



# WOS Yearly Report 2025

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# EXECUTIVE SUMMARY

## UG Schools - Key Performance Areas

Performance by the University of Groningen (UG) interdisciplinary schools are evaluated on the basis of the criteria listed below. The criteria express themselves as a series of performance areas, with progress expressed through three categories: community, activities/outputs, and impact. The performance areas are designed to structure progress reporting over a multiyear period. It is acknowledged that the schools are part of further collaborative efforts within the UG, and thus also other initiatives within the university contribute to the achievement of these areas.

### COMMUNITY (within 3 years):

- #1 Active cross-faculty network of researchers and staff;
- #2 Strengthened interdisciplinary research environment.

### ACTIVITIES/OUTPUT (within 3 years):

- #3 Establishment of activity programme at 'House of Connections';
- #4 Interdisciplinary research activities on school theme (events, groups, programmes);
- #5 Engagement with relevant regional partners (including University of the North);
- #6 Active engagement with interfaculty PhD programmes or projects;
- #7 Active interdisciplinary education initiatives (project- and challenge-based);
- #8 Joint activities and synergies between schools.

### IMPACT (after 3 years):

- #9 Conversion of small research initiatives towards larger projects / bids;
- #10 Active and targeted dissemination and social media programme;
- #11 Influence from activities around school themes on policy, industry and/or research agendas;
- #12 Establishment of renewed Minors, Summer/Winter Schools relevant to school themes;
- #13 Establishment of impact examples and narratives on school themes.

## Quick overview of WOS scores on Communities and Activities/Output

COMMUNITY (within 3 years):	Score 2023	Score 2024	Score 2025	Progress	Plan for further improvement
#1 Active cross-faculty network of researchers and staff;	3.5/5	4/5	4/5	stable	Closer collaboration with lecturers
#2 Strengthened interdisciplinary research environment.	5/5	5/5	5/5	stable	Development of Twin Transition community
ACTIVITIES/OUTPUT (within 3 years):	Score 2023	Score 2024	Score 2025	Progress	Plan for further improvement
#3 Establishment of activity programme at 'House of Connections'; #4 Interdisciplinary research activities on school theme (events, groups, programmes);	3.5/5	3.5/5	4/5	Improved	Transition to new governance Schools
#5 Engagement with relevant regional partners (including University of the North);	5/5	5/5	5/5	stable	Institutionalisation of cooperation
#6 Active engagement with interfaculty PhD programmes or projects;	3/5	4/5	4.5/5	Improved	Development of new PhD and postdoc programmes
#7 Active interdisciplinary education initiatives (project- and challenge-based);	3/5	4/5	5/5	Improved	Closer collaboration with lecturers
#8 Joint activities and synergies between schools.	4/5	4.5/5	4.5/5	stable	Harmonisation of Schools structures and processes
<b>TOTAL:</b>	<b>27/35</b>	<b>30/35</b>	<b>32/35</b>	<b>Improved 5%</b>	<b>5% extra</b>

## Overview of achieved fundings and prospective projects

The two tables below provide a high-level summary of the **granted fundings** (table 1) and of **submitted** or in **drafting** proposals (Table 2) that the WOS has contributed to develop in 2025. WOS was the programme's initiator in some activities, while it supported faculty initiatives in others.

Three categories of support are defined:

- Bronze = light support, e.g. some seed funding for editing or help in retrieving co-funding, project would have probably be granted also without WOS involvement;
- Silver = in addition to bronze also supports drafting, for example by providing content related input or helping in setting up networks.
- Gold = WOS was deeply involved or the initiator and without it the project would have not been granted).

**Table 1: Overview of granted funding**

Project name	Involvement	Involved faculties	Total Value project	Subsidised amount	Funding for UG
JTF Noordelijke Leergemeenschap Participatie (PPC)	Gold	LAW, FBSS, FSS + others	7.5M	3.75M	3.75M
LLO katalysator BS 2 - KETEN (HVCE)	Gold	Hanze in the lead/ UG -> FSE	2.7M	2M	840K
HyLearn Groenvermogen NL (HVCE)	Silver	Hanze in the lead/ UG -> FSE + others	4.5M	4.5M	1,6M
HVCE Knowledge and Innovation Hub (HVCE)	Gold	FSE + others	15M - Granted	7.5M Euro	7.5M Euro
India Netherlands Hydrogen Valley Fellowship Programme	Bronze	FSE + others	90 fellowships in 3 years	80%	100%
JUST ART (NWO)	Bronze	Arts			
NextGenOcean (ENLIGHT)	Bronze	FSE+others	150k	150k	37.5k

