Welcome to the WIC meeting!



AGENDA



10.00-10.05: Welcome by Vice-President Oil-free Air Division Atlas Copco

- 10.05-10.10: Intro new CEO WaterstofNet
- 10.10-10.40: New WIC members presentations
- 10.40-11.00: Guest speaker Markus Hagedorn, H2Pro: E-TAC, a revolutionary hydrogen production method
- 11.00 11.20: Guest speaker Marjon Castelijns, Darel: Condor project; swappable H2 containers for inland navigation
- 11.20-11.35: News from cluster members
- 11.35-11.40: Coming WIC events
- 11.40-11.45: Break
- 11.45-13.15: Atlas Copco activities & factory tour (+bus transfer)
- 13.15-14.30: Network lunch at Salons Van Edel

NEW CLUSTER MEMBERS SINCE JUNE '23













NEW MEMBERS PRESENTATION TODAY



EUROPORTS



architects +engineers











Parker Hannifin

Kurt De Lannoye

Sales Leader Instrumentation & Engineered Materials



ENGINEERING YOUR SUCCESS.

About the company

Parker Hannifin is a global leader in motion and control technologies. For more than a century the company has engineered the success of its customers in a wide range of diversified industrial and aerospace markets. Every day our highly engaged team members are taking action to demonstrate how our interconnected portfolio of motion and control technologies is critical to enabling a cleaner and more sustainable world.



Your hydrogen ambitions/plans

- As a broad producer of components and solutions we have many technologies that fit in the hydrogen market: filtration, cooling, hose&fittings, instrumentation, nitrogen generators and sealing solutions. It is our mission to become the global leading component supplier in the Hydrogen industry
- We have joined the cluster to learn more about the general needs in the hydrogen market and specific customer needs



Hydrogen projects

- We have started supply of air coolers and hydraulic coolers to leading electrolyzer builders and we will shortly start producing stack seals. We are preparing to start produce full utility containers for use in electrolyzers
- Since there are many new developments in the market we would like to get together with our partners in the engineering phase of the projects so we can give support with our full engineering strength











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expertises and solutions



* acoustical engineering	* architecture (healthcare)	digital engineering
* M&E engineering	* fire safety engineering	* facade engineering
 roads, water & public space engineering 	* structural engineering	* sustainable design

masterplanning	feasibility study	sustainability assessment
life cycle cost analysis	building simulations	VR simulations
building physics	performance gap management	reconversion design
sustainability tracking	occupancy evaluation management	digital twin management





organisation structure





let our projects speak for themselves



buildings



Law Courts Antwerp BE



De Krook Ghent BE



ZIN Brussels BE



Concertgebouw Bruges BE



Wintercircus Ghent BE



Casino Middelkerke BE



Nieuw Zuid Antwerp BE



Oxy Brussels BE



Royal Hamilius Luxembourg L



Bei der Kueben Angelsberg L



healthcare



UZ Gent Ghent BE



ZN



ZNA Cadix Antwerp BE



Sint-Maarten GH Mechelen BE



CH des Viviers Charleroi BE



H. Familie mental health Kortrijk BE



Sint-Jozef mental health Pittem BE



Liege BE

Milton Keynes ER Milton Keynes UK



H. Catharina senior living Zonhoven BE



H. Familie senior living Deerlijk BE





New Brussels X Brussels BE



De Baronie



Bruges BE





Boortmalt Antwerp BE



InnovOcean Ostend BE



Alpro Wevelgem BE



Sango Mechelen BE



BioScience Leuven BE

Aalst BE



Emaphos 2 Casablanca MA



SoyBean Crushing Co. Yanbu SA



infrastructure



Oosterweel Antwerp BE





Groene Boog Rotterdam NL



Beatrix lock Nieuwegein NL



District Créatif Charleroi BE



Square Sint-Pieters Ghent BE



North Sea Port Ghent BE

Scheldt tunnel

Antwerp BE



Gijzelbrechtegem Anzegem BE



Haren prison Brussels BE



Landexplo Berlare BE



Our hydrogen ambitions

* The use of green hydrogen in buildings

- Through gas grid from central source
- O Distribution via local gas grid for residential and industrial areas
- Produced in the building e.g. photovoltaic panels.
- * 2025: natural gas connections for new buildings will be forbidden.
- * Alternative solution for gas–free heating and cooling with heat pumps, especially for e.g. refurbishments of apartment buildings in densely populated areas



