

Interreg Baltic Sea Region Programme project

“BSR Hydrogen Air Transport – Preparation of Baltic Sea Region Airports for Green Hydrogen” (“BSR HyAirport”)

Group of Activities 1.1 Legal Framework

22 November 2024

Terms of Reference for Legal Framework Analysis and Recommendations for Implementing Hydrogen Powered Aviation in the Baltic Sea Region

1. Summary

1.1. Project background

The need for sustainable aviation in the Baltic Sea Region. Given the geo-economic structure of the region, efficient and reliable air transport is of great importance for the mobility of people and businesses in the Baltic Sea Region (BSR). Air transport not only provides access to peripheral areas but also helps to connect regions on all sides of the Baltic Sea. As many flights cover short distances in an environmentally sensitive area, the BSR has great potential to benefit from the introduction of (gaseous) hydrogen-powered aircraft, which are expected to come onto the market in the coming years.

The BSR HyAirport project: a vision for hydrogen aviation. The Interreg Baltic Sea Region Program's project BSR HyAirport (BSR Hydrogen Air Transport - Preparation of Baltic Sea Region Airports for Green Hydrogen) aims to facilitate the early adoption of this key technology (GH2) in the BSR by preparing airports for storing, handling, and delivering gaseous green hydrogen (GH2) as a future energy source in aviation. Common challenges to be addressed by the partnership include the evaluation of options and elaboration of concepts for the regional supply of green hydrogen (GH2) to airports according to local demand, legal and safety requirements related to GH2 storage and handling at airports, and the development and testing of equipment and procedures for refuelling and handling hydrogen-powered aircraft. With a partnership of airports, technology partners, airlines, and research institutions from across the programme area, the project will create a unique (maybe leading) platform for the joint development, implementation, and testing of practical solutions serving the common challenges and specific needs of hydrogen-powered aviation in the BSR region.

Legal foundations for hydrogen aviation in the BSR. This project is a part of the group activity 1.1. of the BSR HyAirport project, focusing on the legal aspects of the entire undertaking. This project will assist in developing concrete proposals to modify existing regulations and shape future legal frameworks that support hydrogen-powered aviation at BSR airports. By addressing these legal challenges proactively, the BSR HyAirport project aims to accelerate the adoption of green hydrogen as an alternative fuel in aviation sector within the BSR and potentially beyond.

Additional information is available on the project website <https://interreg-baltic.eu/project/bsr-hyairport/>

1.2. Project objectives

This project aims to develop a comprehensive legal framework to facilitate the adoption of hydrogen powered aviation in the Baltic Sea Region.

Legal framework analysis and recommendations. The project objective is to research the legal framework regarding green hydrogen implementation in the BSR. The project partners are dealing with

legal requirements for the use of green hydrogen as an energy source for aircraft and for ground equipment at airports. Relevant provisions include legal regulations regarding safety, and environmental protection, as well as building and authorization regulations.

Goal of the project. The essential project objective of this group activity is to be utilized for a report on proposed amendments of the legal framework for airport operations with hydrogen powered aircraft.

Target beneficiaries of the project and further dissemination. The most important aspect of the final deliverable is usability of the work. The results from this project will both be used as input to further project work and be made available to the various target groups, e.g., from the areas of politics, industry, and NGOs. In this regard, the findings and proposals will be documented in a "Report on proposed amendments to the legal framework for airport operations with hydrogen aircraft". Moreover, it is planned to disseminate the findings to members of the legislative and the interested public during a project conference as well as bilateral workshops with representatives of selected target groups.

1.3. Expected outcome

Existing EU BSR country and international legal frameworks must be researched, focusing on the use of gaseous green hydrogen in BSR airports. Comparative analysis must also be completed, so that the project may be valuable to all EU BSR countries and have multi-national benefit.

The anticipated outcomes of this project include, among others:

- a detailed legal and regulatory framework analysis of the BSR countries, providing an understanding of the current regulatory framework and its implications for hydrogen in the aviation industry;
- identification of key legal and regulatory challenges deterring the implementation of hydrogen powered aviation and airport ancillary equipment in the BSR;
- development of a comprehensive set of recommendations for legislative and regulatory changes to aid the seamless integration of hydrogen powered aviation into the BSR's transportation ecosystem.

2. Methodology

2.1. Interviews with project partners on their opinions and legal challenges regarding the use of gaseous hydrogen in the aviation sector. Tenderers may, at their discretion, include more extensive methodology to supplement the tender deliverable and differentiate pricing for such options

2.2. Legal research, including information from interviews and existing data and legal regulations

3. Timeframe

3.1. Proposals for the service delivery should be submitted by December 6, at 12.00 o'clock EET

3.2. Draft of the deliverable should be submitted by April 6, 2025, however the ongoing consultations with project partners and consortium members are expected to take place during the whole period of the research.

