Interreg North Sea

Co-funded by the European Union

GRIT

Interregional roadmap for GRIT VET module development & implementation

Interreg North Sea Region – Co-funded by the European Union

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1. Introduction

The GRIT (Green Industrial Transition) project aims to develop a VET (Vocational Education and Training) module that equips learners and employees with the skills needed for the green industrial transition, particularly regarding hydrogen technologies. This roadmap integrates both skills foresight and the module development process to provide an interregional framework that can be applied not only within GRIT regions but also beyond.

2. Methodological framework

• SBB (Samenwerkingsorganisatie Beroepsonderwijs Bedrijfsleven) — https://www.s-bb.nl

• Waterstofnet — https://www.waterstofnet.eu

• Alfa College — https://www.alfa-college.nl

• GroenVermogenNL — https://groenvermogen.nl

Key sources and curricula (click to open):

The roadmap is built on three main pillars:
- Desk research into existing curricula and training initiatives (e.g., GroenVermogenNL, Alfa College, Waterstofnet).
- Regional stakeholder consultations, such as in the Antwerp Port Area, identifying industry trends, skills needs and gaps.
- Interregional collaboration with Dutch and German partners, including joint workshops, visits, and online meetings.

This combination ensures that the roadmap is flexible and adaptable while maintaining a shared structure for VET development.

3. Stakeholder mapping & consultation strategy

Key stakeholder groups engaged in the Antwerp Port Area include:

Stakeholder Cluster	Examples
H_2 Production, Storage & Distribution	Air Liquide, port terminals
Energy-intensive Industry	BASF, Equans
Maritime & Logistics	CMB Tech, Van Moer Logistics, Exmar

Innovation & Training	Equans Academy, Flux50, Acta
Education & VET Providers	AP Hogeschool, Alfa College, GroenVermogenNL/SBB, Energie(k) Onderwijs

The consultation strategy included workshops, interviews and co-creation sessions. The aim was to move from assessment of needs towards co-design of the VET module.

4. Skills foresight: trends & needs

The foresight analysis in the Antwerp Port Area highlighted the following trends:
- Hydrogen production is available but requires significant infrastructure upgrades and safety measures.
- Green hydrogen will mostly be imported; grey and blue hydrogen still dominate locally.
- Other technologies (industrial heat pumps, electrification, offshore wind) complement hydrogen in the transition.

Labour market findings show a severe shortage of technicians across levels (ISCED 3–4 and engineers). Companies invest heavily in in-house training due to misalignment between education and industry.

Main skills gaps identified include:

Sector	Skills Gaps	Implications for VET
Production & Distribution	Electrochemistry (electrolysis), new welding & coating techniques, safety	Develop new modules covering electrolysis and safety-critical practices
Energy-intensive Industry	STEM basics plus high voltage, electrochemistry	Strengthen modules on advanced electricity & chemistry for operators
Maritime & Logistics	Electrotechnology, dual/multi-fuel systems	Include training on fuel cells and hydrogen applications in logistics

5. Roadmap for VET module development & implementation

The development process follows five phases:

Phase	Timeline	Key Activities
1. Consultation & Desk Study	Q1 2024	Consult companies, schools; study existing hydrogen curricula
2. Concept Development	Q3–Q4 2024	Design module, integrate input from Waterstofnet & Alfa College; attend Hydrogen Academy
3. Feedback & Exchange	Q4 2024 – Q1 2025	Workshops, interregional partner meetings (Groningen, Hamburg)
4. Pilot & Testing	Spring 2025	Test module, industry visits, gather feedback from learners and companies
5. Evaluation & Implementation	Summer 2025	Adjust module, final stakeholder event, prepare for long-term roll-out

6. Tools & methodological insights

- Energie(k) Onderwijs (VIVES, HZ, ROC Scalda) — https://www.energieonderwijs.be
- AP Hogeschool — https://www.ap.be
- Flux50 — https://www.flux50.com
- Equans Academy — https://www.equans.be
- CMB.Tech — https://cmb.tech
- Alles over Waterstof — https://allesoverwaterstof.nl

Additional references (click to open):

Several tools and methods were applied:
- Skills foresight tools to anticipate future competence needs.
- Workshop formats for structured stakeholder engagement.
- Curriculum frameworks from the Netherlands (GroenVermogenNL, SBB) and Germany.
- Evaluation instruments to assess feedback during pilot testing.