**Table 2: Overview of project being drafted, submitted or under review**

Project name	Coordinator	Penvoerende faculty	Budget + status
JTF Klimaat Campus (CAP)	Squintani & de Heij	FSE (Gelifes) + FSS, CF, FBSS + Hanze	7.5M - in preparation
PIOENNIERS (Twin Transition)	Squintani	LAW + FSE	8M - to be submitted
COST action (PPC)	Squintani	FBSS	600K - in preparation
ERN 2026-2027 (4Schools)	De Heij	4Schools	350K - submitted
HISSEN (ENLIGHT)	Poppendick	FSE	150K - submitted
EntreHy (HVCE)	Poppendick	FSE	280K - submitted
HVCE Dreamhall (Nij Begun Masterplan Campus)	Squintani	FSE+others	35M Euro - submitted in order to influence Masterplan Campussen further planning
LLO bouwsteen 2 Mobiele Labfaciliteiten (HVCE)	Poppendick	FSE + LAW	2M Euro (600.000 Euro co-funding drafting)
NPG Baanbreker - Digital Academy (HVCE) + JTF Simulator Hub	Squintani	FSE + GMW + others	Drafting -12,55M Euro budget

NPG Baanbreker - Facility plan part 2 (HVCE)	Squintani	FSE	Drafting - 5M Euro
NPG Baanbreker - Facility plan part 3 (HVCE)	Squintani	FSE	Drafting - 5M Euro
MAH2LK ERASMUS+ CBHE project	Poppendick	FSE	760K - resubmitting
PE seed fund (CAP)	de Heij	FSS	5K - submitted

### Overarching reflection based on WOS scores on Communities and Activities/Output

For 2025, the Director of WOS is very much satisfied with the work delivered and cannot have asked more from the WOS staff and WOS community. We have further improved on the already good basis we had established in 2023 and 2024. Main areas of improvement for the WOS remain KPA's 1, 3 and 4. In 2025, we have further enlarged the community (KPA 1), thanks to the many activities and gatherings (KPA's 3 and 4). WOS has put a lot of effort in writing two major JTF proposals for financial support of the Public Participation Center (PPC) and the Climate Adaptation Platform. The first one - the JTF Noordelijke Leergemeenschap Participatie (PPC) - is positively evaluated. The latter - the JTF Klimaat Campus (CAP) - needs improvements based on the received feedback. The process of developing and writing the proposal has strengthened the collaboration with the already existing project partners, has further expanded both the internal UG and external network (i.e. with companies and local governments) and has given a boost to the activities of both networks. For HVCE, the investments in the different educational projects with MBO, HBO and WO are really starting to bloom.

More fundamentally, the WOS is seen as a success story contributing to the firm embedment of interdisciplinarity into the strategic plans of the University for the foreseeable future. We are a welcome and strong partner in the Northern Netherland energy and climate ecosystem.

Yet, the Director of WOS also has some concerns. Weariness within the Schools, the UG community and the broader ecosystem is increasingly visible and worrisome.

The main actions in terms of education and research are driven by a core of community members. This core needs enlargement. Too often the successes booked under the umbrella of the WOS are led by the same individuals. Although it is understandable that established academic leaders book more successes than less established peers, even more so when properly supported, enlarging the group of Scholars that contribute to meaningful action within the WOS is a core goal of the School. For 2026, the development of the Twin-Transition area of action, under the lead of young upcoming academic leaders from multiple faculties plays an important role in enlarging the core community of WOS. Furthermore, the development of the community in the field of climate adaptation will play a strategic role in 2026 given the impulse expected from the Climate Campus proposal.

Another area of improvement concerns the governance of the Schools. Despite the elapsing of almost a full year since the submission of the Deelplan School under Actielijn 7, further investments are necessary to make a meaningful next step in the development of the new governance for the Schools. While we have been able to plan in accordance with a 10% budget reduction in 2026, more efforts are needed to achieve a further budget reduction in 2027. The improved harmonisation of the processes among the Schools helps in this regard, but synergies with other UG units might be necessary to improve efficiency further. To this extent, it is a priority to complete the transition to a new governance model for all four Schools. This will also allow setting up clear and durable relationships with other UG units, and most notably R&I.

For 2026, WOS faces two major challenges: 1) the transitioning to the new governance and to a new director; 2) coping with the workload brought about by the *possible* enlargement of the WOS theme to include more 'sustainability' aspects than energy and climate, as well as by Nij Begun and other funding programmes, while having to cut down the budget. The WOS has written the handbooks and streamlined internal processes so as to prepare for coping with the first challenge, but it depends on the CvB and CvD as regards concrete developments in this regard. The first months of 2026 should provide more clarity about this second challenge and how to develop further the support towards the position of the WOS community within Nij Begun.

