



Activities of SC.3 related to climate change and greening of inland fleet

Workshop on sustainable development and climate change from the perspective of the transport of dangerous goods on inland waterways

Forty-first session of the ADN Safety Committee

Geneva, 26 January 2023

Activities of the Working Party on Inland Water Transport

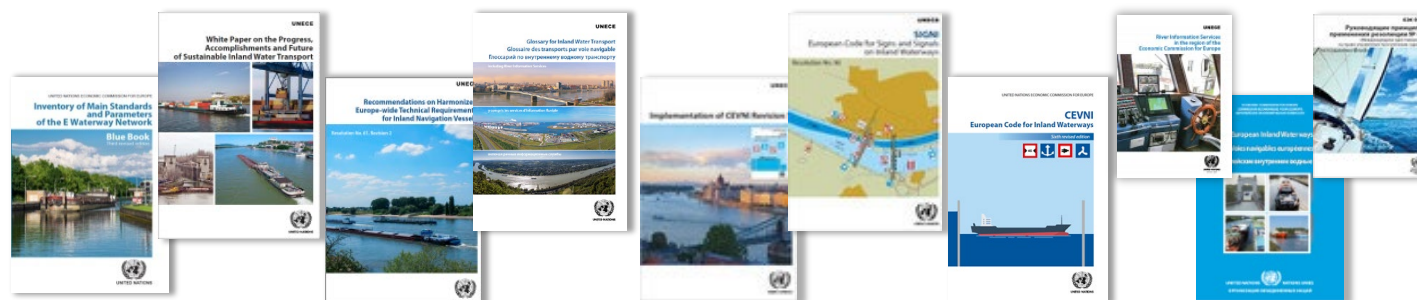
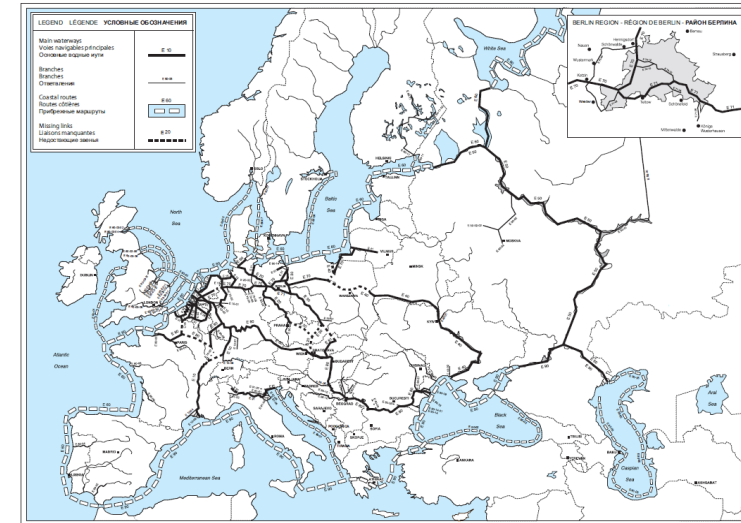
 UN legal instruments relevant to IWT

IWW infrastructure, navigation rules 

 Harmonizing standards and norms

Promoting River Information Services 

 Maps and databases



Background documents

- **ITC Strategy until 2030**
- **Ministerial Declaration “Inland Navigation in a Global Setting”**
Strategic action 3:
Encouraging the realization of a modern fleet and fostering innovations

Ministers acknowledge that a modern inland water fleet is of major importance for navigation safety, efficiency and environmental protection. Ministers call upon the sector to create, where necessary, new types of vessels and the introduction of innovations and modern technologies to ensure safety, reducing the risk of accidents, minimizing environmental impact and combatting climate change.