Our hydrogen projects

- * Gather knowledge about the applications
- * Fuel cells for sanitary warm water production in big houses
- * Proposition of fuel cells in competitions for non-residential buildings as an alternative for classic combined heat and power production
- * No concrete realization



Source: Net Zero Home Heating With Hydrogen (buildwithrise.com)



Contact info



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HERE TO STAY

www.vk-architects-engineers.com



Helicus

Alexander Roets – Business development

ENABLING AUTOMATED & INTEGRATED DRONE SERVICES

First EU medical cargo transport by passenger drone (10 blood bags)

Alexander.Roets@Helicus.com

+32 479 50 61 00

Automated & integrated drone logistics



Automated & integrated drone logistics





Automated & integrated drone logistics

←→ Authorisation







Kathline Versavel

Kathline.Versavel@somarine.be



Service provider

- Supply of inland barges
- Commercial support
- Design of barges
- Follow-up and support in new-building projects

Efforts Inland shipping today

26

- Efficiency in transporting big volumes
- Double hull barges
- Reducing emissions
- Retrofitting existing barges

Green deal

Hydrogen solutions

Future



Teamwork

Green methanol

Innovating newbuilding projects



27



Kathline Versavel

Kathline.Versavel@somarine.be



HYSTER ZERO EMISSION PORT EQUIPMENT

WATERSTOF INDUSTRIE CLUSTER MEETING - ANTWERP THURSDAY SEPTEMBER 21, 2023

NIEK WILLEMS, GLOBAL BUSINESS DEVELOPMENT MANAGER

NIEK.WILLEMS@HYSTER-YALE.COM

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HYSTER-YALE MATERIALS HANDLING





Transforming the way the world moves materials from Port to Home



Hyster-Yale Materials Handling, Inc. (NYSE: HY)

- 2022 revenue = USD 3.7B
- # of Employees = ~8200
- Hyster = Full Line Material Handling supplier from 1T 52T
- Nuvera = Hydrogen Fuel Cell manufacturer



Hyster[®] Big Trucks manufactured in Nijmegen, The Netherlands

Full Lift Truck Product Line - Over 600 Different Truck Models Available

HYSTER[®] PORT EQUIPMENT





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HYSTER[®] HYDROGEN PROJECTS UNDERWAY



H2 TERMINAL TRACTOR

In assembly

- Initial prototypes targeted to be available in end 2023 for market testing
- 1st European H₂ deployment in Hamburg, Germany



H2 REACHSTACKER

Delivered at MSC Valencia

- 1st Hyster RS H₂ fuel cell pilot
- H2Ports EU funded project
- Delivered in Aug 2023
- Currently under commissioning



H2 EMPTY CONTAINER HANDLER

Design in Progress

- Assembly in late 2023
- 1st European H₂ deployment in Hamburg, Germany



H2 TOPLOADER (LADEN CONTAINER HANDLER)

Delivered at FMS LA (USA):

- 1st ever H₂ fuel cell pilot
- Delivered and in operation (dec 2022)



HYDROGEN PROJECT OPPORTUNITIES WITH HYSTER®



HYDROGEN FC REACHSTACKER

- Learner program with Hyster: full-service support
- Looking for site with hydrogen availability or joint development for H2 deployment
- When: 12-18 months able to deploy



- 2X 45kW Nuvera[®] Fuel Cell power
 - 130kWh Battery
 - Up to 12 hours till refill
- Max 15 min. refill*

HYDROGEN FC EMPTY CONTAINER HANDLER

- Learner program with Hyster: full-service support
- Looking for site with hydrogen availability or joint development for H2 deployment
- When: 12-18 months able to deploy



