by onshore and offshore wind and solar power plants. Electricity will become the main primary energy source in the overall energy system and is expected to be used to a large extent in other sectors. Final energy demand for all users is projected at 88 TWh in 2030, 81 TWh in 2040, and 75 TWh in 2050. Electricity generation is estimated at 25 TWh in 2030, 54 TWh in 2040, and 74 TWh in 2050. The share of RES will be 55 % in 2030, 85 % in 2040, and 95 % in 2050.
Mecklenburg-Vorpommern	Primary energy consumption (PEC) in Germany is currently around 13,200 PJ (petajoules) per year. The forecast for 2030 is around 11,100 PJ and around 9,700 PJ for 2040. The PEC in Mecklenburg-Vorpommern is around 170 PJ per year. Different forecasts for the years starting from 2030 fluctuate at +/- 15 to 20 %.
Sweden	The government sees increased electrification of society as necessary and believes at present that Sweden should plan to be in a position to meet electricity requirements of at least 300 TWh in 2045 (proposal in the government's energy bill of 2024). In the Swedish Energy Agency's scenario Högre elektrifiering ("Higher Electrification") up to 2050, with 2045 as an interim year, electricity use is expected to amount to more than 300 TWh in 2045 and approximately 350 TWh in 2050. The total energy supply in 2050 is expected to be 470–643 TWh depending on the scenario, compared with 509 TWh in 2020.
Schleswig-Holstein	The government of Schleswig-Holstein generally supports these goals und has no quantitative goals of their own in the field of energy efficiency. In the field of energy production, Schleswig-Holstein pursues the following goals: 1) expansion of electricity generation from renewable energies to at least 40-45 TWh until 2030. This means that the electricity generation from renewable energies will be three times higher than the current electricity consumption in Schleswig-Holstein; 2) reaching 37-50 % as the share of heat from renewable energy sources in the final energy consumption as heat.

2) What are the plans of the governments regarding developing new energy interconnections?

Country	Answer
Estonia	New EE-FI interconnection in 2035->Estlink3 with the capacity of 700 MW. New EE-LV connection EstLat4 by 2033 with the capacity of 1000 MW, and as it will cross our biggest island, Saaremaa, this enables offshore wind parks to better connect to the grid.
Finland	Finnish electricity transmission system operator (TSO) Fingrid published in autumn 2023 its main grid development plan for 2024-2033. A new interconnection from Northern Finland to Northern Sweden (Aurora line 1) is under construction and will be completed in 2025. A new cross-border line to Sweden, known as Aurora Line 2, is also planned for 2032. Fingrid and Elering are currently initiating a study to gain greater insight into the profitability and timing of the EstLink 3 connection. There are no plans for cross-border gas pipelines.

Country	Answer
Germany	Interconnectors that are currently in the planning or construction phase include: Klixbüll–Endrup (with Denmark), Bornholm Energy Island (with Denmark), North Sea Wind Power Hub (with Denmark and Netherlands), Emden/Ost-Eemshaven (with Netherlands), Altheim–St Peter/Pleinting–St Peter (with Austria), Neu-Ravensburg–Österreich (with Austria), Vöhringen–Westtirol (with Austria), Dahlem–Gramme (Belgium), Aach–Bofferdange (with Luxembourg), Eichstetten–Muhlbach (with France), Uchtelfangen-Ensdorf-Vigy (with France), Hansa Power Bridge I + II (with Sweden), Eisenhüttenstadt-Baczyna (with Poland), NeuConnect (with UK), Waldshut-Tiengen-Beznau (with Switzerland), Böblingen–Mettlen (with Switzerland).
Hamburg	Hamburg is well integrated into the national grids for power and natural gas. Hamburg strongly supports a new hydrogen connection to Denmark (Hyperlink III). The realisation depends on the national plan for grid development, which will be completed within a few years.
Latvia	The development of the following interconnections is planned by the Latvian government: 1) The Tsirgulin (EE)–Valmiera (LV) 330kV interconnection project is being implemented and will be completed in 2025; 2) Work continues on the Baltic offshore grid initiative (BOGI), promoting the development of offshore wind farms. The following projects are planned to be developed within BOGI: 3) The Latvian-Swedish interconnection (LaSGo Link) is being developed to increase grid capacity to Gotland; 4) The fourth Estonian-Latvian interconnection (ELWIND), a joint Estonian-Latvian state-run cross-border offshore wind project; 5) Baltic-German interconnection (BalticWind Connector).
Lithuania	Lithuania continues working on a cross-border electricity interconnection capacity increase between Lithuania and Poland. The current Lithuanian-Polish interconnector "LitPol Link" ensures a 500-MW transmission capacity. The previously planned new 700 MW Lithuanian-Polish undersea interconnection "Harmony link" is currently undergoing a new examination by Lithuanian and Polish TSOs. The possibility of increasing the current Lithuanian-Latvian 950-MW cross-border electricity transmission capacity is being evaluated by Lithuanian and Latvian TSOs. Lithuania will evaluate the possibility of the development of additional electricity interconnections with Central Europe.
Mecklenburg-Vorpommern	Bornholm Energy Island: On the Danish Island of Bornholm in the Baltic Sea, at least 3 GW of offshore wind power generation capacity is to be connected on Danish territory by the early 2030s. The electricity is then to be transported to Germany (2 GW) and the Danish mainland (1.2 GW) via new grid connections. In addition, the national network development plans are instruments of German energy policy planning the long-term development of the network infrastructure for electricity, gas, and hydrogen.
Sweden	The Swedish electricity network is closely physically connected not only to the electricity networks in other Nordic countries but also has electricity connections with Germany, Poland, and the Baltic countries. However, the Government wants there to be a pause in the expansion of exposed electricity cables (for example Hans Powerbridge) until the price differences between price areas in Sweden have considerably decreased.
Schleswig-Holstein	380kV-high voltage power line Klixbüll–Endrup: The new interconnector is being built between Klixbüll (North of Schleswig-Holstein) and Endrup (Jutland/Denmark); planned start of operation: Q1/2025; West Coast Line: new interconnector to Germany (energinet.dk)

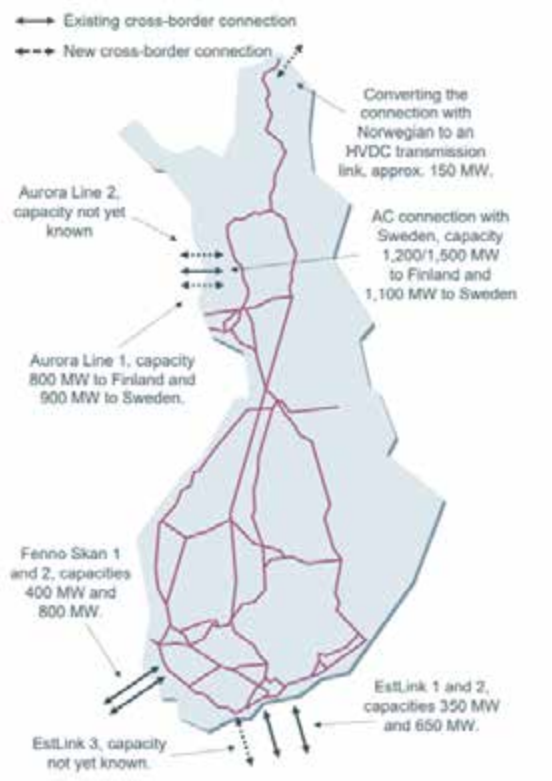
3) How does your country or region plan to ensure the balancing of power systems in the long term? What are the plans for balancing renewable sources of energy?

