

## LOW WATER CONDITIONS ON THE RHINE: HIGH QUALITY DISCUSSIONS AND CONTRIBUTIONS AT THE CCNR WORKSHOP

Ref: CC/CP (23)01

Four years have passed since the Central Commission for the Navigation of the Rhine (CCNR) organised the low water workshop, in Bonn. One of the main conclusions of this workshop was the need to intensify the dialogue between the main stakeholders to address the low water issue. This being so, the CCNR organised an [experts and follow-up workshop on “Low water periods and their impact on the navigation of the Rhine”](#) on 18 January 2023, in Strasbourg and online. The presentations given during this workshop were of high quality and extremely rich. They also afford high hopes that this age-old low water phenomenon can be tackled.



### LOW WATER CONDITIONS AND INLAND WATERWAY TRANSPORT

The occurrence of low water conditions in 2022 was a renewed reminder that this phenomenon is an urgent concern, with significant **ecological, economic and social impacts**. With climate change, this phenomenon could become even more acute in future.

*“We must all join in preparing for longer periods of drought and for more extreme events.” Judith ter Maat, Commission for the Hydrology of the Rhine basin (CHR)*

It is important to recall that low water phenomena are nothing new, the past 200 years having seen 15 more severe occurrences than that of 2018. However, the **inland navigation sector’s vulnerability** to this phenomenon has increased in recent years for several reasons, in addition to climate change and extreme weather conditions. For example, we could cite larger vessels and the “just-in-time” principle.

But the inland navigation sector has a vital role to play in achieving the **ambitious modal shift and emission reduction targets** in the transport sector that have been set at international level, such as the [Mannheim Declaration](#) and the [EU’s Green Deal](#). Inland waterway transport will continue to be indispensable, especially for carrying large freight volumes for which there is no readily available alternative, or for the transport of heavy and bulky goods. However, the representatives of the inland waterway transport profession have been able to testify to the tangible impact of these low water periods on the inland navigation sector, in particular the very high risk of a reverse modal shift or seeing certain shippers becoming more reluctant to opt for IWT. To reduce emissions and meet the sector’s needs, it is

more essential than ever to ensure that **inland navigation** remains an **efficient and reliable mode of transport**. The inland navigation sector’s resilience in the face of these low water phenomena needs to be improved in the short, medium and long term.

### LEVERS FOR ACTION IN THE INLAND NAVIGATION SECTOR

In light of the various presentations and discussions, the CCNR workshop highlighted **four levers** for making the Rhine navigation more resilient.

**Digital tools** are a first lever for reducing the impact of low water levels on inland navigation. Progress has been made since 2018 as regards **forecasting tools** for water levels on the Rhine. The German authorities are therefore providing forecasts of the water level 14 days ahead and of the river flow and water level 6 weeks ahead for seven Rhine gauges relevant to navigation. Improvements are still possible with, for example, longer term forecasts – up to 6 months ahead – or greater forecasting accuracy. BASF and thyssenkrupp pointed out that these forecasting tools were an **essential lever for preparing for an impending low water event**. Finally, other digital tools may yet be developed, such as **100-year projections** of discharges and water levels and the **development of waterway digital twins** for proposing alternative river routes – where available – depending on the low water situation.

*“It will be important to know whether these findings are useful for waterway users, so that science can be transformed into a service.” Enno Nilson, Federal Institute of Hydrology (BfG), Germany*

A second lever is **infrastructure**. It is important to note that when implementing infrastructure-related measures, it needs to be borne in mind that they are required to comply with other regulations. Overall, namely from an environmental, societal, and economic perspective, it is also necessary to ensure that the benefits outweigh the disadvantages. These measures therefore need to be seen in a longer term perspective. However, actors in the freight and passenger transport sector emphasise the **need for infrastructure measures**, especially given the **sensitivity of the Middle Rhine** to low water levels. The freight sector is crucial for supplying numerous companies and for shipping their finished products. For example, 80% of freight transport volumes on the Rhine from and to the BASF production site in Ludwigshafen need to pass the Kaub bottleneck. The package of measures in the [“Rhine low water” action plan](#) (8-point-plan), which was initiated in Germany in 2019, includes two infrastructure measures for the Middle and Lower Rhine. Due to the urgency of the situation, the German authorities have also set up a commission to expedite matters for the project to remove bottlenecks along the Middle Rhine.



