

Status and developments of H2 in Flanders -

Inn2POWER workshop-Belgian Offshore Days

MOU1

Kleur wijzigen of afbeeldingen invoegen?

1. Selecteer op het tabblad Ontwerpen de optie Achtergrond opmaken.
2. Selecteer Afbeelding uit bestand of Vullen met effen kleur.

of

1. Rechtermuisknop
2. Achtergrond opmaken
3. Opvullen met afbeeldingen of Vullen met effen kleur.

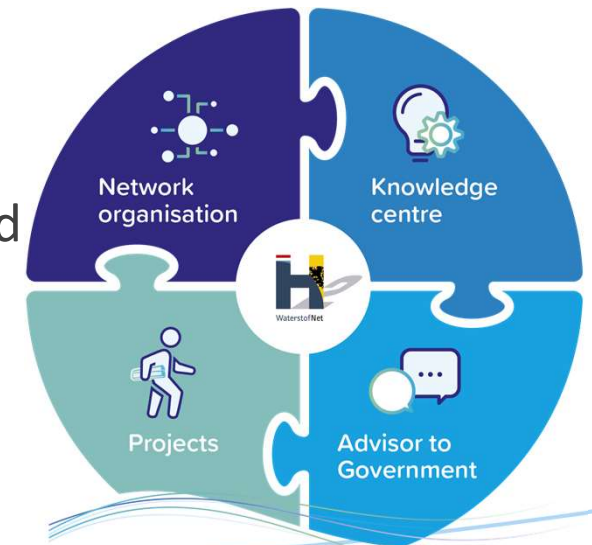
Microsoft Office User; 28/09/2020

Outline

- WaterstofNet, who are we?
- Status green H₂ in Flanders
 - Existing pilots & technology
 - Large sea-port projects & transport infrastructure in development
 - H₂ Import
- Policy context Flanders

WaterstofNet

- Start 2009
- Project organisation located in Turnhout and Helmond (NL)
- Focus on projects and roadmaps:
 - 0-emission mobility
 - energy storage
- Collaboration with industry, knowledge institutes and governments
- Hands-on experience:
 - 5y exploitation & maintenance H2 fuelling station Helmond
 - Facilitate several demonstration projects (focus mobility)
 - Mobile H2 station



“Waterstof Industrie Cluster”