Other relevant references include: Alles over Waterstof, CMB.Tech, Equans Academy, Flux50

7. Conclusions & recommendations

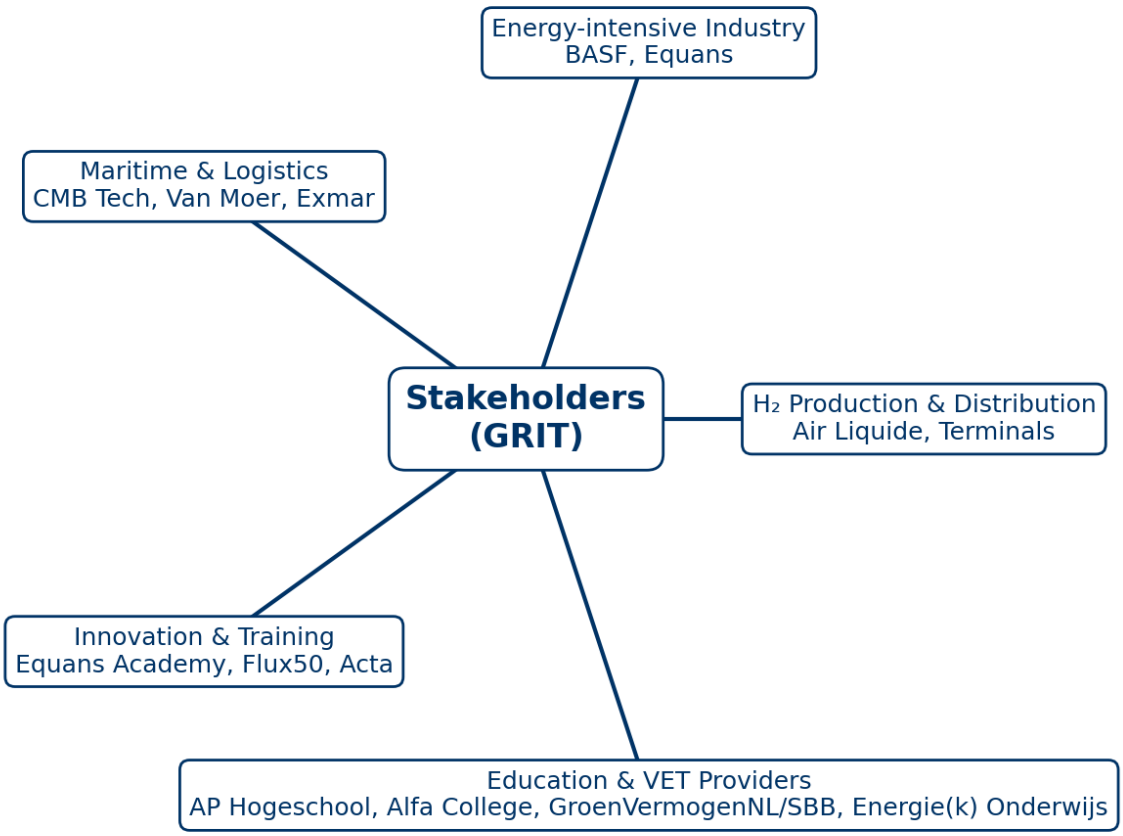
This roadmap demonstrates how interregional collaboration results in a sustainable pathway for VET module development to address the green industrial transition. Key recommendations include:
- Strengthen cooperation between companies and VET providers.
- Integrate foresight systematically into curriculum development.
- Scale and adapt the GRIT methodology to other European regions.

By following this roadmap, GRIT contributes to aligning education with labour market needs while supporting the transition towards a greener economy.

Annex: visuals

Roadmap Timeline

Stakeholder Mapping (Updated)

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Appendix: clickable URLs to key references

- GroenVermogenNL — https://groenvermogen.nl
- SBB (Samenwerkingsorganisatie Beroepsonderwijs Bedrijfsleven) — https://www.s-bb.nl
- Alfa College — https://www.alfa-college.nl
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