Country	Answer
Estonia	From the beginning of 2025, Estonia will open additional capacity markets for balancing reserves and aFRR (automatic Frequency Restoration Reserve) and FCR (Frequency Containment Reserve) energy markets (this need is due to the desynchronization from BRELL and synchronization to Continental-Europe network). As the Baltics forms one load-frequency containment block (LFC block), the reserve need will be addressed and kept jointly in the Baltic area.
Finland	There is a need to develop the flexibility of the electricity system. Flexibility can be increased through flexible generation, demand response, energy storages, and electricity interconnections. Fossil fuel-based condensing power plants in Finland have been shut down (the last coal condensing power plant, Meripori, now serves as a "crises reserve" for the National Emergency Supply Agency). There have been huge investments in onshore wind power. The Ministry of Economic Affairs and Employment will set up a working group to study the issue.
Germany	In order to ensure a secure and cost-effective supply of electricity while at the same time integrating increasing shares of renewable energies into the electricity system, the large market area makes it possible to utilise geographical balancing effects in generation and consumption. The high level of liquidity in the electricity market helps to bring supply and demand together flexibly and efficiently, even with fluctuating electricity generation from renewable energies. As part of the Platform for a Climate-Neutral Electricity System (PKNS), an options paper on the use of flexibility options for balancing the system balance is being developed as a basis for political decision-making.
Hamburg	The main tools for balancing renewable sources of energy are implemented on the national level. The energy company "Hamburger Energiewerke", owned by the City of Hamburg, is acting within this framework. It develops flexibility technologies like flexible power generation or power to heat.
Latvia	Since 1 January 2018, Baltic TSOs have been operating a common model for the balancing of power systems of the three countries. To accommodate this, the common Baltic coordinated balancing area was introduced along with establishing the common Baltic balancing market for exchange of balancing energy in the form of frequency restoration reserves with manual activation (hereinafter mFRR). The existing Baltic balancing model and balancing energy market will be changed once Baltic TSOs will join the common European platform for the exchange of mFRR energy (Manually Activated Reserve Initiative - MARI), planned for July 2024. The main change to the Baltic balancing model when joining MARI platform will be the introduction of separate balance control for each control area (Estonia, Latvia, and Lithuania) and moving to a 15-minute balancing market time unit with respective changes in mFRR energy products as well as processes.
Lithuania	Flexibility needs in the electricity sector will be met by preserving the existing capacity of natural gas power plants, increasing the capacity of the Kruonis Pumped Storage Plant, 1.5-GW battery storage power stations, cross-border electricity interconnections, and more flexible electricity consumption in industry and other sectors. In 2050, electricity storage in Lithuania's energy system will be provided by a 1-GW pumped storage plant and 4 GW of electricity storage facilities. Both types of energy storage will be able to store up to 17.5 GWh of energy.

Country	Answer
Mecklenburg-Vorpommern	A wide variety of technologies is available for balancing renewable energies. In addition to storage in the electricity sector (batteries), renewable electricity can also be transferred to other sectors (sector coupling), for example by using it to generate heat and power electric cars or by converting it into alternative fuels such as hydrogen or methane. The state government is therefore working hard to significantly improve the economic framework conditions for sector coupling technologies. One of its most important goals is to utilise as much of the clean energy generated in the federal state as possible. All of these technologies will (have to) be used in a balanced mix in order to achieve the goals of the energy transition.
Sweden	In order to maintain a high security of supply, a new balancing model is being developed which should remain secure in the future and cover the entire Nordic region. Work is being done within a joint Nordic project, the Nordic Balancing Model (NBM), together with Nordic TSOs (Transmission System Operators). The purpose of the NBM is to provide a balance that will maintain security in future and that will provide for energy transition while at the same time being adapted to common European legislation and the internal market for electricity.
Schleswig-Holstein	Flexibility in the electricity market is essential to balance energy systems in the long term. In addition to electrolysers and battery storage systems, these include flexible power plants. According to a new power plant strategy of the German government, new power plant capacities of up to 4 x 2.5 GW are to be put out to tender as H2-ready gas-fired power plants in the short term. These are to switch completely to hydrogen between 2035 and 2040 from a switchover date to be set in 2032. The current German electricity market design provides too few incentives for the use of flexibility. In addition to the reorganisation of levies and surcharges on electricity, the aim will also be to make electricity prices more flexible and offer appropriate tariffs.

4) What cross-border energy projects are being implemented or are planned to be developed in your country or region?

Country	Answer
Estonia	As per the pan-TSO ten-year network development plan (TYNDP), Estonia is involved in developing the third EE-FI and fourth EE-LV electricity interconnector. In addition, pre-feasibility studies are scheduled for a direct EE-DE maritime cable and for a section of the European Hydrogen Backbone connecting the Nordics to Germany via the Baltic States.

Country	Answer
Finland	
Germany	Current overview of hybrid offshore projects currently being planned, discussed or realised in Germany. The Federal Government supports the development of cross-border projects for the expansion and decarbonisation of district heating and cooling systems. In 2024, an application for funding for the project "Unified Network for Innovative Transition in Energy Decarbonisation of HEATing - UNITED HEAT" was supported as part of the Connecting Europe Facility. The cross-border project aims to connect the district heating networks of the cities of Görlitz (DEU) and Zgorzelec (POL). Further projects are being realised or planned in Strasbourg/Kehl and Frankfurt/Oder/Slubice.
Hamburg	Hamburg aims to become a major hub for the import and use of hydrogen. With the third largest port in Europe, Hamburg is well suited to function as one of the most important distribution centres for green hydrogen and its derivatives in Europe. Additionally, the port of Hamburg is one of the largest industrial areas within Germany and thus hosts numerous energy-intensive companies. Hydrogen landed here would in part also be used here. Against this backdrop, Hamburg will contribute to the national start grid, by building parts of it and connecting various users in the commodity industry. Part of this effort is the development of harbour capacity for the import of hydrogen.
Latvia	The Estonian-Latvian joint hybrid offshore wind project – ELWIND – and the Latvia-Estonia Cross-Border ULP-RES Onshore Wind Park Development – ULP-RES WP – developed by Utilitas Wind SIA (Latvia) and Utilitas Wind OÜ (Estonia) are selected to contribute to cross-border cooperation on renewable energy under the Connecting Europe Facility.