In BE/NL

> 125 members

members x 2 during last 1,5 years



Status H2 in Flanders: existing (pilot) projects



Halle- Colruyt



DATS 24



Antwerp- Van hool



VDL truck -> Colruyt



Antwerp CMB

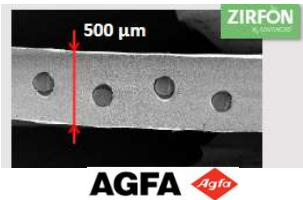


Zaventem Air Liquide

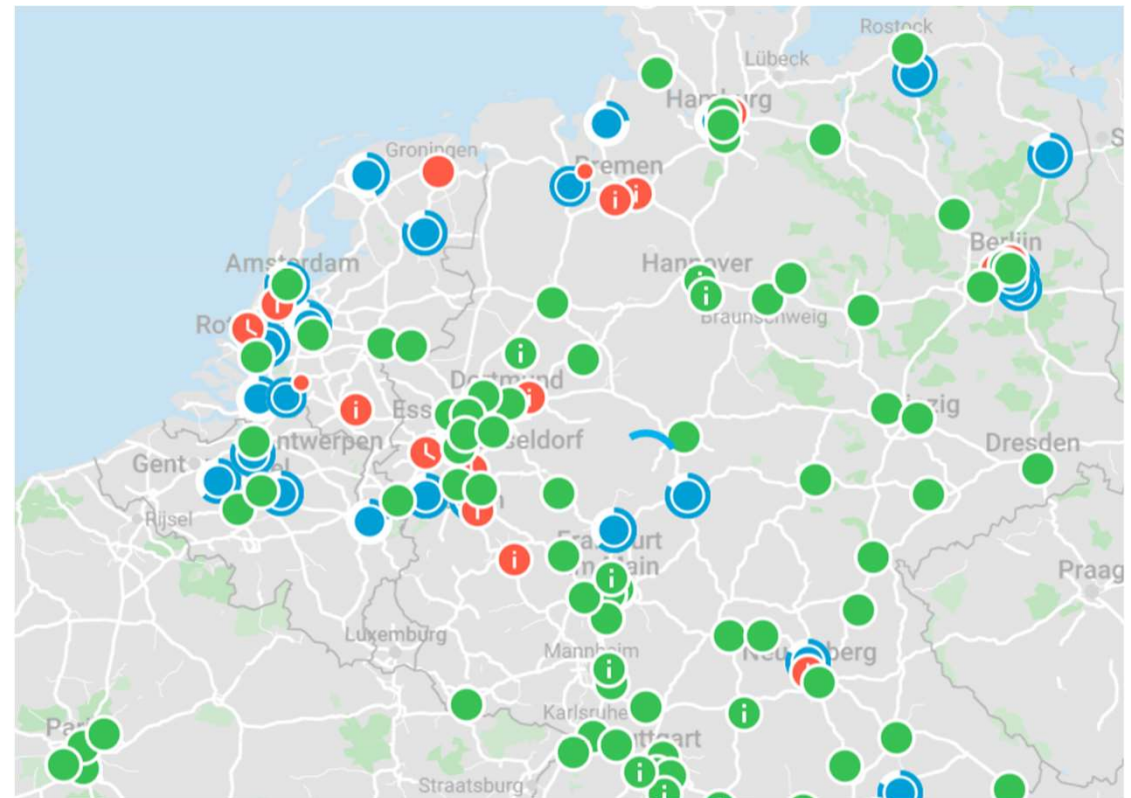
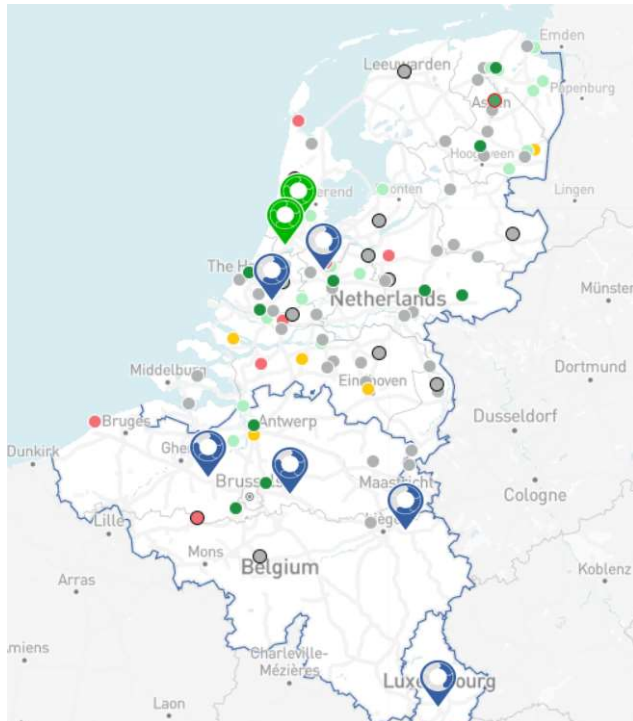


Antwerp- Ineos & Engie

Status H2 in Flanders: technology development



Mobility: Several new H2 stations to be opened in 2022



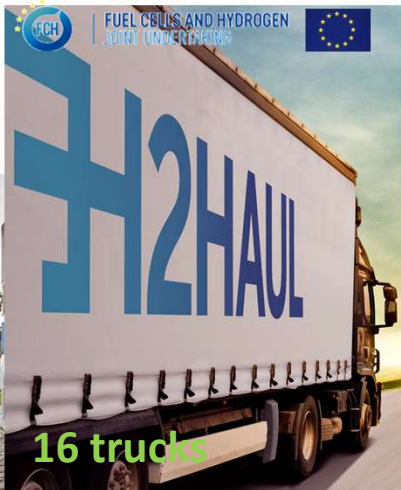
Mobility: Scaling up projects on heavy duty