- 1X 60kW Nuvera[®] Fuel Cell power
- 130kWh Battery
- Up to 12 hours till refill
- Max 15 min. refill*

TOGETHER, WE MAKE IT HAPPEN



WE OFFER

- ZERO EMISSION PORT EQUIPMENT TO ELIMINATE EMISSIONS
 - HYDROGEN FC
 - BATTERY ELECTRIC
- EXPERTISE ON TRANSITION
 - ELECTRIFICATION IMPACT (H2 VS BEV)
 - CONSULTING ON BEST SOLUTIONS FOR CUSTOMER APPLICATION
- JOINT DEVELOPMENT LEARNING TOGETHER!
 - SHORT TERM: PILOT PROJECTS
 - MID-LONG TERM: FULL FLEET TRANSITION SOLUTION
- RELIABLE PARTNER FOR THE LONGER TERM
 - 90+ YEARS IN BUSINESS

WE NEED

- HYDROGEN SUBJECT MATTER EXPERTS TO COLLABORATE ON OFFERING THE Total Hydrogen Solution
- END USERS TO UNDERTAKE A JOINT DEVELOPMENT JOURNEY
- HYDROGEN AT AN ACCEPTABLE PRICE, ALSO FOR LOWER VOLUME
- SCALABLE SOLUTIONS ON HYDROGEN SUPPLY (OPEX VS CAPEX)
- <u>FUNDING OPPORTUNITIES</u> TO HELP END CUSTOMERS FUND THE ZERO Emission transition



THANK YOU

NIEK WILLEMS

MANAGER, BIG TRUCK GLOBAL ACCOUNTS &

GLOBAL BUSINESS DEVELOPMENT

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+316-83530799



About us

Euroports is one of the largest port infrastructure operators with a wide footprint of 40 seaport terminals and 10 inland terminals and logistic platforms globally, strategically located on key trade routes in Europe and China.

Each year we handle approximately 65 million tons of essential commodities (bulk, breakbulk, containerized goods and liquid).






Needs concerning hydrogen & equipment as potential end-user

- Global fleet of 1000+ vehicles and equipment, primarily diesel-powered
 - Mobile harbor cranes
 - STS cranes
 - Reach stackers
 - Empty-container handlers
 - Forklifts
 - Tug masters
 - Payloaders
 - Excavators
 - Trucks
 - ...
- Diesel consumption in terminal operations represents a significant portion of GHG emissions
- Decarbonization target of reducing absolute GHG emissions (S1+S2) with 40% by 2030 (vs 2020) and becoming carbon neutral by 2050



TOTAL GREENHOUSE GAS EMISSIONS (in tons of CO₂e)



source: Sustainability report 2022

≋EUROPORTS

source: Sustainability report 2022

Opportunities concerning hydrogen & alternative fuel types

- Follow up on hydrogen market and innovations in port equipment
- No use of hydrogen yet, but we see the first hydrogen-powered machines come out and become commercially available
- Considering/testing alternatives for diesel-powered equipment in a realistic port operation environment
 - electrification (small equipment, limited driving distance, limited power)
 - alternative fuels (larger equipment, longer driving distance, greater power)
 - hydrogen (larger equipment, longer driving distance, greater power)
- Gain insights in operational use, permits, supply, costs etc.



AWE WIC 21 September 2023

Polyester done differently















Manufacturing Facilities



Distribution Businesses

Including Lano









ASSOCIATED WEAVERS

Creator of Concepts

Our company



Founded

1964

Plants

Ronse, BE Liberec, CZ

Sales Offices

Halifax, UK Salzkotten, DE

Associated Weavers 2022





684
EMPLOYEES



Andere cijfers

- Geïnstalleerd thermisch vermogen: 80 MW
- VER bedrijf -> jaarlijkse emissies: 9 000 ton CO₂ (EU ETS)
- Elektrisch verbruik: 11 000 MWh/jaar
- Gasverbruik: 50 000 MWh/jaar
- Geïnstalleerd PV vermogen: 2,7 MWp
- Deelname EBO

Tufting

More than 50 years experience



Dyeing & Printing

116 176

A wide range of colours and designs

Residential carpet

↗ Rolls 4/5 meter width Cut-length carpet

 \mathbf{N}



Polyamide Polyester Polyolefin Solution Dyed Nylon



Commercial carpet

Especially developed for...



