Benelux cooperation as springboard for regions
Benelux Coastline from above

1.7% of EU area, but 50% of continental North Sea coastline
Some facts about the Benelux

• **High level of GDP/capita**
• **The biggest trade partner of Germany**
• **Best ICT-infrastructure in EU**
• **Benelux is THE transport hub in EU**
• **Large industrial base linked to reliable affordable energy**
The best kept secret...
The provisions of the Treaties shall not preclude the existence or completion of regional unions between Belgium and Luxembourg, or between Belgium, Luxembourg and the Netherlands, to the extent that the objectives of these regional unions are not attained by application of the Treaties.”
**TOOLBOX OF THE BENELUX UNION**

**Art.6 (2) Benelux Treaty**

- **RECOMMENDATION**
  - in relation with the functioning of the Benelux Union
  - Not binding, soft law

- **DECISION**
  - to implement provisions of the treaty
  - Binding for the Benelux countries

- **TREATY**
  - concerning any matter pertaining to the treaty
  - Binding after ratification

CPMR North Sea Commission - 28.02.2019 - Brussels
House of Energy cooperation

North Seas Energy Forum

BEN!EX
“North Seas Energy Forum provides a framework for regional cooperation to facilitate the further cost-effective deployment of offshore renewables, in particular wind, and interconnection in the North Seas countries”
Hydrogen assets in the Benelux

✓ **High density market** of 28.5 millions inhabitants
✓ **Strategic location**: North Sea offshore energy
✓ **Maritime ports & industrial parks**: chemical & automotive
✓ **Mobility network**: road (cars, trucks, buses); waterways; rail
✓ Well-connected **gas network**
✓ **Knowledge & Expertise**: electrolysers, universities, research institutes, etc.
✓ Close cooperation with **North Rhine-Westphalia**
Hydrogen and fuel cell knowledge hubs in Benelux

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>Primary EU Location</th>
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<tbody>
<tr>
<td>Agfa-Gevaert</td>
<td>Belgium</td>
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<tr>
<td>AkzoNobel</td>
<td>Netherlands</td>
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<tr>
<td>Aperam</td>
<td>Luxembourg</td>
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<tr>
<td>Axel Seifert - Seifert and Skinner &amp; Associates</td>
<td>Belgium</td>
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<td>Borit</td>
<td>Belgium</td>
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<td>BOSAL Energy Conversion Industry</td>
<td>Netherlands</td>
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<td>Bredenoord</td>
<td>Netherlands</td>
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<td>CAPLINQ Europe</td>
<td>Netherlands</td>
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<td>Haiku Tech Europe</td>
<td>Netherlands</td>
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<tr>
<td>Howden Thomassen Compressors BV</td>
<td>Netherlands</td>
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<td>Havelandseweg</td>
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<td>Hydrogenics</td>
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<td>HyET</td>
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<td>IHI Hauzer Techno Coating B.V.</td>
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<td>IthoDaalderop</td>
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<td>Kiwa N.V.</td>
<td>Netherlands</td>
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<td>NanoCyl</td>
<td>Belgium</td>
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<tr>
<td>NedStack</td>
<td>Netherlands</td>
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<td>Optimum CPV</td>
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<td>Resato International BV</td>
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<tr>
<td>Solvay</td>
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<tr>
<td>SolvaySpecialityPolymers</td>
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<td>Tenaris</td>
<td>Luxembourg</td>
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<td>VanHool</td>
<td>Belgium</td>
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<tr>
<td>VDL</td>
<td>Netherlands</td>
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</tbody>
</table>

So far 25* companies identified for the Benelux in the supply chain study due by end 2018.

Several research institutes about H2/FC exist in Benelux, stronger cooperation is needed.
Several of those companies can be grouped around two clusters of knowledge hubs.

* List is not final
BENELUX on the road to deployment

**BELGIUM**
- 35 Belgian beneficiaries Participating in 50 projects FCH JU contribution 27.6 Mil € (3.3% of total FCH JU funding)
  - **National Policy Framework:** Target to reach 22 Public H2 refuelling stations by 2020
  - **Planned**
    - 89 planned FC cars
    - 1 planned HRS
    - 3 planned FC buses
    - 2 planned FC garbage trucks

**Groningen:**
- 2 buses active (High V.LO.city)
- 1 HRS active (High V.LO.city)
- 1 planned HRS (JIVE 2)

**Antwerp:**
- 5 deployed buses
- 1 deployed H2 Refuelling Station (High V.LO.City)

**Halle:**
- 2 deployed MHVs (Hylift-DEMO)
- 1 deployed HRS
- 2 deployed Electrolysers (Don Quichote)

**Petten:**
- 24 KW UPS system (FITUP)

**On several locations:**
- 29 m-CHP (ene.field & PACE)

**Albrandswaard / Rhoon:**
- 1 deployed HRS

**Zaventem:**
- 1 deployed HRS (SWARM)

**Arnhem:**
- 1 deployed HRS

**Helmond:**
- 1 deployed HRS

**Luxembourg:**
- 1 planned HRS

**Planned**
- 1 planned HRS
- 2 planned buses (3EMOTION)
- 1 planned HRS (H2ME2)
- 19 FC cars
- 54 FC buses (JIVE2)
- 11 FC garbage trucks
- 100 m-CHP (WKK)

**THE NETHERLANDS**
- 48 beneficiaries Participating in 69 projects FCH JU contribution 44 Mil € (5.2% of total FCH JU funding)
  - **National Policy Framework:** Target to reach 20 Public H2 refuelling stations by 2020

**Various Locations:**
- 92 m-CHP installations (ene.field)

**Petten:**
- 24 kW UPS system (FITUP)

**On several locations:**
- 29 m-CHP (ene.field & PACE)

**Planned**
- 1 planned HRS
- 2 planned buses (3EMOTION)
- 1 planned HRS (H2ME2)
- 19 FC cars
- 54 FC buses (JIVE2)
- 11 FC garbage trucks
- 100 m-CHP (WKK)
Benelux is rich on bus and truck builders

Public procurements of zero-emission buses (trucks) will spur innovation and investments in local companies.
H2 trains in Benelux has potential

Cross-border cooperation is required to make successful projects.

- H2 passenger train Gent- Terneuzen as example of Benelux Cross boarder cooperation
- Testcase for later a potential Groningen – Germany cross boarder H2 train
Benelux event on Hydrogen (Groningen)
Path Benelux cooperation

Focus on transition towards green hydrogen

Benelux Working Group (ministries)
   ➔ Exchange on roadmaps
   ➔ Consultations TSO’s and R&D on market introduction

Link with National Energy and Climat Plans (@Penta level)

Goal: develop a Benelux Hydrogen Strategy by 2030
What’s in it for regions?

- Become frontrunners by agreeing on common standards
- Benefit from Benelux support in cross-border projects
- Reinforce market leadership through exchange of skills & expertise
- Create a higher level-playing field regarding demonstrations and Technology Readiness Levels (TRL)