- **ITC Resolution No. 265 “Facilitating the Development of Inland Water Transport”**
- **UNECE White Paper on the Progress, Accomplishments and Future of Sustainable Inland Water Transport (2020)**

UNECE Policy Recommendation No. 1: Increased coordination in the development of modern, sustainable and resilient E waterway network

UNECE Policy Recommendation No. 4: Encouraging the modernization and greening of the fleet and infrastructure to better tackle environmental challenges



Sustainable Development Goals and how they can be achieved in inland waterways

UNECE tools relevant to IWT

- Monitoring the core transport-related indicators for Sustainable Development Goals
- International Transport Infrastructure Observatory and GIS application
- Report “Climate Change Impacts and Adaptation for International Transport Networks” (2020)
- SITCIN indicators
- Recommendations for international contingency management

Workshop held on 12 February 2020 at the fifty-sixth session of SC.3/WP.3

SDGs relevant for IWT: Goals 9, 8, 13, 6, 14, 17, 7 and 5

Priorities for realizing Goal 9:

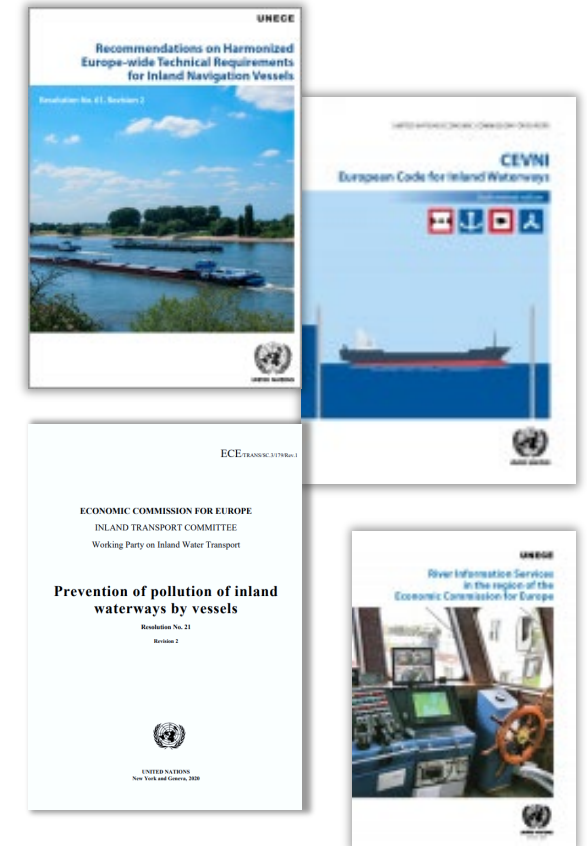
- Modernization and greening of the fleet, reducing GHG emissions; automation and digitalization
- Infrastructure development projects; programmes to increase passenger and freight volumes and the modal share of IWT; integration of inland waterways in multimodal chains
- Development of port–hinterland connections

Activities of SC.3 and SC.3/WP.3

- Promotion of the role of IWT as an inland transport mode with lower energy consumption and better environmental performance
- Facilitating of greening of vessels, IWT infrastructure and ports
- Prevention of environmental pollution
- Exchange of best practices and harmonization through constant coordination and cooperation

Recent amendments to SC.3 resolutions

- Amendments to resolution No. 61, Recommendations on Harmonized Europe-Wide Technical Requirements for Inland Navigation Vessels, revision 2 (2019-2022):
 - Special provisions for vessels using LNG as a fuel and electric vessel propulsion
- Sixth revision of the European Code for Inland Waterways (CEVNI) (2022):
 - Provisions for vessels using LNG as a fuel and the obligation to use onshore power supply points for vessels in berthing areas
- Resolutions on River Information Services (RIS) (2019-2021):
 - Improving the availability and exchange of information between the stakeholders to allow better planning and preparedness for potential disruptions of navigation due to low water and other extreme weather events
- Revision of resolution No. 21 “Prevention of Pollution of inland Waterways by vessels”



Climate Change and the Extreme Water Situation on European Waterways and Its Impact on Inland Water Transport

Workshop held on 17 February 2021 at the fifty-eighth session of SC.3/WP.3

- IWT is more vulnerable to climate change impacts compared to other inland transport modes due to its nature
- Climate-related events that have had the most severe impact on the sector: draught and flooding

The participants highlighted the severe economic damage from low water on the European rivers and emphasized the need for a harmonized approach for urgent adaptation measures and coping strategies.