Country	Answer
Lithuania	In 2022, Lithuania and Latvia formed a consortium called the "CCS Baltic Consortium" to create a carbon capture and storage (CCS) value chain in Lithuania and Latvia, which would include the capture of CO2 generated in the industrial sector (cement factories in Lithuania and Latvia) as well as onshore and offshore transportation to permanent storage sites, with operations scheduled to commence in 2030. In May 2024, the European Commission has granted the status of Project of Common Interest (PCI) to this project. The consortium consists of Akmenės cementas AB, KN Energies AB, Larvik Shipping AS, Mitsui O.S.K. Lines Ltd., and SCHWENK Latvija SIA.
Mecklenburg-Vorpommern	The Ministry of Economics, Infrastructure, Tourism, and Labour of Mecklenburg-Vorpommern is participating as a lead partner in the Interreg project titled "Green Industrial Areas" (GIA) as part of the transnational cooperation in the Baltic Sea region. The aim is to develop a transnational certification standard and a toolbox to promote the energy transition in commercial and industrial areas in the Baltic Sea region. The project partners are companies, associations, municipalities, and administrations from Finland, Latvia, Denmark, Poland, Sweden, Lithuania, and Germany. The project is scheduled to run from January 2023 to December 2025.
Sweden	There are two significant hydrogen infrastructure projects run by Nordion Energi and Gasgrid Finland. These concern 1,000 km of cross-border hydrogen infrastructure in the Gulf of Bothnia and creating an open market for hydrogen by 2030 at the latest. The purpose of the Nordic Hydrogen Route is to promote reduced carbon dioxide emissions, support regional green industrialisation, economic development, and the European self-sufficiency of energy by developing a network of pipelines that will effectively transport green energy from producers to consumers in order to ensure their access to an open, reliable, and secure hydrogen market.
Schleswig-Holstein	At present, no additional electricity interconnector projects are being planned in the Baltic Sea to Schleswig-Holstein. New interconnector projects are being planned from Denmark to Germany (region of Mecklenburg-Vorpommern) - (Bornholm Energy Island, Home) and from Sweden to Germany (region of Mecklenburg-Vorpommern) - (Hansa Power Bridge (50hertz.com) Germany intends to build a new hydrogen grid infrastructure. Hyperlink III is a hydrogen grid project that is part of the hydrogen core grid and is being planned from Ellund (DK) to Hamburg via Schleswig-Holstein (hyperlink-gasunie.de).

5) What are the main national and regional objectives regarding hydrogen production and supply?

Country	Answer
Estonia	The national objective is to fulfil European requirements which will lead to at least 1,000 metric tonnes of hydrogen being produced for road transport by 2030. Given the ample technical wind energy potential in Estonia both on- and offshore, the potential for hydrogen production is at around 600,000 tonnes (around 20 TWh of H2) per year that can be deployed according to economic feasibility, safety, environmental, and socioeconomic considerations.
Finland	Finland seeks to achieve a leading position in the European hydrogen economy throughout the value chain. If the market conditions develop favourably, Finland can produce at least 10 % of the EU's emission free hydrogen by 2030. The objectives are to produce clean hydrogen and electric fuels for the needs of Finnish industry, transport and the energy system, modernise the industrial sector, increase high value-added exports, and secure investments in Finland.

Country	Answer
Germany	Hydrogen and its derivatives will be used in particular in non-electrifiable applications in industry, in heavy commercial vehicles, and increasingly in aviation and shipping. In the electricity sector, hydrogen can contribute to the security of the energy supply. Coherent legal requirements at national, European, and, if possible, international level support the market ramp-up. The Federal Ministry for Economic Affairs and Climate Protection is also working on a hydrogen storage strategy.
Hamburg	Right now, the estimate for hydrogen demand from the commodity industry will be about 5 to 10 TWh. Most of it will be imported via the start grid. In addition, the Hamburger Energiewerke are developing a former site of a coal plant into a production site for renewable energy. Work has started on the installation of an electrolyser with a capacity of 100 MW for the production of green hydrogen.
Latvia	The Latvian natural gas transmission system operator AS "Conexus Baltic Grid" is carrying out a feasibility study together with other countries on the construction of a "hydrogen corridor", in order to set up a main hydrogen transmission network in several European Union countries. At the same time, no decisions have been made in Latvia regarding the construction of a hydrogen transmission and distribution infrastructure, because currently only a few potential users of hydrogen have been identified in Latvia: The construction of infrastructure to meet the needs of a small number of users is not profitable, and it would not be permissible to make other systems cover the costs of such infrastructure maintenance (for example, natural gas systems) for users.
Lithuania	By 2030, Lithuania plans to build 1.3 GW of electrolysis capacity to produce 129 kt (kilo tonnes) of green hydrogen per year. By 2050, these figures are expected to increase significantly to 8.5 GW of installed electrolysis capacity, producing around 732 kt of green hydrogen per year. It is expected to account for about 32 % of Lithuania's total final energy demand in 2050. The projected use of 129 kt of green hydrogen in Lithuania by 2030: feedstock (ammonia production, 82 kt; oil refinery, 5 kt), fuel (heavy and other vehicles, 8 kt; other uses, 1 kt), export (including derivates of hydrogen), 33 kt. The projected use of 732 kt of green hydrogen in Lithuania by 2030: feedstock (ammonia production, other feedstock, 472 kt; oil refinery, synthetic fuel production, 141 kt), fuel (heavy vehicle, public transport, 51 kt; other uses, 7 kt; electricity production, 17 kt), green hydrogen export, 44 kt.
Mecklenburg-Vorpommern	Hydrogen production and supply targets for the federal state will be drawn up in the Hydrogen Strategy for Mecklenburg-Vorpommern, which is currently being developed.
Sweden	The government considers that fossil-free hydrogen will constitute an important part of Sweden's future energy systems and is a pre-condition for the phasing out of fossil fuels in industry and will be important when it comes to reducing emissions from such sources as heavy goods transport. Swedish production of fossil-free hydrogen requires a great expansion of fossil-free energy production. Regulatory frameworks are already in place in order to test the construction of hydro-gen pipelines in Sweden, but other regulatory frameworks and instruments need to be reviewed and developed as the use of hydrogen increases in society.
Schleswig-Holstein	There are hydrogen strategies at both the national and regional level. Schleswig-Holstein's hydrogen strategy was updated at the end of 2023. The overarching goal is to expand electrolysis capacity in Schleswig-Holstein from over 5 GW in 2037 to over 9 GW in 2045.

5.2 Government Responses to the BSPC Intergovernmental Survey on Energy Security, Maritime Resilience, and Critical Infrastructure Protection in the Baltic Sea Region

The Baltic Sea Parliamentary Conference (BSPC) Working Group on Energy Security, Self-Sustainability, Resilience, and Connectivity (WG ESSCR) initiated another intergovernmental survey to assess the current policies and measures in place among the Baltic Sea states regarding key security challenges in the region. The survey focused on four primary areas of concern:

- Energy security, including resilience against external disruptions and supply diversification.
- Regulation of shadow fleet activities, particularly in light of sanctions evasion, maritime security risks, and environmental concerns.
- Protection of critical maritime infrastructure, such as undersea cables and pipelines, which are increasingly targeted by hybrid threats.
- Strengthening regional cooperation, with an emphasis on joint intelligence-sharing, coordinated maritime patrols, and crisis response mechanisms within existing multilateral frameworks.

Governments were asked to provide detailed responses to ten key questions, covering their monitoring mechanisms, legal frameworks, surveillance capabilities, and cooperation within NATO, the EU, and other international organisations.

Key Findings and Policy Considerations

The responses from participating governments highlight growing security challenges in the Baltic Sea region, particularly in relation to hybrid threats, surveillance gaps, and legal enforcement limitations. Many governments stress the need for enhanced multilateral cooperation and increased intelligence-sharing, as well as more effective legal mechanisms to address emerging security threats in the maritime domain.