3.3. The final report and deliverables is expected to be submitted by June 6, 2025

4. Contracting procedure and payment information

4.1. Tenderers may suggest their preferred details of the contracting and payment information considering that the contacting institution is the project consortium.

5. Scope of work

5.1. Geographical scope (focus on BSR countries: Latvia, Lithuania, Estonia, Poland, Denmark, Sweden, Finland, and Germany). Tenderers must include proof of ability to deliver quality research in regards to all BSR countries

5.2. Deliverables – report with legal opinion on legal framework documents structured according to contents provided in these Terms of Reference below and the Annex.

6. European Union and International scope

6.1. Transnational context

6.1.1. Short overview of global hydrogen initiatives and standards

6.2. EU Legal framework (please see Annex)

6.2.1. Legislation with reference to the use of hydrogen in aviation and airports;

- 6.2.2. Strategic planning documents with reference to the use of gaseous hydrogen;
 - 6.2.3. Relevant standards and technical regulations with reference to the use of gaseous hydrogen;
 - 6.3. Analysis of EU regulatory gaps and challenges
 - 6.4. Key findings
 - 6.5. Recommendations for improving EU legal framework
- 7. National legal scope for the following countries: Latvia, Lithuania, Estonia, Poland, Denmark, Sweden, Finland, Germany (please see Annex with example for Latvia, noting that it is not comprehensive and legal experts were not consulted for drafting the Annex)**
- 7.1. National regulations
 - 7.1.1. National regulations and standards regarding gaseous green hydrogen (GH2) in regards to airport infrastructure and service equipment and aircraft (including during flight):
 - 7.1.1.1. Planning, deployment, implementation and application of GH2 production of GH2 in airports or in the vicinity of the airports;
 - 7.1.1.2. transportation of GH2 to and from the airports and within the airport;
 - 7.1.1.3. storage of H2;
 - 7.1.1.4. tanking to airport fuelling vehicles with GH2;
 - 7.1.1.5. fuelling procedures for aircraft powered with hydrogen;
 - 7.1.1.6. fuelling procedures for equipment powered with hydrogen;
 - 7.1.1.7. handling of gaseous hydrogen powered aircraft (parking, boarding, disembarking of passengers, loading and unloading of luggage and freight, servicing the aircraft);
 - 7.1.1.8. use of hydrogen in other airport vehicles, that can be powered by gaseous hydrogen (ground handling services such as tankers, belt loaders, cleaning machines, pushback tugs, lavatory service vehicles, etc.);
 - 7.1.1.9. use of hydrogen airport equipment, that can be powered by gaseous hydrogen (e.g. ground power units, energy supply systems, luggage conveyors, etc.)
 - 7.1.2. National regulations regarding environmental protection of the use of gaseous hydrogen;
 - 7.1.3. National regulations regarding the safety of handling of gaseous hydrogen (including firefighting requirements);
 - 7.1.4. National regulations regarding building/construction and authorization with reference to the use of gaseous hydrogen;
 - 7.1.5. National planning documents and strategies regarding gaseous hydrogen use;
 - 7.1.6. National regulations regulating airports as critical infrastructure objects and their synergy with regulations regarding gaseous hydrogen.
 - 7.2. Analysis of national regulatory gaps and challenges concerning at least these questions:
 - 7.2.1. what is allowed regarding GH2;
 - 7.2.2. What is not allowed (at airports);
 - 7.2.3. What is needed for including a infrastructure;
 - 7.2.4. What is the process to permit the flight of a GH2 powered aircraft
 - 7.3. Necessary/optional legislative and institutional changes
 - 7.3.1. National regulatory gaps and challenges;
 - 7.3.2. Necessary/optional legislative and institutional changes;
 - 7.3.3. Recommendations;
8. **Comparative analysis regarding legal framework of geographical scope countries (Latvia, Lithuania, Estonia, Poland, Denmark, Sweden, Finland, and Germany) and on EU regulations and directives, including at least the following comparative cases in the form of matrix on subpoints 7.1-7.3**
9. **Challenges regarding uniform application of laws with reference to the use of gaseous hydrogen regarding geographical scope**
10. **Proposition for common standards/best practice on the use, storage and handling of gaseous hydrogen at airports**
11. **Summary of findings**
12. **Summary of recommendations**

13. **Annex. Context example of the feasibility study on the requirements of the national and international legal framework for the use of hydrogen at airports from Latvia (separate document, next page)**

Annex. Content example of the feasibility study on the requirements of the national and international legal framework for the use of hydrogen at airports from Latvia.

