RH₂INE Global Project: Kickstart IWT

To reach market-readiness in 2030 for zero-emission IWT, the work on 5 ships has started in 2020

CCNR Workshop 20 April 2021

ALTERNATIVE ENERGY SOURCES FOR ELECTRICAL PROPULSION SYSTEMS
Agenda

1. Introduction RH2INE
2. Timeline skippers in RH2INE & budgets
3. Learnings & recommendation
Introduction RH₂INE

Klaas van Staaldhuine (province Zuid-Holland)
RH2INE goals & ambitions

Aiming for: integrated system of guaranteed demand & supply of clean Hydrogen on the Rhine Alpine corridor.

• Systemchange by using a value-chain-approach,
• Stimulating innovation & standardisation, preparing for scale-up
• Kickstarting in IWT
• making the maritime & energy sector ready for the Next-Generation

Results on short term: 12 ships & 3 HRS before 2025

Funding and regulation is requested now!
RH2INE: the Rhine Hydrogen Integration Network of Excellence
First Results | From ambition to project RH$_2$INE Kickstart IWT

<table>
<thead>
<tr>
<th>RH$_2$INE IWT</th>
<th>Q1 2021</th>
<th>Q2 2021</th>
<th>Q3 2021</th>
<th>2022</th>
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<td><strong>Phasing</strong></td>
<td>Explore for IWT</td>
<td>Concept select per coalition</td>
<td>Investment decision</td>
<td>Execute</td>
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| **Activities**| • Research studies (CEF)  
                  • Financing program  
                  • Regulatory program  
                  • Center of Excellence  
                  • Lobbying |
|               | • Choice concept / technology  
                  • Business case  
                  • Agree on finance gap, need for subsidy  
                  • Apply for subsidies  
                  • Initiate required approval processes |
|               | • Detailed design  
                  • Arrange financing  
                  • Contract demand  
                  • Arrange required infrastructure  
                  • Decision making |
| **Definition of success** | • Letter of Intent  
                             • Operational coalition  
                             • First view on feasibility |
|               | • Confirmed financing program  
                             • MoU coalition(s)  
                             • Technical standards  
                             • Subsidy application |
|               | • Approvals granted  
                             • Subsidy granted  
                             • Go-decision |
|               | • Order equipment  
                             • Record learnings  
                             • Continue innovation |
|               | • Successful introduction  
                             • Continuation program |
RH₂INE Kickstart Study

• First project within RH2INE Programme
• Co-financed by CEF Transport (>august 2021)
• Activities:
  – Scenario building: Bunker/Containment/Demand scenarios
  – Safety and regulatory aspects for H₂ bunkering
  – Design of H₂ bunkering locations (including costs and benefits)
  – Possible locations for H₂ bunkering in the 3 ports (Rotterdam, Duisburg, Neuss/Düsseldorf/Köln)
IWT in Europe- EU Green Deal and Mobility Strategy

• “As outlined in the European Green Deal, the result will be a **90% cut in emissions by 2050**, delivered by a smart, competitive, safe, accessible and affordable transport system.”

• The Smart Mobility Strategy (SSMS) seeks to increase the share of Inland Waterway Transport (IWT) by 25% by 2030 and by 50% by 2050.

• “By 2030: **zero-emission marine vessels will be market-ready**”
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RH2INE: Timeline skippers

-> 12 ships before 2025 (Germany, Netherlands & Belgium)
-> Conditions: funding & regulation!
RH2INE Budgets 2021-2024

CAPEX for 12 vessels by 2025

- Grand Total: 184,1 Mln
- FPS: 55,8 Mln
- HTS: 36,9 Mln
- NPRC: 60,0 Mln

Source date 01-03-2021, excl infra 20,1 million

Current potential funding 12 vessels

- Private investments: 77,8 Mln
- Total potential public funding: 21,4 Mln
- Funding gap: 106,9 Mln
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Learnings & recommendation

Marjon Castelijns (Future Proof Shipping)
Learnings & recommendation FPS - Maas

The exemption process for the FPS – Maas
- The early kick-off presentation about the upcoming project was positive and useful, at the start of an extensive process.
- The concept design (first info) shared should be sufficiently detailed. Questions of CCNR RVG working group members helped to improve the design safety.
- Simultaneous process HAZID- CCNR; allows for adjustments of the shipdesign in parallel process, shortening the total timeline.

Recommendation
The RH2INE consortium offers the use of the information collected in the CEF-funded kickstart study as well as their consortiumpartners for the upcoming regulation process.
All aboard?

For more information contact the RH₂INE-team:

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