A strong focus is placed on EU and NATO-led initiatives, which serve as essential instruments in securing the region. Key frameworks and strategies highlighted in the responses include:

- **The EU Action Plan on Cable Security** was recently introduced to strengthen the protection and resilience of critical undersea infrastructure through enhanced surveillance, crisis response mechanisms, and public-private cooperation.

- **NATO's Baltic Sentry operation** has led to an increased military presence in the Baltic Sea to deter threats against undersea infrastructure and maritime transport routes.

- **The EU Hybrid Toolbox and Hybrid Rapid Response Teams,** which are designed to counter hybrid threats, including sabotage, cyber-attacks, and disinformation campaigns targeting maritime infrastructure.

- **CISE (Common Information Sharing Environment),** which facilitates real-time intelligence-sharing between European maritime security agencies to improve situational awareness and response coordination.

- **CUIN/NATO (Critical Undersea Infrastructure Network),** which serves as a coordinated NATO-led surveillance mechanism for critical undersea infrastructure, ensuring real-time monitoring and response capabilities.

- **The Joint Expeditionary Force (JEF),** which plays a crucial role in ensuring rapid military response capabilities in Northern Europe, including the Baltic Sea region.

- **The European Maritime Security Strategy (EUMSS) and WP EUMSS**, which aim to enhance maritime defence cooperation within the EU, particularly in relation to critical infrastructure protection.

- **MARCOM (NATO's Allied Maritime Command),** which leads NATO's maritime situational awareness efforts and serves as the central hub for naval coordination in the Baltic Sea region.

- **The Council of the Baltic Sea States (CBSS),** which is currently examining its potential future role in security-related matters, particularly in relation to energy security and maritime resilience.

Observations on Confidentiality and Completeness of Responses

The level of detail and specificity in the responses varies significantly among participating governments. Some states have provided extensive insights into their national policies, legal perspectives, and multilateral cooperation efforts, while others have limited their submissions to broad assessments without substantial elaboration.

Additionally, several responses include confidentiality markings, such as "For Official Use Only", indicating that certain details may not be intended for broader public circulation.

It is important to emphasise that **this summary serves only as an overview for discussion purposes**. It does not replace a thorough examination of the original government responses, some of which contain detailed and highly substantial content.

Furthermore, a direct question has been raised to the German delegation regarding MARCOM's role in intelligence-sharing and security coordination. This reflects other states' expectations for further clarification on Germany's involvement in NATO-led intelligence operations in the Baltic Sea region.

1) Monitoring and Regulation of Shadow Fleet Activities in the Baltic Sea

Governments in the Baltic Sea region acknowledge the growing activity of the Russian shadow fleet, which presents risks related to sanctions evasion, environmental hazards, and hybrid security threats. Many responses highlight concerns that existing legal frameworks do not provide sufficient tools to restrict the movement of these vessels, particularly in Exclusive Economic Zones (EEZs), where the principle of innocent passage applies.

National Monitoring Measures

Individual governments have implemented various measures to track and regulate shadow fleet activities:

- Navies, coast guards, and maritime authorities continuously monitor vessel movements using national surveillance systems, maritime domain awareness platforms, and cooperation with allied intelligence services.

- EU sanctions enforcement plays a key role in restricting shadow fleet operations. Some countries actively implement the vessel listing mechanism, which denies shadow fleet vessels access to essential services, such as flag registration, insurance, port facilities, and financial transactions.

- The European Maritime Safety Agency (EMSA) is engaged in tracking high-risk vessels and ensuring compliance with maritime safety regulations. Several governments emphasize the need to strengthen EMSA's mandate to address shadow fleet activities more effectively.

- Some governments report the systematic verification of CLC certificates (Certificate of Insurance or Other Financial Security in Respect of Civil Liability for Oil Pollution Damage) related to oil spill liability as a practical enforcement tool. When broadly applied along key routes, this functions as a de facto monitoring system.

- Regional cooperation frameworks link the surveillance systems of multiple coastal states, enabling near real-time situational awareness of vessel movements across the Baltic Sea. These mechanisms are actively used in operational monitoring.

- A dedicated expert group composed of maritime, sanctions, legal, and environmental authorities supports coordination of flag state responsibilities, insurance checks, and enforcement of port state controls.

Regional and International Cooperation

To enhance maritime security and intelligence-sharing, governments stress the importance of regional co-operation mechanisms:

- NATO's Baltic Sentry operation has intensified joint maritime patrols, aerial reconnaissance, and naval surveillance across the Baltic Sea to detect and deter suspicious vessel movements.
- The Joint Expeditionary Force (JEF) supports rapid response capabilities in the event of maritime security threats, providing high-readiness naval assets to counter hybrid activities.
- NB8++ intelligence-sharing mechanisms facilitate coordinated sanctions enforcement, vessel tracking, and information-sharing among Baltic and Nordic countries.
- The EU Common Information Sharing Environment (CISE) is being utilized to integrate real-time intelligence-sharing across civilian and military maritime security agencies.
- Some governments suggest that the NATO Critical Undersea Infrastructure Network (CUIN) could be leveraged for enhanced monitoring of shadow fleet vessels, particularly in proximity to critical maritime infrastructure.

Challenges and Areas for Improvement

While national and regional mechanisms are in place, many responses highlight persistent challenges in regulating shadow fleet activities:

- Legal gaps in international maritime law limit the ability of states to intercept or inspect vessels operating in EEZs, where the right of innocent passage applies.
- The absence of a unified EU enforcement framework leads to inconsistencies in shadow fleet regulation among Baltic Sea states.
- Improved intelligence-sharing and coordinated vessel tracking are necessary to prevent loopholes in sanctions enforcement.

Some governments call for reforms in international maritime law to introduce stricter controls over shadow fleet activities and propose the harmonization of regional enforcement measures to ensure a coordinated response across the Baltic Sea region.

2) Enhancing Joint Maritime Patrols and Surveillance Systems

Governments across the Baltic Sea region emphasize the need to strengthen maritime situational awareness and enhance coordinated surveillance mechanisms in response to increasing threats to maritime security and undersea infrastructure. Many responses highlight the importance of integrating national surveillance capabilities into broader EU and NATO frameworks to ensure a more comprehensive and real-time overview of activities in the region.

Key Measures and Ongoing Initiatives

- Baltic Sentry, NATO's enhanced Vigilance Activity, has been expanded with additional naval patrols, aerial reconnaissance, and underwater drone surveillance to detect and deter hostile activities, including those related to shadow fleet movements.

- NATO's Task Force X is testing and deploying high-tech monitoring systems to detect undersea threats and hybrid security risks. These include automated surveillance tools, artificial intelligence-driven vessel tracking, and advanced sonar technology.

- The EU's CISE (Common Information Sharing Environment) framework is being used to facilitate real-time intelligence-sharing between civilian and military maritime authorities across Europe, helping to bridge information gaps.

- The NATO Maritime Centre for Security of Critical Undersea Infrastructure (MARCOM) has been tasked with enhancing cooperation between allied naval forces and improving information-sharing on maritime threats. Some governments have suggested that MARCOM's role should be further strengthened to ensure faster coordination of response measures in case of incidents.

- The European Maritime Security Strategy (EUMSS) Action Plan is guiding the development of new maritime security protocols, ensuring that joint patrols and surveillance systems are aligned with broader EU security objectives.

