

September 8th, 2022

e4ships & Zero-Emission Shipping Symposium 2022

OPENING SPEECH: The National Innovation Program Hydrogen & Fuel Cell Technology (NIP) and the role of maritime projects in the development of the market

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PORTFOLIO FOR CLIMATE-NEUTRAL SOCIETY & MOBILITY

Coordination of support programmes, technology advice, networking



National Innovation Programme

For hydrogen and fuel cell technology



Electro Mobility on Site



National Center for Charging Infrastructure



Mobility and Fuels Strategy



National Hydrogen Coordination Office



Promotion of Commercial Vehicles with Alternative Drives

within the Energy & Climate Fund



Promotion of Renewable Fuels

within the Energy and Climate Fund



National Networking of Competence

For Sustainable Mobility (NaKoMo)



Improving mobility in rural areas

to create equivalent living conditions (MogLeb)



Digitalisation of Local Transport Systems



Export Initiative for Environmental Technologies



Mission Innovation – Hydrogen Mission



Promotion of Alternative Drives

for bus and rail transportation



LNG-Bunker Vessels

Measure of BMWK from the economic stimulation package



INNOVATION CLUSTER - E4SHIPS

Developments for climate-friendly shipping since 2009






GOAL: TECHNOLOGY DEVELOPMENT - KNOWLEDGE TRANSFER - REGULATIONS DEVELOPMENT

Elektra 1

Elektra 2



 Inland
 NT-PEM
 Hydrogen

RiverCell 1

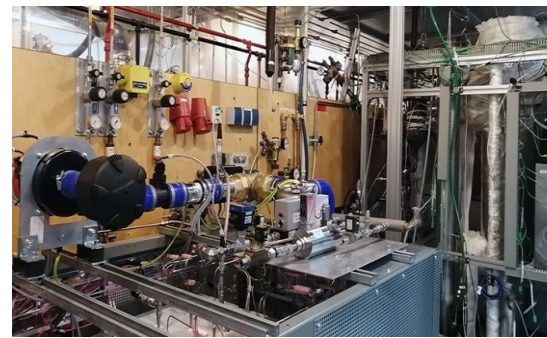
RiverCell 2



 Inland
 HT-PEM
 Methanol

SchIBZ 1

SchIBZ 2 & MultiSchIBZ



 Sea
 SOFC
 Diesel & LNG

PaXell 1

PaXell 2



 Sea
 HT-PEM
 Methanol



Europäischer Ausschuss für die Ausarbeitung
von Standards im Bereich der
Binnenschifffahrt



OVERALL CONCEPT FOR RENEWABLE FUELS

BMDV funding strategy

PILLARS I AND II: Development and demonstration

Funding guideline for R&D
on renewable fuels

- published
- active until 2024

Development platform for PtL fuels

- selection process is currently ongoing



PILLAR III AND IV: Production and market ramp-up

Funding guideline for investing
in fuel production

- Publication is not expected before end of 2022/ beginning of 2023
- EU notification pending

Funding guideline for market
uptake of PtL-kerosene

- Planned publication end of 2022/ beginning of 2023
- EU notification pending

PILLAR I: FUNDING GUIDELINE FOR R&D ON RENEWABLE FUELS

GOAL

- Development and demonstration for the production of renewable fuels (electricity-based fuels and advanced biofuels)
- Feasibility studies, innovation clusters and innovation support services



SCOPE

**Current evaluation ongoing:
Special Call - Development of
Renewable Ship Fuels**



Production of PtX-Fuels

Further development and optimisation



Optimisation of existing production processes

e.g. decoupling of multi-stage processes



Innovative electrolysis technologies

e.g. in combination with e-fuel systems



System coupling

Coupling biofuels and E-Fuels production



Liquid and gaseous biofuel production

Further development and optimisation



Development of CO₂ negative fuels

e.g. storage of process-related carbon

OUTLOOK FOR FURTHER DEVELOPMENT OF E4SHIPS



Enlarging the scope of e4ships by merging the on-board fuel cell energy perspective with the renewable fuel perspective to ensure and to strengthen the energy transformation and further application of fuel cells in maritime applications on the way to climate-friendly shipping.



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