HyTrucks

1000 trucks

2025
Between
Port of
Antwerp-
Rotterdam
& Duisburg



16 trucks



first 44t truck

Interreg
North-West Europe



first 27t truck

CONFIDENTIAL

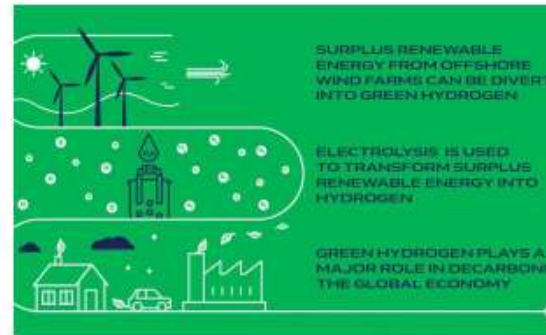
Large projects are developed in BE seaports

Power-to-hydrogen: Hyoffwind



Project with Eoly and Parkwind to build an industrial-scale power-to-hydrogen facility in the port of Zeebrugge.

Source Fluxys website



27 JANUARY 2020

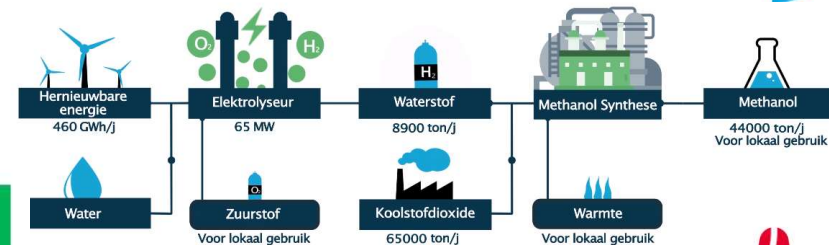
HYPORT®: green hydrogen plant in Ostend



DEME

Dredging, Environmental
& Marine Engineering

Het North-C-Methanol project



POWER TO METHANOL

ANTWERP B.V.

"THE FUTURE IS RENEWABLE AND CIRCULAR"

The Power to Methanol project has the ambition to advance the energy transition and to strengthen its presence in the Port of Antwerp not only for the business of today but also for that of tomorrow.

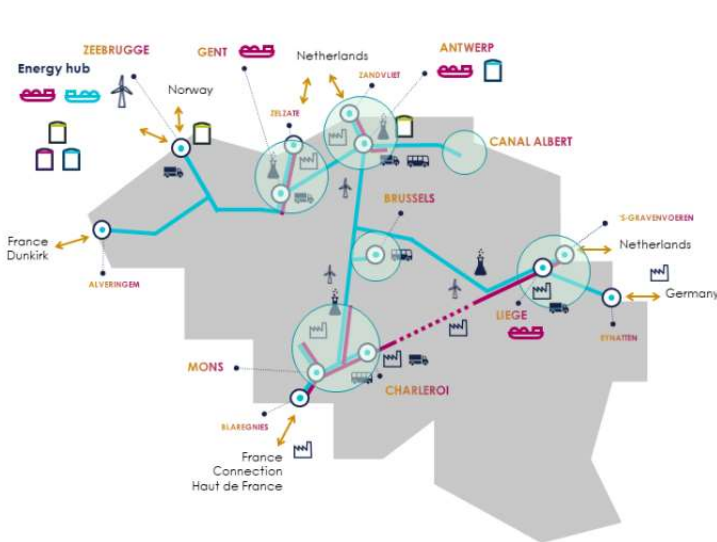
OUR CONCEPT

- Greener deal for a greener future -
- Energy transition: Hydrogen as the green energy carrier -
- Renewable power through e-methanol -
- Power to chemicals through Antwerp Petrochemicals Hub