♡ Care

111

1 1 1 1- 1-

🗋 Retail









Rugs

Tailor-made Rugs



MISURA® TAILOR-MADE RUGS





Hoe klimaatdoelstellingen halen?

Minus 55% tegen 2035, Net-zero tegen 2050,...

Scope 1:

- 1. Energieverbruik \downarrow -> Energie-efficiëntie (EBO)
- 2. Elektrificatie -> ter vervanging van gas
- 3. Alternatieven voor fossil fuels -> waterstof

Hoe klimaatdoelstellingen halen ?

Minus 55% tegen 2035, Net-zero tegen 2050,...

Scope 2:

- 1. aandeel groene stroom \uparrow (PPA)
- 2. Groenestroomproductie on site (reeds 15% uit PV)

Scope 3:

Hoe klimaatdoelstellingen halen?

Minus 55% tegen 2035, Net-zero tegen 2050,...

Scope 3:

Voorbeeld Econyl:

(Recycled PA pile yarn made of regenerated PA6 (mostly ocean waste)

Sedna[®] made with **Econyl**® yarn

Infinite

regeneration

of polyamide 6

TRANSFORMATION INTO ECONYL® NYLON YARN

RE-COMMERCIALIZATION



(



ECONYL* REGENERATION PLANT





ECONYL®





Ecology & Emotion

Regenerated Nylon





Data on craddle-to-gate Carbon Footprint

YARA – Regenerated PA 6 pile yarn Carbon footprint = **7,0393 kg CO2eq/m²**



77% CO2 reduction

Standard PA carpet PA 6 pile yarn Carbon footprint = 30,5979 kg CO2eq/m²













fueling tomorrow



September 27, 2023

Proprietary & Confidential. Copyright © 2023 H2Pro, Ltd

H₂PRO's technology will enable affordable green hydrogen. This decade.



H2Pro in brief

- Developing a breakthrough and patented electrolyzer technology
- Established 2019 based on research at Technion
- MW-scale pilot system under construction
- Raised over \$100 Million



Investors



Technology



Conventional electrolysis: expensive & inefficient

High OPEX

- Large power loss (> 30%)
- Mainly due to the oxygen evolution reaction (OER) overpotential (> 0.4 V)
- Degradation of membrane (loss of efficiency and exchange)

• High CAPEX

- Complex design, hard-to-automate production
- Expensive materials, maintenance
- Limited production pressure
- Compressors: inefficient and expensive
- Slow progress in last 100 years





67

H2Pro E-TAC: a new way to split water

PHASE 1

Generate hydrogen. Consume electricity.

- Anode is "charged" and transformed: nickel hydroxide ⇒ nickel oxyhydroxide
- No need for a membrane





H2Pro E-TAC: a new way to split water

• PHASE 2

Generate oxygen. No electricity consumed.

- Electrolyte replaced with warm electrolyte
- Warm electrolyte expedites the "discharge" of oxygen (O₂) at the anode



E-TAC cycle & heat management

- Hydrogen generation is endothermic (consumes heat)
- Oxygen generation is exothermic (releases heat)
- The two processes balance out. No external heating or cooling required





Design on a system level

- Multiple sets connected to common Balance of Plant (BOP)
- BOP consists of separation vessel, pumps, valves and heat management
- Continuous hydrogen production



What are the key technology advantages?

This novel process is distinct in three key ways:



Development systems and product




Pilot Projects 0.4 MW Pilot system



Production and go to market



Pilot system production line

- Automated electrodes production line Small scale factory
- Will be used for pilots and R&D



Modular scale up strategy to commercial systems



H₂PRD

thank you!