## CCNR

CENTRAL COMMISSION  
FOR THE NAVIGATION OF THE RHINE

**Palais du Rhin**

2, place de la République - CS10023  
F - 67082 Strasbourg Cedex

Tel. **+33 (0)3 88 52 20 10**

Fax +33 (0)3 88 32 10 72

[ccnr@ccr-zkr.org](mailto:ccnr@ccr-zkr.org)

[www.ccr-zkr.org](http://www.ccr-zkr.org)

*"It is urgent to eliminate the bottlenecks on the Middle Rhine and I call on the public authorities to accelerate the implementation of the necessary infrastructure measures and to provide the required budgetary and human resources. The survival of inland waterway transport on the Rhine is at stake!"* Theresia Hacksteiner, European Barge Union (EBU) and IWT Platform

The third lever for action concerns the **vessels**. Greater interest is being seen for **research projects** to do with navigation during low water periods, as attested to by the Novimove project. BASF, for its part, has invested in the newbuild of dedicated vessels, capable of operating under low water conditions. These two examples are proof positive of the inland navigation sector's adaptability. The challenge is to develop innovative vessels capable of operating during low water conditions while remaining economically viable. The **importance of public funding**, already available for example in Germany for the modernization of the existing fleet, should not be underestimated.

Finally, the **shippers and logistics sector** are a fourth lever. For example, in addition to its newbuild-activities, BASF has entered into long-term chartering contracts with operators equipped with barges still capable of operating when water levels are even lower. Thyssenkrupp pointed out that additional onsite and near site inventory, optimized material handling and well-prepared communication about current situation and priorities also help mitigate but not completely resolve the effects of low water. Thomas Maassen, of Rhenus, demonstrated the economic impact of adding barges to a pushed convoy during low water periods to transport the same quantity. This being so, he invited the CCNR to look again at crew regulations to take account of the new challenges facing the inland navigation sector, including low water conditions. Finally, **better inclusion of multimodality** remains an option. Indeed, during low water periods, a temporary modal shift to other modes may also be an option for enabling certain products to be transported, in particular containers, as the Port of Strasbourg has pointed out.

The CCNR workshop demonstrated that the enormous challenge posed by low water conditions can only be met by a **package of measures incorporating the four levers for action** referred to above. Just as there is no silver bullet, nor is there a single actor capable of solving every problem. This being so, it is important to **encourage private and public initiatives** and to catalyse collaborative actions to ensure **sustainable use** of the inland waterway transport system, striking a fair balance between the many uses of the Rhine. Over the past 200 years, the CCNR has demonstrated its ability to adapt to new challenges. This being so, Theresia Hacksteiner,

representing the profession, called for "strong cross-border cooperation between the Member States, the Rhine being a common good". The CCNR is certainly the appropriate forum for encouraging such cross-border, but also inter-institutional, multidisciplinary and multi-sectoral collaborative ventures.

### **A BENEFICIAL FOLLOW-UP WORKSHOP, TO BE REPEATED**

The diversity of the parties involved in the CCNR's workshop on 18 January 2023 enabled valuable contributions to be gathered, which will help the CCNR to improve and develop the **reflection paper "Act now!"**. Following on from the workshop held in 2019, this paper provides **statistics** on low water events and their impact, a **catalogue of measures** in progress and future projects, as well as short, medium and long-term **solutions**.

*"What I personally hope for is that this workshop will contribute to a more intensive dialogue between industry, logistics and the political world, culminating in a more resilient inland navigation sector."* Urs Maurer, workshop Chair and member of the Swiss delegation to the CCNR

The subject is complex and there are major challenges. The CCNR workshop confirmed the need for **greater dialogue between the key actors** on future measures for adapting to low water conditions, and **strong cross-border cooperation** between the Member States. Events such as the CCNR workshop make for a better understanding of these numerous challenges and are an opportunity to exchange different perspectives and **develop common visions**. To support and encourage these discussions, the CCNR will continue to organise these "Low water talks" at regular intervals over the next years.

The workshop presentations are available on the CCNR website: <https://www.ccr-zkr.org/13020156-en.html>



### **ABOUT THE CCNR**

*The Central Commission for the Navigation of the Rhine (CCNR) is an international organisation that exercises an essential regulatory role in the navigation of the Rhine. It is active in the technical, legal, economic and environmental fields. In all its areas of action, its work is guided by the efficiency of transport on the Rhine, safety, social considerations, and respect for the environment. Many of the CCNR's activities now reach beyond the Rhine and are directly concerned with European navigable waterways more generally. The CCNR works closely with the European Commission as well as with the other river commissions and international organisations.*



## **CCNR**

CENTRAL COMMISSION  
FOR THE NAVIGATION OF THE RHINE

**Palais du Rhin**  
2, place de la République - CS10023  
F - 67082 Strasbourg Cedex

Tel. **+33 (0)3 88 52 20 10**  
Fax +33 (0)3 88 32 10 72

[ccnr@ccr-zkr.org](mailto:ccnr@ccr-zkr.org)  
[www.ccr-zkr.org](http://www.ccr-zkr.org)