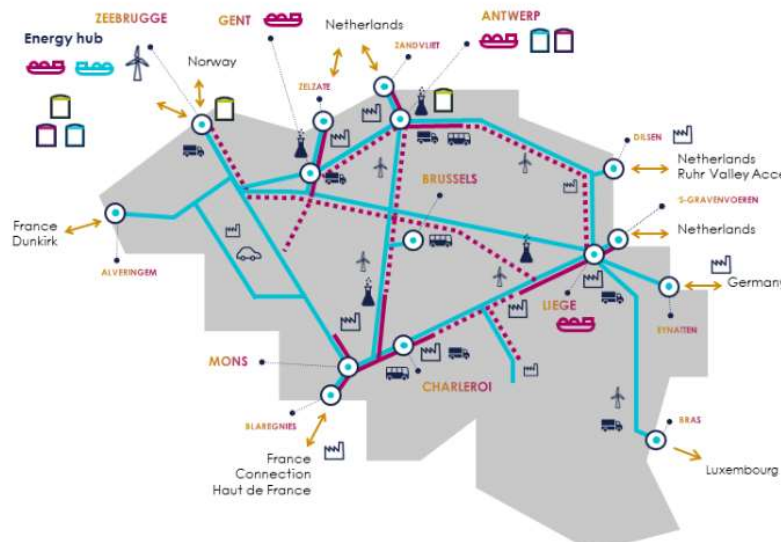
(Planned) hydrogen infrastructure in BE

Mature European Hydrogen Backbone can be created by 2040



- CH₄ storage (liquid / gas)
- CO₂ terminalling
- Buffer storage (liquid)
- Buffer storage blue hydrogen production
- CO₂ overseas export
- H₂ import (different carriers)
- H₂ pipeline
- CO₂ pipeline
- Options
- Power-to-Gas
- Local carbon usage

Short-term



- CH₄ storage (liquid / gas)
- CO₂ terminalling
- Buffer storage (liquid)
- Buffer storage blue hydrogen production
- CO₂ export
- H₂ import (different carriers)
- H₂ pipeline
- CO₂ pipeline
- Options
- Power-to-Gas
- Local carbon usage

Longer-term



existing

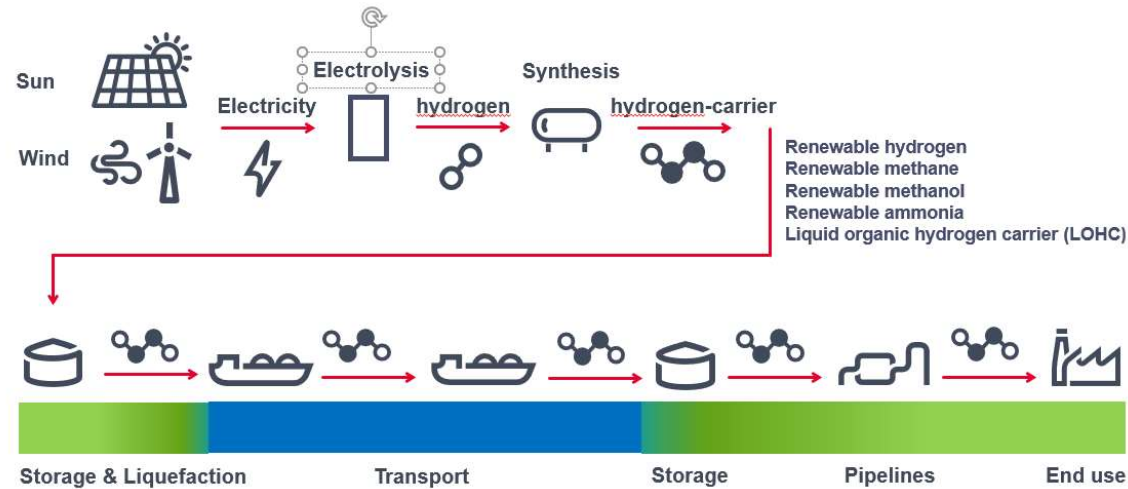
- H₂ pipelines by conversion of existing natural gas pipelines (repurposed)
- Newly constructed H₂ pipelines
- Export/Import H₂ pipelines (repurposed)
- Subsea H₂ pipelines (repurposed or new)
- Countries within scope of study
- Countries beyond scope of study
- Potential H₂ storage: Salt cavern
- Potential H₂ storage: Aquifer
- Potential H₂ storage: Depleted field
- Energy island for offshore H₂ production
- City for orientation purposes