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Key note CONDOR project



Hydrogen shipping

A RH₂INE zero-emission shipping project











Pathways to emission reduction for IWT





Mission, vision & goal statements

Mission

Condor H2 accelerates the transition to zero-emission shipping in inland and near-shore shipping with 5 to 10 years, by advancing collaboration between all essential parties across the value chain.

Vision

Zero-emission shipping on hydrogen will be competitive before 2035. This is required to achieve near-zero emission inland shipping sector by 2050.

Goal

Remove major hurdles inland shipowners encounter when switching to hydrogen-electric ships before 2030 to achieve operational, technical and financial feasibility of zero-emission H2 ships before 2035.

Scale-up and phasing- Inland H2-electric ships



Current transition path towards zero-emission inland shipping



	2020	2025	2030	2035	2040	2045	2050
100% Zero-emission inland ships	-	3	15	20	50	100	200
Hybrid/ part zero-emission ships	-	5	50	80	100	300	600
Non Zero-Emission inland ships	10.000	9.992	9.880	9.850	9.850	9.600	9.200

Scale-up and phasing- H2-electric ships



Condor H₂



How to achieve this?

Introducing **Modular,** standardised & scalable solutions, electrification as "no-regret"

1.

2. Facilitating necessary regulations and policies 3. Reducing and facilitating the necessary investments for shipowners 5.
 Facilitating an open & flexible hydrogen supply market for shipping 4.

Supporting construction & retrofit of **50 ships** by 2030, inland and short-sea





Current Condor H2 consortium partners

Group	Party
Bank/ investor	Rabobank
	КВС
Shipping	BCTN
	Naval shipping
	NPRC
	DFDS
	Future Proof Shipping
	HTS Maritiem
	Theo Pouw B.V.
	Verenigde Tankrederij
	Samskip
H2 suppliers	Air Liquide
	Air Products
	BP
	Engie
	EOLY/Virya
	Inovyn
	Linde
	Roger Energy
	Shell
E-ship design/ build	Concordia Damen
	Koedood
	Marin
Fuel Cells	Ballard
	Nedstack
	Zepp Solutions

Group	Party
H2 tanktainers/ logistics	Blue H Engineering
	Cryovat
	H2storage BV
	NPROXX
	Umoe
	VITRITE Middelburg
H2 logistics/ trade	Rotterdam Shortsea Terminal (RST) Schenk Tanktransport
	FinCo
Ports	Port of Antwerpen Brugge
	(Port) Nijmegen
	Port of Rotterdam
	Port of Amsterdam
	Port of Duisburg
	Northseaports
Other stakeholders	De Vlaamse Waterweg
	Provincie Zuid Holland
	Provincie Noord Holland
	Waterstofnet
	EICB
	STC
	Maritime Academy Harlingen
	TNO
Total no. of parties	49

Total project set-up & scope



	Project management					
rtive	 WP1: Project building, stake Business plan, business models for scal Project funding strategy & proposal wr 	holder management & communities ing • Legal structure iting • Coordination s	 t & communication • Legal structures/ entities • Coordination stakeholders, Communication & Dissemination 			
Suppor	 WP2: Finance • Economical impact, ToC & SCBA (MKBA), incl scenario's • Funding plan, state aid • Business cases of companies & ships • Investments, financing 					
	WP3: Human capital • Training & Education				WP7: Market premium	
WP4: H2 supply & logisticsWP5:• H2 supply network• Fuel c• Storage standardisation• Batter		WP5: On-board H2 technology Fuel cell systems Battery systems 	WP6: E-ship design Electrification Modular design, retrofit blueprints 		 Emission reduction certification, Z-E Insetting Market development 	
 Facilitate creation of H2 storage pool H₂ logistics, incl. data & digitalisation Contracting/ maintenance/ after sales 		 H₂ distribution system System integration & control Data & digitalisation/ maintenance/ after 	 Preparation of vesse Inland Vessels: Cargo/ push boats 	els for H ₂ technology Shortsea Vessels: Cargo/ Ro-Ro	Logistics Service providers	
services s • Regulation & Standardisation • R		sales services Regulation & Standardisation 	es(New / Retrofit)(New / Retrofit)& Standardisation• Regulation & Standardisation		Cargo owners	



Facilitating regulation & standardisation for H2

Regulation & standardisation in Inland Shipping

What does Condor H2 do?