## COMMUNITY (within 3 years)

### #1 Active cross-faculty network of researchers and staff

#### Advisory board

The Advisory Board of the WOS consisted of representatives from almost all Faculties. The WOS Advisory Board had a more remote role this year. Due to busy schedules, the board meeting for June was rescheduled to October. For 2026, we aim to approach the Advisory Board members more actively to our activities.

#### Connecting with UG staff and students

The WOS Community is composed by staff and students. The WOS reaches out to all peers who work or are interested to work on the Energy and Climate domains. The WOS does not have a "fellowship" programme.

WOS invested this year in expanding and strengthening their network with the already existing core groups on Hydrogen, Climate Adaptation and Public Participation, and the relatively new group of the Twin Transition. Based on the number of people who signed up for the WOS' 2025 research, educational, and impact events, we were able to engage roughly 340 colleagues from all UG faculties, plus several colleagues from the Shared Services department.

WOS aspires to create a student community focused on energy and climate through consistent collaboration with student organisations and instructional programmes. In 2025, we welcomed students in a number of our educational activities, both via regular (such as the newly developed minor Climate Change and Inequality, and the existing Minor on Energy Transition and the Minor Course Energy and Climate Law for non-lawyers) and extracurricular educational activities (such as the UG Impact challenge, summer schools on Energy Challenges, Public participation and Climate Adaptation).

In addition, we welcomed students in overall educational activities in cooperation with other N-NL partners, such as New Energy Coalition, Hanze and Innokite. WOS engaged approximately 150 students through a series of three connected events: the *Art Across Energy, Climate and Sustainability* symposium, the *Art of Energy Transition* excursion (in collaboration with the New Energy Academy), and the *Art of Energy Transition: Future of Groningen* exhibition. This included students from the Minerva Art Academy, participants in the New Energy Academy programme, and students from several UG faculties. These activities were made possible through an external collaboration with Sayoko Matsutani, art curator at Pine Valley, which created a unique opportunity to bring artistic and cultural perspectives into the WOS community. Together, these events provided a new entry point for students who do not typically engage with energy and climate themes, strengthening the interdisciplinary character of WOS and supporting our aim to expand student participation across regular and extracurricular activities.

We also welcome students to a number of our bigger events, such as our yearly WOS day, by sending invites to the relevant student associations, posting information via Brightspace or by asking lecturers to directly address their students in class. Up to now, this resulted in a handful of students attending such an event. We like to increase that number. We want to explore whether we could include students in the programme, so they can activate their network.

The WOS community keeps on growing, both internally and externally (regional, national and international). Our WOS newsletter has 481 newsletter subscribers (an increase with >40% from last year). The WOS linkedin account has 836 followers, which is doubled in comparison to last year.

#### **Possible scale for quantification realisation KPA:**

1/1 point for having mailing list which grows at least 15% yearly

1/1 point for having Scientific Board with representative from all faculties

1/1 points for having (new) core groups

0,5/1 point for connecting with 100 additional staff members

0.5/1 point for engaging 500+ students yearly

Result so far: 4 out of 5 (same as in 2024)

## #2 Strengthened interdisciplinary research environment

In 2025, WOS further strengthened the research-education-valorisation hubs on the four topics of the School.

- a) The **Hydrogen Valley Campus Europe** is a 110M euro reality, with regional, national and EU resonance (about 60 colleagues from 5 faculties involved on a stable basis; 50+ external partners are also involved in the initiative; regularly invited at EU events to showcase knowledge programmes) with its own [website](#) + multiple PhD projects on hydrogen (granted in 2023 + 2024 + 2025).
- b) The **Climate Adaptation Platform** (about 20 colleagues from 5 faculties involved on a stable basis) with its own [website](#) + M20 PhD projects on climate adaptation (granted in 2023 + 2024 + 2025) + submission of the JTF proposal Klimaat Campus (7M euro budget).
- c) The **Public Participation Centre** (about 40 colleagues from 6 faculties involved on a stable basis) with its own [website](#) + M20 PhD projects on hydrogen (granted in 2022 + 2024 +2025) + approval of the JTF proposal Noordelijke Leergemeenschap Participatie (7.5 M euro budget)
- d) The **Twin Transition** (between 10-20 community members from 4 faculties are involved) + M20 PhD project (granted in 2025) + submission PIOENNIERS project (8M Euro budget).

These four centres of aggregation developed multiple research proposals as well as educational and impact-related activities in 2025.

### **Possible Scale for visualisation KPA:**

1/1 point for having a research plan

4/4 points for each research hub (4)

Result so far: 5 out of 5 (same as in 2024)

## ACTIVITIES / OUTPUT (within 3 years)

### #3 Establishment of activity programme at 'House of Connections'

The activity programme of WOS is composed of activities in the field of public engagement (impact), education and research. For public engagement WOS looks for synergies with potential partners in our region for events that are already established in the region, such as New Energy Forum and Wind meets Gas, and aims for contribution to five big events in the year (see below).