- One government reports hosting a multinational joint operation (Multipurpose Maritime Operation, MMO) in the northern Baltic in 2025, conducted together with neighbouring countries and EU agencies such as EMSA, Frontex, and EFCA. This operation combines satellite surveillance, artificial intelligence, and remotely piloted aerial systems (RPAS) with regional coast guard and law enforcement efforts.

- Some responses highlight the importance of aligning military presence with national maritime authorities, ensuring that civilian and military operations in shared waters are effectively coordinated.

National and Regional Cooperation Efforts

- Several governments emphasise the need for closer cooperation between navies, coast guards, and border control agencies to enhance joint maritime patrols and intelligence-sharing.

- Some states are investing in national maritime surveillance upgrades, including coastal radar networks, unmanned aerial vehicles (UAVs), and underwater detection systems to improve early warning capabilities.

- Governments stress the importance of NATO-EU coordination, particularly in monitoring critical maritime infrastructure and responding to threats in real-time.

- The BSRBCC (Baltic Sea Region Border Control Cooperation) is being used as a flexible inter-agency coordination platform for joint exercises, risk assessments, and rapid response planning.

Challenges and Future Considerations

- While significant progress has been made, several governments highlight the need for additional financial and technical resources to support long-term surveillance upgrades.

- Some countries stress the importance of harmonising surveillance data-sharing protocols to ensure that all regional actors operate with a common situational awareness framework.

- Further development of NATO's Mainsail system – an AI-driven maritime surveillance tool – is being explored to improve threat detection capabilities across the region.

- Several governments underline the need for improved coordination with private sector actors, including energy and telecommunications companies, which operate much of the undersea infrastructure at risk.

- There is also broad agreement that existing mechanisms should be strengthened rather than replaced, in view of limited resources and the need for continuity in operational structures.

3) Legal Opinions on Recent Incidents and National Response Plans

Governments reaffirm their commitment to the United Nations Convention on the Law of the Sea (UNCLOS) as the primary legal framework governing maritime activities. However, many emphasize the limitations of current international law when it comes to enforcing security beyond territorial waters, particularly in cases of hybrid threats, sabotage of critical undersea infrastructure, and shadow fleet operations.

Legal Challenges and National Positions

- Several governments stress that UNCLOS lacks explicit enforcement provisions that would allow coastal states to take preventive action against vessels suspected of engaging in illegal activities within Exclusive Economic Zones (EEZs).

- Some countries argue for a reinterpretation of UNCLOS provisions, which would allow for a more dynamic application of legal jurisdictions to safeguard maritime security interests.

- Others advocate for bilateral or regional agreements to strengthen enforcement mechanisms and improve rapid response capabilities.

- A few states highlight existing national legal frameworks that allow them to inspect, detain, or restrict access to vessels suspected of violating maritime security laws.

- One government reports that criminal investigations are currently ongoing in connection with recent incidents within its EEZ and in relation to damage to undersea infrastructure owned by national operators.

Crisis Response Mechanisms and Recent Initiatives

- Governments report that they have national emergency protocols in place to address maritime security incidents, but many stress the need for better international coordination.

- Recent naval exercises have been conducted by some countries to test rapid response protocols, particularly for scenarios involving shadow fleet activities, sabotage of undersea infrastructure, and unidentified vessels in restricted maritime zones.

- National crisis management centers have been tasked with ensuring effective inter-agency coordination in the event of an incident. Some governments have formalized action plans that include cross-border cooperation, intelligence-sharing, and military response options.

- Some states propose the creation of no-anchoring zones around critical undersea infrastructure, such as submarine cables and pipelines, to limit unauthorized maritime activities in these areas.

Regional and International Cooperation on Legal Frameworks

- The EU Hybrid Toolbox is being explored as a mechanism to develop coordinated legal and policy responses to hybrid threats in the maritime domain.

- Governments underline the importance of NATO's Critical Undersea Infrastructure Network (CUIN) in improving legal cooperation and operational coordination between allies.

- Some governments support closer cooperation with the International Maritime Organization (IMO) to update or refine existing maritime security conventions.

- The European Maritime Security Strategy (EUMSS) Action Plan is guiding discussions on how the EU can support more effective maritime law enforcement in response to growing security concerns.

Challenges and Open Questions

- Governments express concerns over the difficulty of assigning responsibility in cases of maritime sabotage, particularly given the ability of actors to obscure vessel ownership and operational intent.

- There is no clear consensus on whether UNCLOS amendments should be pursued, with some governments advocating for a reinterpretation of existing provisions rather than a full-scale revision.

- A direct question has been raised to the German delegation regarding MARCOM's role in coordinating legal enforcement actions in the Baltic Sea region, reflecting the need for further clarity on intelligence-sharing and response mechanisms.

4) Coordinated Measures to Strengthen the Protection of Critical Offshore Infrastructure

Governments recognize the increasing vulnerability of critical offshore infrastructure, including undersea cables, pipelines, and offshore energy facilities, in light of growing hybrid threats, sabotage risks, and shadow fleet activities. Several measures are being taken at the national, regional, and international levels to strengthen detection, deterrence, and response capabilities.

National Strategies for Infrastructure Protection

- Some governments have tasked national security agencies, armed forces, and crisis management centers with ensuring continuous monitoring of undersea infrastructure.

- National maritime surveillance systems have been upgraded to track vessel activity near critical assets, using coastal radars, satellites, and underwater sensors.

- Some countries are developing legal provisions to restrict unauthorized activities near key infrastructure sites, such as creating designated security zones around undersea cables and pipelines.

- One response stresses the need to establish a regional reserve of spare parts and specialized repair vessels, particularly suited to northern maritime conditions, such as ice.

Regional and International Cooperation on Infrastructure Protection

- The EU Action Plan on Cable Security, published in early 2025, outlines concrete steps to strengthen monitoring, resilience, and rapid response mechanisms for critical underwater infrastructure across Europe. Governments highlight this initiative as a key step toward better cross-border coordination and joint risk assessment.

- NATO's Baltic Sentry has enhanced patrols and surveillance of critical offshore assets, utilizing naval forces, aerial reconnaissance, and underwater drones to monitor suspicious maritime activities.

- The NATO Maritime Centre for the Security of Critical Undersea Infrastructure (CUIN) at MARCOM plays a central role in coordinating intelligence-sharing and military responses to threats against undersea networks.

- Some governments propose strengthening cooperation with private operators of undersea cables and pipelines to improve early-warning systems, resilience planning, and emergency repair capabilities.

- The use of European-developed technologies in cable and pipeline protection is encouraged, with the aim of reducing dependency on non-European suppliers in strategically sensitive sectors.

Technological Measures and New Monitoring Capabilities

- The EU's Critical Entities Resilience Directive (CER) is being implemented to improve the security of essential infrastructure, including energy and communications networks.

- Some governments are investing in new sensor technologies, including quantum sensors and seismic monitoring, to detect and prevent unauthorized activities near critical maritime assets.

- NATO's Task Force X is piloting advanced undersea monitoring systems, integrating AI-driven data analysis and autonomous underwater drones to enhance threat detection and incident response.

- The Maritime Situational Awareness (MSA) framework is being expanded to incorporate underwater surveillance technologies, ensuring a comprehensive maritime security picture for regional actors.

Challenges and Areas for Further Development

- Some governments stress the limited availability of repair vessels and personnel in the event of large-scale infrastructure damage, calling for greater EU and NATO support in this area.