CCNR/CESNI ES-TRIN <u>requirements</u> provide requirements for certification of ships & equipment	 Input CONDOR H2 on H2 requirements Provide industry insights Ensure regulation allows a swappable tank poo Speed up certification processes 	5: I
 Classification societies <u>rules, regulations &</u> <u>guidelines</u> to certify ships and equipment	Pro-actively involve class societies: Discuss (in workshops) on requirements, certificat process and standards	ion
<u>Standards</u> To facilitate the market and operations	 H2 Condor standard to facilitate swappable tank pool: More detailed -> specified interface elements (couplings, data gathering, size) Also based on operational & economical considerations Complies with ES-TRIN 	



Work done in the Condor H2 WP4 workgroup

- 6 Workshops in 2023 on in put to ESTRIN requirements & "design specification of the tanks:
 - 1. Feb: Pressure and Design Space
 - 2. Mar: Required system components
 - 3. May: Economic evaluation of PRV in/out tanktainer
 - 4. June: Safety aspects of tanktainer. Preliminary HAZID on flexible connection hose.
 - 5. July: Industry on Engineering Rules & Regulations
 - 6. September: Continuation on interface standardization
- Providing input to CESNI and attending TP/FC working group sessions (on H2 storage)
 - Attended CCNR/CESNI PT/FC working group meeting in Berlin
 - Oct: CESNI PT/FC working group meeting in Strassbourg
 - Bring comments from partners
 - *Provided input on overlap with ADR requirements*

	Workshops Condor H2 partners:	External participants/experts:			
se.	 Air Liquide BP H2Storage Linde Shell Vitrite 	 Argo-Anleg Lloyd's Register ZBT 			



Goal: Faster certification for ships & equipment

Tanktainer 'category' certified & Ship certified for 'category' of tanktainers





Will you join us to accelerate zero-emission shipping?

Contact Marjon Castelijns Condor H₂ project leader marjon.castelijns@darel.nl

News from WIC members AGFA ENGIE VKI



2. PRODUCTION RAMP UP

INNOVATION FUND

Projects selected for grant preparation

The Innovation Fund's third call for large-scale projects received 239 applications. Among those, the European Commission has selected <u>41 projects to prepare grant agreements</u> (EN | ••••). Through these projects, the EU is committing EUR 3.6 billion to bring innovative technologies to the market in energy-intensive industries, hydrogen, renewable energy, and manufacturing components for energy storage and renewables.

GIGA-SCALES

GIGA-watt Scaling of advanced Alkaline water Electrolyser Separators

Belgium AGFA

Manufacturing

of components

for production

of renewable

energy storage

energy or

 The project consists in the commercialisation of an industrial-scale ZIRFON production facility which will develop and bring to market the latest generation of ZIRFON membrane (Generation 3) with improved stack electrical efficiency, resulting in a reduction in renewable electricity required per unit of H2 produced by the electrolysers.

 The GIGA-SCALES project innovation lies primarily in increased production scale, developing membranes that are highly efficient and performant, with enhanced stack electrical efficiency and power density when compared to other options, creating a production line that is highly automated and defect-free.







2. PRODUCTION RAMP UP

COMMERCIALIZATION UTP 500 and UTP 220



Agfa to invest in new industrial unit for Zirfon membranes for green hydrogen production

Mortsel, Belgium March 8, 2023

Agfa today announced that, given the strong increase in demand, the Board of Directors validated the investment for a new industrial unit for the company's Zirfon membranes for green hydrogen production, next to further investments in growing the current facility.

The unit will be installed in existing buildings at the company's site in Mortsel, Belgium. When completed, the unit will be able to produce up to an equivalent of 20 gigawatt/year of electrolyzer capacity for the production of green hydrogen. The design of the unit will also allow later extension.