- Associated impacts of climate change events affected mostly the operation of the fleet, permanent waterway structures and port structures
- Measures and strategies aimed to cope with climate change impact in IWT:
 - Decarbonization of the port and navigation operations, reduction of GHG emissions from vessels
 - Use of monitoring systems, RIS and effective data management
 - Improvement of water management and flood risk management
 - Development and use of risk assessments, contingency plans and warning systems;
 - Adaptation of the fleet, including new vessel design and modernization of the existing vessels
- Recommendations for SC.3

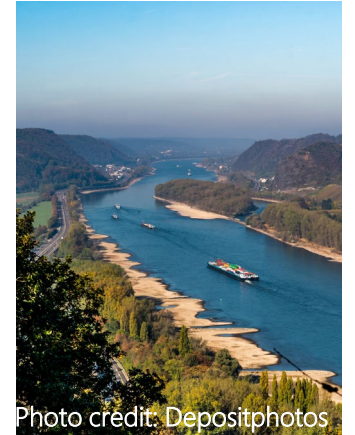


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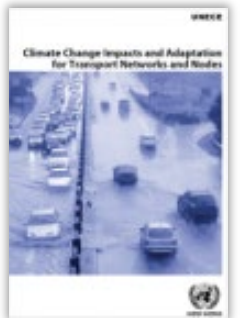


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Prevention of Pollution from Inland Waterway Vessels and Greening of the IWT Sector

Workshop held on 16 February 2022 at the fifty-ninth session of SC.3/WP.3

Discussion on Innovative materials, equipment and technologies in inland water transport on 13 October 2022

Presentation on the CCNR Road map for reducing inland navigation emissions at the 60th session of SC.3/WP.3

Challenges and prospects for inland fleet:

- Transition to alternative fuels and renewable energy sources, including e-fuels and biofuels, LNG, hydrogen, electricity and solar power
- New and improved vessel designs aimed at shifting from fossil fuels to other fuels, facilitation of commissioning vessels that use decarbonization measures and technologies
- Deployment of alternative fuels infrastructure
- Innovative technologies for reducing pollutants from internal combustion engines
- Improved energy efficiency of vessels
- Design and construction of new vessel types that can operate at lower water levels
- Introduction of the label index system for energy and emission performance of inland vessels (*project PLATINA 3*)
- Fostering investment in carbon zero vessels and renewable fuels, preferences and financial support for owners of zero emission vessels

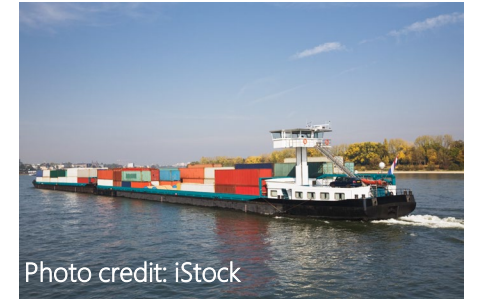


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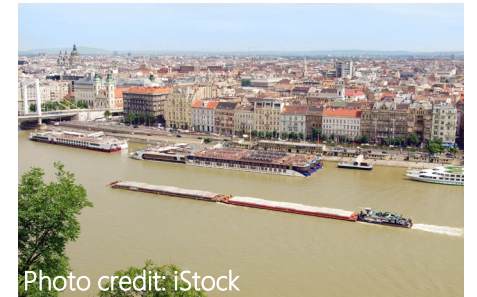