- There is a call for more structured public-private partnerships, particularly regarding data-sharing agreements between governments and infrastructure operators.

- Some governments propose closer alignment between EU and NATO efforts, ensuring that military assets can support civilian infrastructure protection when necessary.

5) Shared Intelligence and Rapid Response Mechanisms

Governments recognize that effective intelligence-sharing and rapid response coordination are essential for securing maritime infrastructure, tracking shadow fleet activities, and countering hybrid threats in the Baltic Sea region. While various intelligence networks exist, some countries highlight the need for improved coordination, faster decision-making, and better interoperability between national and international actors.

Existing Intelligence-Sharing Frameworks

Several intelligence-sharing platforms are already in place to exchange maritime security information, detect threats, and coordinate responses:

- CISE (Common Information Sharing Environment) – A EU-wide framework that enables real-time maritime intelligence-sharing between European border agencies, coast guards, navies, and customs authorities.

- CUIN/NATO (Critical Undersea Infrastructure Network) – A NATO-led platform dedicated to monitoring and protecting critical subsea assets, such as undersea cables and pipelines, by coordinating surveillance and risk assessments.

- MARCOM (NATO's Allied Maritime Command) – A central NATO hub for intelligence-sharing, naval coordination, and rapid response planning. Some governments seek clarification from the German delegation on MARCOM's role in intelligence-sharing within the Baltic Sea region.

- The BSRBCC (Baltic Sea Region Border Control Cooperation) – A regional initiative focused on preventing cross-border crime, smuggling, and unauthorized maritime activities, which also contributes to maritime security efforts.

- One government highlights that although cooperation platforms such as SUCBAS are actively used, the lack of a secure, dedicated infrastructure for sharing classified or operationally sensitive information remains a limiting factor.

- Additionally, the establishment of a Shadow Fleet Expert Working Group within the NB8+ framework is reported. This group, comprising representatives from coastal states, focuses on joint approaches to sanctions enforcement, insurance control, and coordination with flag and port state authorities.

Rapid Response Mechanisms and Military Coordination

To respond swiftly to potential threats, multiple NATO and EU initiatives have been deployed:

- Baltic Sentry – A NATO-enhanced maritime presence operation that provides continuous naval and aerial surveillance of the Baltic Sea, improving situational awareness and deterrence.

- JEF (Joint Expeditionary Force) – A UK-led coalition of Nordic and Baltic countries designed for high-readiness military deployments in response to regional security threats.

- EU Hybrid Rapid Response Teams – A EU-wide task force that can be deployed to assist member states facing hybrid threats, including cyber-attacks and maritime sabotage.

- EU Hybrid Toolbox – A comprehensive EU mechanism that provides legal, technical, and operational tools to counter coordinated hybrid attacks, including those targeting maritime security.

Areas for Further Development

While these frameworks offer strong foundations for intelligence-sharing and rapid response, some governments emphasize the need to:

- Improve coordination between NATO and the EU, ensuring seamless information exchange and crisis management between military and civilian actors.
- Enhance real-time surveillance technologies, particularly AI-driven data analysis, underwater sensors, and automated threat detection.
- Expand cooperation with private sector operators of undersea cables, ports, and offshore energy infrastructure to improve early-warning capabilities.
- Establish a dedicated regional crisis response framework for the Baltic Sea, similar to NATO's Air Policing mission, that allows for pre-approved, coordinated reactions to maritime incidents.

6) Support Mechanisms for Technical and Financial Resources

Governments emphasise the need for enhanced financial, technical, and operational support to address growing maritime security challenges, critical infrastructure protection, and hybrid threats in the Baltic Sea region. While existing EU and NATO frameworks provide some assistance, several countries highlight the necessity of additional resources to improve response capabilities.

Existing EU and NATO Support Mechanisms

Several EU and NATO initiatives already provide funding, expertise, and crisis response capabilities:

- EU Hybrid Rapid Response Initiative – This EU mechanism deploys expert teams to assist states facing hybrid security challenges, including cyber-attacks, maritime sabotage, and infrastructure disruptions.
- EU Critical Entities Resilience Directive (CER) – A new EU legal framework designed to increase the resilience of critical infrastructure operators by enhancing risk preparedness, emergency planning, and recovery capacities.

- EU Action Plan on Cable Security – A comprehensive strategy recently introduced by the European Commission to improve the resilience, surveillance, and repair capacity of undersea cables across the EU.

- NATO's CUIN (Critical Undersea Infrastructure Network) – A NATO-led platform for coordinating surveillance, intelligence-sharing, and protection measures for vital undersea assets.

- EU Hybrid Toolbox – A multi-layered EU framework that provides legal, diplomatic, and operational measures to respond to hybrid threats, including coordinated cyber and maritime attacks.

- One government highlights the Baltic Sea region's role as a designated testbed for cable security under the EU Action Plan, aiming to establish a regional coordination hub and accelerate the implementation of CISE-based information exchange.

Funding Needs and Capacity Building

Governments identify several key areas where additional support is required:

- Strengthening undersea cable repair capacity – Many countries highlight the limited availability of repair vessels and specialised equipment for fixing damaged undersea infrastructure. They call for EU and NATO funding to establish dedicated repair units.

- Enhancing regional intelligence-sharing and threat detection – Several governments stress the need for increased investment in AI-driven surveillance, automated threat detection, and satellite monitoring systems.

- Expanding military-civilian cooperation – Countries advocate for closer coordination between national navies, private operators of critical infrastructure, and international security frameworks to improve crisis response capabilities.

- Improving cross-border crisis management structures – Some states propose the establishment of a permanent regional crisis response framework to coordinate actions across NATO, the EU, and national security agencies in the event of a major maritime incident.

- One response also underlines the need for improved integration of risk assessments from national authorities and EU agencies, coordinated through structured regional mechanisms. While some structures exist, further development is considered necessary.

Calls for Further EU and NATO Involvement

Several governments urge stronger financial and operational commitments from NATO and the EU, particularly in the Baltic Sea security context. Some countries argue that new funding mechanisms should be established to bolster resilience against hybrid threats, enhance undersea infrastructure protection, and support regional defense cooperation.

Others highlight the importance of integrating private-sector stakeholders into resilience planning, particularly companies that own and operate undersea cables, offshore energy facilities, and key maritime logisticshubs.

7) Role of CBSS and Other International Organisations in Strengthening Cooperation

Governments recognise the CBSS and other regional and international organisations as potential facilitators of enhanced cooperation on maritime security and critical infrastructure protection. However, there are differing views on the extent to which CBSS should assume a greater security-related role.

Council of the Baltic Sea States

- CBSS is acknowledged as a key regional political forum for fostering dialogue and cooperation among the democratic Baltic Sea states.

- Some countries emphasize that CBSS has historically focused on environmental, economic, and social issues rather than security and defense.

- Others propose leveraging CBSS ministerial meetings to expand discussions on maritime infrastructure protection, resilience-building, and hybrid threat response strategies.

- The upcoming CBSS Foreign Ministers' Meeting in Tallinn in May 2025 is expected to address the future scope of CBSS engagement in security-related topics.

- One government highlights the ongoing CBSS strategic review initiated in mid-2024, led by two senior political figures appointed by the Estonian Presidency. The review aims to assess the future role of the CBSS in regional security coordination and is expected to present recommendations at the May 2025 Council meeting.