1. International conventions
 - 1.1. The Chicago Convention
 - 1.2. ICAO Global Framework for Aviation Alternative Fuels
2. European Union legal acts
 - 2.1. Regulations
 - 2.1.1. Regulation (EU) 2023/1804 on the deployment of alternative fuels infrastructure
 - 2.1.2. Regulation (EU) 651/2014 declaring certain categories of aid from EU funds compatible with the internal market
 - 2.1.3. Commission Delegated Regulation (EU) 2023/1184 Alternative Fuels Infrastructure Regulation
 - 2.1.4. Regulation (EU) 2023/2405 ReFuelEU Aviation
 - 2.1.5. Regulation (EU) 2019/2144 on requirements for motor vehicles
 - 2.1.6. Commission Regulation (EU) No 139/2014 on requirements and administrative procedures related to aerodromes
 - 2.1.7. Commission Delegated Regulation (EU) 2020/1234 on provision of apron management services
 - 2.1.8. Commission Regulation (EU) No 965/2012 on technical requirements and procedures related to air operations
 - 2.1.9. Commission Delegated Regulation (EU) 2023/1185 greenhouse gas emissions savings from transport fuels
 - 2.1.10. Regulation (EU) 2024/1735 on establishing a framework for strengthening Europe's net-zero technology manufacturing
 - 2.2. EU Directives
 - 2.2.1. Clean Vehicles Directive (EU) 2019/1161
 - 2.2.2. Renewable Energy Directive 2018/2001 (RED II)
 - 2.2.3. The New Renewable Energy Directive (EU) 2023/2413 (RED III)
 - 2.2.4. Directive (EU) 2023/1791 on energy efficiency
 - 2.2.5. Directives relating to the production, storage, refuelling and transport of hydrogen
3. European Union Strategic Planning Documents
 - 3.1. EU Hydrogen Strategy
 - 3.2. Sustainable and Smart Mobility Strategy
 - 3.3. REPowerEU plan
4. Latvian regulatory framework for the use of hydrogen in aviation and airports 30
 - 4.1. Laws and draft laws
 - 4.1.1. Draft Law on Transport Energy
 - 4.1.2. Law "On Aviation"
 - 4.1.3. Law "On Environmental Impact Assessment"
 - 4.1.4. Protection Zone Law
 - 4.1.5. Law "On Pollution"
 - 4.1.6. Law "On Technical Supervision of Dangerous Equipment"
 - 4.2. Requirements of the Cabinet Regulations on hydrogen refuelling equipment, hydrogen handling, environmental protection and workplace safety

- 4.2.1. Requirements for electric vehicle charging, natural gas refuelling, hydrogen refuelling and shore-side electrical supply installations
- 4.2.2. Requirements for Technological Equipment of Petrol Stations and Procedures of Technical Supervision of the Equipment
- 4.2.3. Regulations on Establishment, Certification and Operation of Civil Aviation Aerodromes
- 4.2.4. Regulation Regarding Environmental Protection Requirements for Service Stations, Oil Terminals and Tank Containers
- 4.2.5. Occupational safety requirements for work in potentially explosive environments
- 4.2.6. Procedures for the performance of air transport of dangerous goods and dangerous goods
- 4.2.7. Procedures for requesting permission of the Civil Aviation Agency to construct, install and place objects potentially hazardous to the safety of aircraft flights and recording the objects dangerous to aircraft flights
- 4.2.8. Procedures for Granting Access to the Airport Ground Handling Market
- 4.2.9. Procedures for the construction and modification of civil aircraft, the manufacture of certain aircraft parts, appliances and accessories and aircraft maintenance
- 4.2.10. Regulations regarding Recognition of Aircraft Airworthiness
- 4.2.11. Procedures for Surveying Critical Infrastructure, Including European Critical Infrastructure, and for Planning and Implementation of Security Measures and Continuity of Operation
- 4.2.12. Road Traffic Regulations
- 4.2.13. Requirements for Green Public Procurement and Procedures for the Application Thereof
- 4.2.14. Fire Safety Regulations
- 4.2.15. Procedures for Identifying and Determining Objects of Increased Danger, as well as for the Planning and Implementation of Civil Protection and Disaster Management
- 4.2.16. Industrial Accident Risk Assessment Procedures and Risk Reduction Measures
- 4.2.17. Regulations regarding Dangerous Equipment
- 5. Standards for airport operations and hydrogen use
 - 5.1. International standards
 - 5.1.1. Standards of the International Organisation for Standardisation (ISO)
 - 5.1.2. European standards
 - 5.2. National standards
 - 5.2.1. Draft Latvian standards
 - 5.2.2. USA industry standards for hydrogen safety
- 6. Latvian Development planning documents related to the use of Hydrogen
 - 6.1. Latvia's Territorial Just Transition Plan
 - 6.2. Updated National Energy and Climate Plan
 - 6.3. Transport Development Guidelines
- 7. Gaps in the regulatory framework initially identified and proposals for improvement