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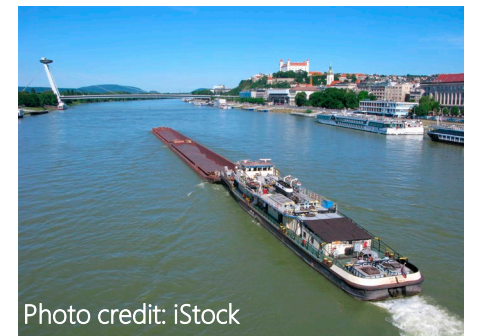


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Towards a Modern, Sustainable and Resilient E Waterway Network

Workshop held on 29 June 2022 at the sixty-first session of SC.3/WP.3

Challenges and prospects for the development of the E waterway network:

- Elimination of missing links and bottlenecks
- Improved maintenance of the waterways and waterway infrastructure
- Digital transition of the business processes in the sector, deployment of RIS, introduction of the RIS enabled corridor management and integration with other modes of transport
- *Improved navigation and management of traffic, provision and exchange of data and resilience to climate change*
- *Modernization of the waterway infrastructure, decarbonization of the sector and the creation of infrastructure for alternative fuels*

Measures that could foster development of the E waterway network:

- Reduction of the development gaps in the inland waterway infrastructure
- Integration of services and exchange of data with other modalities and logistic service providers and improved coordination between stakeholders for cross-border projects
- Measures to cope with low water situations on European rivers
- A greater focus on changes in the structure of goods carried by inland water transport
- *A greater focus on climate change for planning infrastructure projects and increased visibility of infrastructure needs and projects to attract necessary funding*



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Resilience of the Inland Waterway Infrastructure to Climate Change

Challenges, developments and prospects:

- Modernization of the waterway infrastructure and its adaptation to low water periods
- Proper maintenance and improved waterway management measures, improved navigation and traffic management
- A greater focus on climate change for planning infrastructure projects
- Reduction of the energy use and carbon emissions for pumping stations by optimizing pumping technologies and introducing smart control systems
- Introduction of “smart maintenance” by developing data driven services based on Public Sector Information in the field of infrastructure and environment, thus making it possible to optimize the risk budget and performance of the networks
- Introduction of “smart fairway” solutions, including innovative technologies for buoyage and marking of the fairway and RIS technologies
- Provision and exchange of data related to climate change, such as information on water levels and the accessibility of the waterway infrastructure



Greening of Inland Ports

Projects and initiatives in the Danube region relevant to the port infrastructure development, improvement of the port environmental performance and strengthening cooperation between ports:

- Policy initiative “Green Deal for Danube River Transport”
- GRENDEL (Green and Efficient Danube fleet)
- DAPhNE (Danube Ports Network)
- DIONYSUS (Integrating Danube Region into Smart and Sustainable, Multimodal and Intermodal Transport Chains)
- GROwPORT (Green Container Terminal in the Port of Constanta as Access to the Danube Region)
- Other relevant projects with the Danube stakeholders

Project DAPhNE:

- Recommendations to measure and improve environmental performance of inland ports
- Platform “Danube Ports Network” launched in July 2018

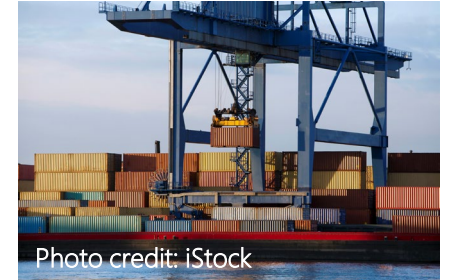


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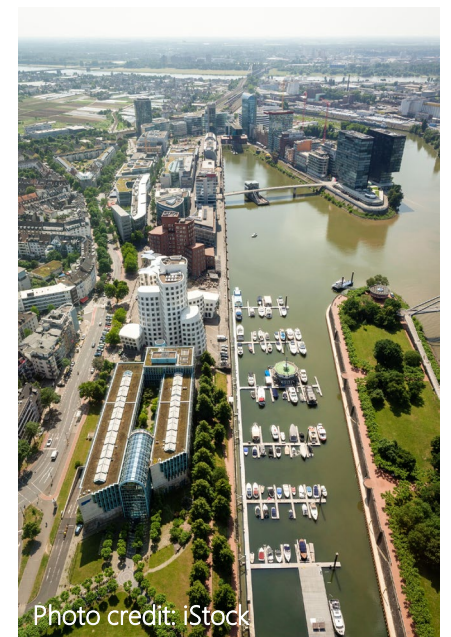