International Maritime Organization (IMO)

- The IMO sets global maritime safety standards, particularly regarding shipping regulations, pollution control, and vessel security.

- Some governments suggest that the IMO's mandate should be expanded to address the challenges posed by shadow fleet activities and maritime hybrid threats.

- The recently adopted IMO Resolution A.1192(33) urges member states and stakeholders to take coordinated action against illegal operations in the maritime sector, including the activities of the so-called "dark fleet" or "shadow fleet".

European and NATO Security Frameworks

- The European Maritime Security Strategy (EUMSS) Action Plan provides a comprehensive framework for EU coordination on maritime security challenges.

- The EU's Common Information Sharing Environment (CISE) enhances real-time intelligence-sharing between European maritime security agencies.

- The NATO Maritime Centre for Security of Critical Undersea Infrastructure (CUIN/NATO) plays a growing role in monitoring and securing undersea cables and pipelines.

- The BSRBCC (Baltic Sea Region Border Control Cooperation) serves as an additional platform for enhancing maritime security cooperation, particularly in countering cross-border crime and unauthorized vessel activities.

Balancing Regional and International Cooperation

- Several countries advocate for stronger CBSS engagement in security while maintaining its current role as a primarily political and economic forum.

- Others emphasize the importance of NATO and EU coordination on defense-related aspects, ensuring complementarity rather than duplication of responsibilities.

- A recent initiative cited by one government is the establishment of a Shadow Fleet Expert Working Group composed of legal, sanctions, environmental, and maritime authorities from 14 coastal states in the Baltic and North Sea regions. This group facilitates joint analysis and operational alignment in the enforcement of maritime sanctions.

8) Gaps and Limitations in Existing Legal Frameworks (UNCLOS, EEZs, and Responses to Sabotage)

Governments widely agree that the United Nations Convention on the Law of the Sea (UNCLOS) provides an important legal foundation for maritime governance. However, they stress that its current provisions do not adequately address modern security threats, including hybrid attacks, shadow fleet operations, and sabotage of undersea infrastructure.

Key Legal Gaps in UNCLOS and Enforcement Challenges

- Limited enforcement powers in Exclusive Economic Zones (EEZs): UNCLOS grants coastal states certain rights within their territorial waters (12 nautical miles) but significantly limits enforcement capabilities in EEZs (200 nautical miles). This creates challenges in preventing and responding to sabotage of critical infrastructure outside territorial waters.

- Lack of explicit provisions for undersea infrastructure protection: While UNCLOS recognizes the rights of states to lay and maintain undersea cables and pipelines, it does not provide clear enforcement mechanisms to prevent damage or interference with such infrastructure.

- No legal framework to counter shadow fleet activities: Existing international maritime law does not specifically regulate vessels engaged in sanctions evasion or deceptive shipping practices.

- Difficulties in assigning attribution for sabotage incidents: The covert nature of hybrid threats and undersea sabotage makes it challenging to identify perpetrators and apply international legal consequences.

- Following a recent summit of Baltic Sea NATO Allies, a joint legal working strand was launched to explore concrete measures under international maritime law—including within the scope of navigational freedoms—to improve prevention and enforcement against deliberate damage to subsea infrastructure.

Proposed Solutions and Ongoing Initiatives

Several governments suggest regional and international legal adjustments to enhance security, enforcement, and preventive measures:

- Reinterpretation of UNCLOS provisions to allow coastal states to take preventive action against suspected sabotage and illegal activities in EEZs.

- The creation of special security zones around critical undersea infrastructure, which could impose additional restrictions on vessel movement, anchoring, and operations near cables and pipelines.

- Bilateral and multilateral agreements among Baltic Sea nations to strengthen joint enforcement measures and intelligence-sharing regarding shadow fleet operations and hybrid threats.

- Legal discussions within NATO and the EU to develop new frameworks for countering hybrid threats at sea, including through sanctions enforcement, surveillance expansion, and military deterrence.

- The Legal Conference on the Protection of Critical Underwater Infrastructure, scheduled for April 3, 2025, in Tallinn, will address potential legal adjustments.

- The EU Action Plan on Cable Security aims to improve preventive measures and response coordination for undersea infrastructure sabotage across member states.

The Role of Existing and Emerging Legal Instruments

- The IMO's Resolution A.1192(33) urges member states to take stronger action against illegal maritime operations, though its implementation remains a challenge.

- The EU Critical Entities Resilience (CER) Directive provides a framework for protecting essential infrastructure but does not extend enforcement authority beyond territorial waters.

- The EU Hybrid Toolbox is being explored as a legal and operational instrument for countering hybrid maritime threats, including sabotage and shadow fleet activities.

- The NB8++ intelligence-sharing format could serve as a foundation for developing new legal frameworks at the regional level.

9) Applying Legal Jurisdictions More Dynamically

Governments broadly agree that current international maritime law does not provide sufficient flexibility to address emerging security threats in the Baltic Sea. They emphasize that UNCLOS and other existing frameworks must be interpreted and applied more dynamically to improve enforcement, deterrence, and response mechanisms.

Key Challenges in Applying Legal Jurisdictions

- UNCLOS limitations on enforcement actions in EEZs: While coastal states have sovereignty over their territorial waters, their ability to intervene in security threats beyond 12 nautical miles (within EEZs) is restricted.

- Hybrid threats and shadow fleet operations operate in legal grey zones, making it difficult to apply traditional maritime enforcement mechanisms.

- Lack of binding international agreements on protecting undersea infrastructure, leading to delays and legal uncertainties in responding to sabotage incidents.

- One response describes a newly launched legal cooperation process among Baltic Sea states, tasked with identifying practical measures under the current law of the sea—including provisions on the freedom of navigation—to prevent and respond to intentional acts of sabotage or irresponsible behavior.

Proposed Strategies to Apply Legal Frameworks More Dynamically

1. Expanding National and Regional Enforcement Rights

- Several governments propose strengthening national maritime security laws to extend enforcement capabilities in EEZs, particularly in cases of sabotage, unauthorized vessel movements, and hybrid threats.

- Some suggest bilateral and regional agreements to allow for cross-border enforcement cooperation among Baltic Sea nations.

- Developing emergency legal measures that allow for immediate intervention in suspected sabotage incidents, rather than waiting for lengthy investigations or international legal approvals.

2. Strengthening Coordination Between Military and Civilian Agencies

- Governments emphasize the need for closer cooperation between military, intelligence, law enforcement, and maritime authorities to enable faster decision-making and response actions.

- NATO's MARCOM (Maritime Command) and the Critical Undersea Infrastructure Network (CUIN) play an increasingly important role in facilitating joint security efforts.

- The European Maritime Security Strategy (EUMSS) and the Common Information Sharing Environment (CISE) are highlighted as key frameworks for improving civil-military coordination.

3. Creating Special Security and Protection Zones Around Critical Infrastructure

- Some governments propose the establishment of designated protection zones around key undersea infrastructure, such as pipelines and communication cables, where stricter monitoring and enforcement would apply.

- These security zones could be enforced through regional agreements, using precedents from the North Sea Protection Zone model.

- The EU Action Plan on Cable Security is seen as a potential tool to introduce legal and operational mechanisms for securing undersea infrastructure.