H2 import coalition

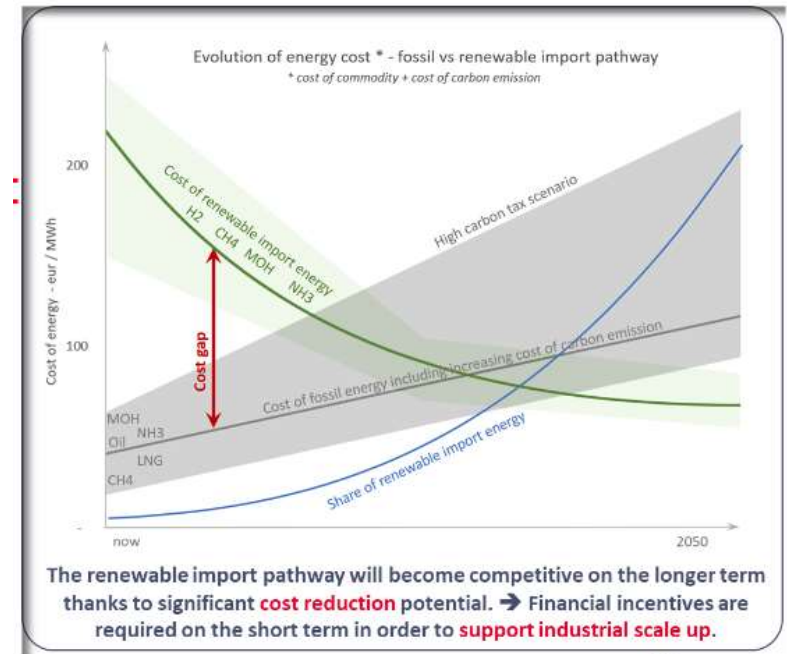
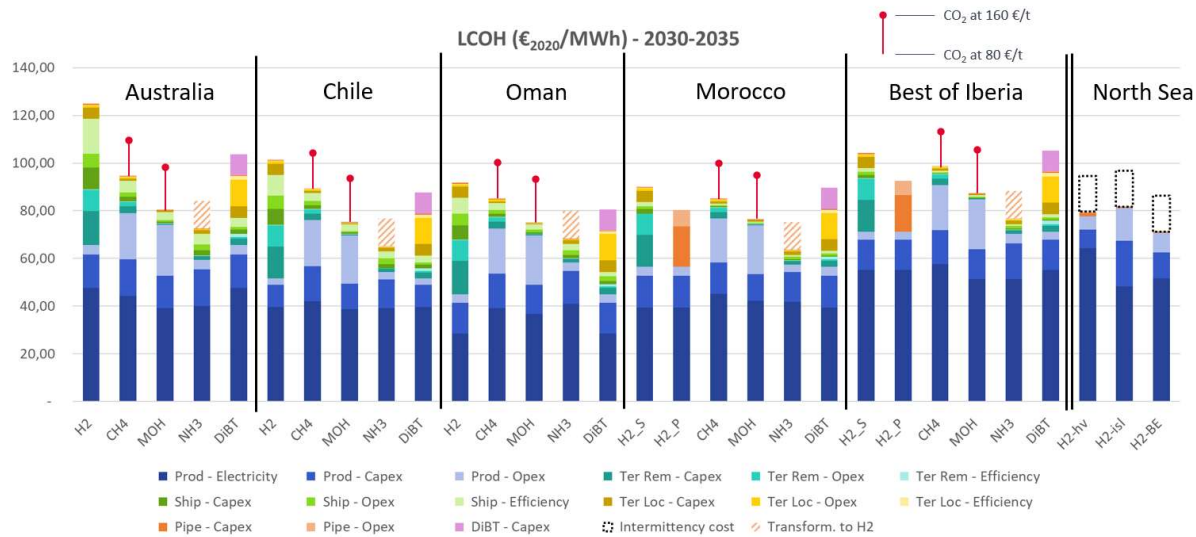
Renewable molecules – green hydrogen value chain

From remote wind and sun to end-user market



6

H2 import coalition



Flemish hydrogen vision-H2 Task force - IPCEI



Flemish hydrogen vision 'European frontrunner through sustainable innovation'