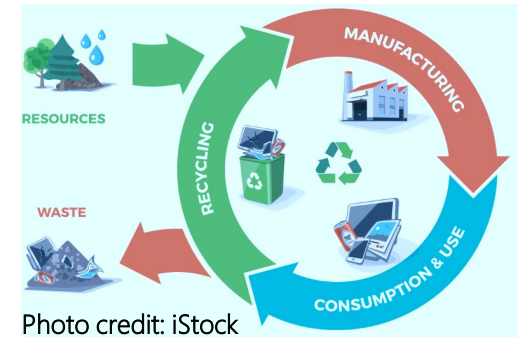
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Circular Economy and Inland Water Transport

Workshop held on 7 October 2020 at the sixty-fourth session of SC.3; continued at the sixty-fifth session of SC.3

Highlights and conclusions:

- IWT elements relevant to circular economy
- Focus on decarbonization, environmental performance and building up a future-proof infrastructure
- Integration of IWT in green supply chains
- Ways of facilitating the transition to CE in the sector
- Energy transition, recycling and reuse of waste could be a good starting point for this work



SC.3 mentioned that (a) while some researches, developments and successful business models were already available for seaports, for IWT this issue would require a detailed investigation and (b) among the elements of circular economy that could be relevant to IWT were material, energy and air pollution.

Possible solutions:

- Integrating the concepts, design, delivery and operations of circular economy into IWT infrastructure
- Proper management of the waste generation on-board vessels
- Planning and organizing of navigation to prevent or minimize waste generation by minimizing the use of waste-generating products and resources
- Sharing resources during navigation as an element of the sharing economy
- Green ports: supporting the green port initiative

COVID-19 Pandemic and Recommendations for International Contingency Management in Inland Waterways

- Ensuring safe and flexible functioning (24/7) of all IWW infrastructure objects and smooth operation of RIS
- Special safety and health protection measures for the waterway personnel and crews on inland navigation vessels
- Temporary measures for the extension of validity and renewal of certificates of crew members, certificates of special knowledge, certificates of approval and provisional certificates of approval according to ADN, service record books, logbooks, and vessels' documents
- Facilitation of the mobility of crew members
- Special procedures to facilitate the replacement of crew members in foreign ports, including special certificates for crews of vessels engaged in international voyages
- Special measures during cargo loading and unloading operations, the replenishment of fuel, water and food supplies and urgent vessel repairs
- Special protection measures for terminal and port operators to protect their workers and the continuity of terminal operations
- Automation of operation and digital data exchange
- Flexibility in customs procedures and other formalities



Some General Conclusions on the Critical Measures for Ensuring a Smooth Transition of IWT to a Zero Emission Transport Mode and Increasing Sustainability

- Development of the harmonized international regulatory framework for facilitating the transition to alternative fuels and greening the sector
- Development of cross-border cooperation in planning and timely introduction of the policy measures
- Long-term resilience planning and cooperation with other transport modes to mitigate the impact of climate change on the whole transport and logistics chains
- Sectoral activity changes such as a reduced demand for fossil fuels, increased energy efficiency and circular economy
- Digitalization
- Introduction of green fleet management strategies
- Adequate funding and the governmental and public support of initiatives
- Lessons learned from the COVID-19 outbreak



Thank you for your attention!

Victoria Ivanova, Secretary of SC.3