~40M € investment

Ē





Capacity of 20 GW/y



Membrane width of 2 m, compatible with industrial AWE



Compatible with Zirfon new GEN and additional production line







2. PRODUCTION RAMP UP

COMMERCIALIZATION UTP 500 and UTP 220



Columbus

Decarbonising the industry

Wallonia leader of energy transition

John

Cocker





Decarbonization in the making



Decarbonising the industry

Columbus : biggest power to methane in the world 100 MWe

ii:

Decarbonising the industry





Columbus : project status update

Project status:

- Funding secured: IPCEI and Innovation Fund
- Permit application submitted September 2023
- FEED studies finalized
- RES sourcing ongoing
- Walloon regulatory framework for green gas: second reading ongoing, target to finalize end 2023

1. au

2

Columbus

Decarbonising the industry

Key dates: FID March-April 2024, COD end 2026





Wallonia leader of the energy transition

Koen Vlaeminck koen.vlaeminck@engie.com

John

Cocker

CARMEUSE

engie



STATUS UPDATE WIC Meeting 21-09-2023



Green light for Phase 2: Detailed Engineering Launch of Public Tendering



A Hydrogen Test Center for You!

- An open innovation center
- "Plug & Play": providing all necessary generic services:
 - Pre-equipped lab infrastructure and test boxes
 - All safety and security measures: allowing you to perform your tests in full safety and confidentiality
 - All needed supplies:
 - Gaseous Hydrogen at different pressures
 - Liquid Hydrogen
 - In industrial volumes: directly from the future backbone
 - Electricity
 - Other gases
 - Generic instrumentation and data acquisition
- Technical and scientific support



Antwerp: Prestional in 2026 Operational in 2026 Operational in 2026 • NextGenDistrict VectGenDistrict Operational in 2026 Operational in 2026

- Decarbonisation of Petrochemical Industry
- Energy Import

Plot 5

Plot 6

- Maritime & harbour applications
- Production by electrolysis

 Decarbonisation of heavy Industry

Charleroi:

Backbo

Clean District

- Heat & Power
- Aerospace applications
- Production by Plasmalysis

Both side with direct connection to future H2 backbone

JI 20000 41

Parc Nelso Mandela c

Montiany-le-Tiller

Hôpital Civil Marie Curi



NextGen Demo

Plot 3

Plot 4



For more information:

Peter Simkens peter.simkens@vki.ac.be M: +32 498 10 13 54



WN/WIC News

Coming events 2024 Skills & education

UPCOMING EVENTS



- Next WIC meeting 2023
 WIC meeting 4: Thursday 7 dec @ Cummins, Oevel Belgium
- WIC/BHC conference : October 16 in Brussels !!
- WIC visit NRW : 08/11 09/11
 - Extended registration deadline : 29/09
- **Hydrogen Academy :** 25/09 20/11
- Webinars:
 - 28/09 topics for coming call Clean Hydrogen JU
 - 02/10 Roadmap H2 Import Coalition
- **EU Hydrogen week** (Brussels) : 20/11 24/11



- 8 November
 - Visit HyCologne
 - Introduction participants
 - Visit Hydrogen fuelling stations Hürth/Frechen and hydrogen bus from RVK
 - Presentation clusters and introduction matchmaking WIC with German cluster members (Herten, Rhein-Ruhr)
 - Networking dinner, incl. matchmaking
- 9 November
 - Visit Center for Fuel Cell Technology (ZBT)
 - Presentation and tour showing research topics and equipment
 - Visit port of Duisburg
 - Boat tour to climate-neutral container terminal
The search for skilled people...

EDUCATION & TRAINING TECHNICAL WORKFORCE ON H

- Different steps
 - **Phase 1** : interviews (what is existing + future ambitions)
 - Universities
 - High schools
 - Secondary schools
 - Adult education
 - Public bodies
 - Phase 2 : analyses of needs
 - Workshop
 - YOUR INPUT : QUESTIONS WILL BE SENT AROUND
 - Phase 3 : analyses of shortages
 - **Phase 4** : common plan for new training/education
 - Phase 5 : broad communication



AGENDA



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