4. Reinterpreting UNCLOS to Address Modern Threats

- Some states call for a reassessment of UNCLOS provisions to explore whether hybrid threats, shadow fleet activities, and sabotage can be addressed under existing international law.

- There is interest in using the principle of necessity in international law to justify immediate action against threats to national security and critical infrastructure.

- Developing case law through international maritime courts could help establish clearer legal precedents for interventions in EEZs.

10) Prospects for High-Level CBSS Meetings

Governments express differing views on the need for a regular CBSS heads-of-government meeting focused on critical infrastructure protection and maritime security.

The CBSS Foreign Ministers' Meetings, which were reinstated in 2022 after a long hiatus, now serve as the primary platform for political dialogue. However, the extent to which they will address security-related topics remains uncertain. The upcoming CBSS Foreign Ministers' Meeting in Tallinn (May 2025) may provide further clarity on the organization's evolving role in security coordination within the Baltic Sea region.

Government Positions on Reviving CBSS Summits

- Some governments argue that the current security situation in the Baltic Sea warrants a more structured, high-level political coordination mechanism.

- Other governments prefer maintaining flexibility, arguing that ad-hoc consultations among Baltic Sea states have proven effective in addressing security concerns.

- Existing platforms such as the Nordic-Baltic 8 (NB8), NATO summits, and EU Council discussions already provide opportunities for high-level coordination.

- Some governments see no immediate need to formalize CBSS summits but remain open to discussing the issue further.

- One response links this discussion to the ongoing CBSS reform process launched in 2024, noting that the role of heads-of-government meetings is among the topics under review.

Next Steps and Upcoming Discussions

- The CBSS is currently undergoing a strategic review to determine its future priorities and role in regional security cooperation.

- The Foreign Ministers' Meeting in Tallinn (May 2025) is expected to address security-related matters within the CBSS framework, potentially clarifying the organization's future engagement in maritime security.

- The "Wise Men Report" on CBSS reform, commissioned by CBSS foreign ministers, is anticipated to outline recommendations on whether and how CBSS should expand its security mandate.

6. Best Cross-Border Practices

One of the purposes of the Working Group is to share best practices to ensure energy security, self-sustainability, resilience, and connectivity in the Baltic Sea region. This chapter highlights some of the examples of the best practices identified throughout the work of the BPSC Working Group.

Baltic States' Synchronisation with the Continental European Network

The Baltic States have historically operated in sync with the electric power systems of Russia and Belarus. The origins of the idea to synchronise with the European grid go back as far as 2007 when the prime ministers of the Baltic States proposed the idea of investigating this possibility. The synchronisation of the Baltic States with the European electric power networks is planned for 2025. It will result in the Baltic electric power transmission system becoming part of the European system, meaning more independence from Russia, ensuring energy security and independence. Traders and producers of electric power will be able to sell electric power everywhere in Continental Europe.

CCS Baltic Consortium project

In 2022, Lithuania and Latvia formed a consortium called the "CCS Baltic Consortium" to create a carbon capture and storage (CCS) value chain in Lithuania and Latvia, which would include the capture of CO2 generated in the industrial sector (cement factories in Lithuania and Latvia) as well as onshore and offshore transportation to permanent storage sites, with operations scheduled to commence in 2030. In May 2024, the European Commission has granted the status of Project of Common Interest (PCI) to this project. The consortium consists of Akmenės cementas AB, KN Energies AB, Larvik Shipping AS, Mitsui O.S.K. Lines Ltd., and SCHWENK Latvija SIA.

ELWIND

ELWIND is a joint Estonian-Latvian state-run cross-border offshore wind project in the Baltic Sea. It is an ambitious, environmentally friendly renewable energy project that will provide for increased energy independence and security, for more affordable energy prices, contribute to reducing costs for households and businesses, and also create new business opportunities for the value chain. ELWIND is being launched to strengthen the regional energy market by investing in offshore wind electricity production and hybrid interconnection between Estonia and Latvia. 2030 is planned to be the deadline for project completion.

Fehmarnbelt Tunnel

The Fehmarnbelt tunnel is an immersed tunnel under construction to connect the Danish island of Lolland with the German island of Fehmarn, crossing the 18-kilometre-wide Fehmarn Belt in the Baltic Sea. The Fehmarnbelt tunnel will remove a bottleneck, reduce travel time, and strengthen links between Scandinavia and Central Europe. When the Fehmarnbelt tunnel is completed, the journey between Rødbyhavn and Puttgarden will take seven minutes by train and 10 minutes by car. The Fehmarnbelt tunnel is expected to be completed in 2029.

FinBalt

On 1 January 2020, the single-entry tariff zone of Finland, Estonia, and Latvia (FinEstLat) started operating. The merger of FinEstLat means the linking of the Finnish, Estonian, and Latvian markets, removing the internal tariffs in the region and setting the entry tariffs in the region at the same level. The results of the operation of the FinEstLat single-entry tariff zone are positive. Further market integration, merging FinEstLat and the Lithuanian gas market is a clear opportunity for the Baltic States and Finland to reap all the benefits of their existing and future infrastructure. On 12 October 2022, the merger was postponed and could happen no sooner than October 2024.

Green Industrial Areas

The Interreg project "Green Industrial Areas" empowers public authorities to increase the share of smart and climate-neutral industrial areas and co-develop a transnational certification standard. The aim is to develop a transnational certification standard and a toolbox to promote the energy transition in commercial and industrial areas in the Baltic Sea region. The project partners are companies, associations, municipalities, and administrations from Finland, Latvia, Denmark, Poland, Sweden, Lithuania, and Germany. The project is scheduled to run from January 2023 to December 2025.

Nordic Hydrogen Route

The Nordic Hydrogen Route is an initiative between Finnish gas transmission system operator "Gasgrid" and Swedish energy infrastructure company "Nordion Energi" to accelerate the creation of a hydrogen economy by building up cross-border hydrogen infrastructure in Bothnian Bay region and an open hydrogen market by 2030. Nordic Hydrogen Route is to promote reduced carbon dioxide emissions, support regional green industrialisation, economic development, and the European self-sufficiency of energy by developing a network of pipelines that will effectively transport green energy from producers to consumers in order to ensure their access to an open, reliable, and secure hydrogen market.

Rail Baltica

Rail Baltica is a greenfield rail transport infrastructure project aiming to integrate the Baltic States into the European rail network. The project includes five European Union countries – Poland, Lithuania, Latvia, Estonia, and indirectly also Finland. It will connect Helsinki, Tallinn, Pärnu, Riga, Panevežys, Kaunas, Vilnius, and Warsaw. The project completion is scheduled for 2030. Rail Baltica is not only a railway project but also a multi-infrastructure ecosystem that will help form a new economic and security corridor as well as provide digital connectivity. It includes electricity and electrification requirements and substations that can be used for dual purposes. The project has a wide international and regional partner network, including more than 150 active contracts and over 50 international partnerships.

Team ThaiGer

The so-called hydrogen truck had grown into the project Team ThaiGer. It had been founded in 2007-2008 together with exchange students from Thailand. They were now organising an international spring school that had been held annually over the last 30 years. Teaching staff from Finland, Poland, Lithuania, Estonia, Norway, Austria, the Netherlands, and Brazil took part. In addition, a master course had been developed on the topics of renewable energy and mobility, also including hydrogen. Team ThaiGer also held energy symposiums, international conferences, master seminars, and more.

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