Nov 2020

125 million euros from Flemish recovery plan to hydrogen



December 4, 2020

HYDROGEN ECONOMY

Flanders Invests 106.3 Million Euros in five Large Hydrogen Projects

October 19, 2021 2 min read



Nieuwe taskforce Vlaamse waterstof economie

Publié le 07/07/2021 à 07h00

FFN

Hydrogen research in Flanders

- Flanders/Belgium has several research groups, but research is fragmented

✓ Inventory is made

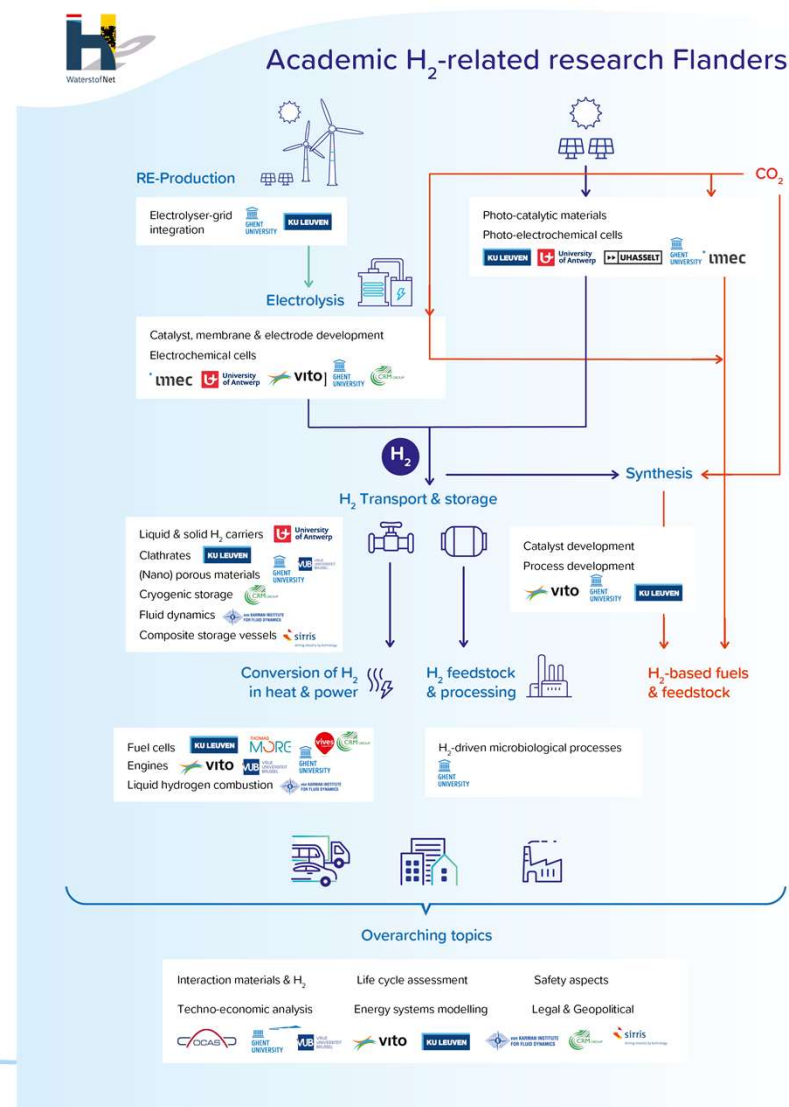
(https://www.waterstofnet.eu/asset/public/WIC/WaterstofNet_Hydrogen-Research-in-Flanders.pdf)

✓ Next step: exchange /match with industry

⇒ “Flemish” hydrogen program

- On Belgian level: BEHyFE H2 academic community

<https://www.behyfe.be/research>



Conclusions

- Pilot projects realised in Flanders, focus on mobility
- Ambitions to be “leading” in hydrogen
- Strategy and task force in place
- The sea-ports are setting the scene with large project initiatives
- Limited domestic production but focus on import
- Strong growing interest in industry => Hydrogen industry cluster is growing fast
- R&D program to be strengthened and coordinated

Events..



H2

HELICOPTER VIEW
ON THE GREEN
HYDROGEN
OPPORTUNITY

20.04.22
Bluebridge Oostende

Powered by

engie fluxys Bluebridge DEME
EXMAR Port of Antwerp ZEEBORG H
POM Haven Oostende BLAUWE CLUSTER
vito Oostend Science Park

CONFERENCE
**JOINING FORCES FOR A
SUSTAINABLE HYDROGEN REGION**

MAY 18, 2022 - BRUSSELS 44 CENTER

REGISTER NOW!

WaterstofNet WATERSTOF INDUSTRIE CLUSTER
a WaterstofNet initiative

Celebration of > 5 years WIC and > 120 members

WaterstofNet

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België

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Kantoor Nederland

Automotive Campus
Automotive Campus 30
5708 JZ Helmond
Nederland

 WaterstofNet

 WaterstofNet

WaterstofNet.eu

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Bedankt voor uw aandacht!
Thank you for your attention!