- A. the Energy, Tech and Tunes programme during Eurosonic/Noorderslag in January
- B. the WOS event to celebrate Wubbo's legacy in March/April;
- C. the New Energy Forum (in cooperation with Hanze and NEC) in June;
- D. the European Researchers'Night/ Zpannend Zernike (organised by the four Schools and Zpannend Zernike) in September/October;
- E. Wind meets Gas (organised by NEC) in October

In 2025, WOS was actively involved in the programme team of NEF (C), and contributed in setting up the programme on the theme of climate adaptation (this topic was included in the programme for the first time). For Wind meets Gas (B), WOS gave support in the development of the programme and attracting students to the event, and organised one of the parallel sessions in House of Connections. Furthermore, WOS supported the programme of Energy, Tech and Tunes (A), organised by the Schools event manager, and the ERN and ZZ (D), organised by the 4 Schools for Science and Society. WOS invests each year in the organisation of the WOS event around the day of Wubbo's birthday to celebrate Wubbo's legacy. This year the programme focussed on the topic of climate adaptation and water. These five big events attracted in total about 6.000 participants.

We (co-)organised many smaller events. Also for the events, we use the same three categories of support, as mentioned above for funding: Bronze, Silver and Gold.

- Bronze = light support, help with catering, location, communication;
- Silver = in addition to bronze also supported in drafting the programme of the event, or contributing to the programme
- Gold = WOS was deeply involved or the initiator and without it the event would have not been organised).

Looking at the events we organised in 2025 (in total 68 - see table below), these events were organised with Bronze (42%), Silver (18%) or Gold (40%) support from the WOS team. The events focussed on the overall topics of the Schools (33,5 %), or on one of the four topics specifically - Hydrogen (41%), Public Participation (14%), Climate Adaptation (8,5 %) and Twin Transition (3%).

Table 3: Summary of events - using the 4Schools categories

High-level workshop	18
Large(r) scale congress or symposium	6
Internal research meeting	19
Networking event	25
<b>Totaal</b>	<b>68</b>

In addition, WOS broadened its outreach by integrating art and design perspectives into the energy and climate conversation, through a series of three connected events: the Art Across Energy, Climate and Sustainability symposium, the Art of Energy Transition excursion (in collaboration with the New Energy Academy), and the Art of Energy Transition: Future of Groningen exhibition. WOS supported the artistic-scientific discussion and installation "Constellations of Art and Energy Transition." Developed by art curator Sayoko Matsutani in collaboration with nuclear energy researcher Nasser Kalantar-Nayestanaki (FSE), the installation transformed scientific diagrams and object images from UG researchers into a large-scale monochrome artwork exploring narratives of the energy transition.

Presented in the Forum Groningen library area during the ERN, it offered a visually compelling entry point for the conversation with the general public. Allowing a different entrypoint into a complex world of energy themes. Through this contribution, WOS strengthened the interdisciplinary and public-facing character of the topic and showcased how art can serve as a bridge between scientific insight and societal engagement.

Table 4: Overview of events/activities organised by WOS

Name event	Type Event	Topic WOS	Support	Schools involved	Faculties involved	External partners
Energy, Tech & Tunes	Event	all	Silver	All		ESNS
Opzetten twin transitie	Meeting	Twin transition	Silver	JTS	none	FME
CAP meeting bedrijven	Meeting	CAP	Gold	none		Hanze
Minor Energy Transition	Education	all	Bronze	none	FEB	
M20 matchmaking event	Event	all	Gold	All		
meeting JTF Train and Learn Hub	Meeting	Hydrogen	Gold	none	FSE, Law, FBS	Hanze
Nera NWO	Meeting	PPC	Gold	none	none	NWO
participatie symposium	Event	PPC	Gold	none	none	Hanze
UG impact challenge speeddate	Education	all	Bronze	All	all	
Bezoek aan Stellenbosch	Visits	all				Stellenbosch
bijeenkomst LLO Noord Werkt	Education	Hydrogen	Gold		none	
uitreiking video competition	Event	CAP	Gold	none	none	Sensu
WOS dag 2025	Event	all	Gold	none	none	
geothermie	Event	PPC	Silver	none	FSE, FSS, FBS	TNO, Ministerie
start Osaka expo	Event	CAP	Bronze	none		
UG impact challenge Finale	Education	all	Bronze		all	
RETO conference	Event	PPC	Silver	none	RCS, Law	
Minor Fair	Education	all	Bronze		all	
EU project 2ISECAP	Event					
Bootcamp HySuccess	Meeting	Hydrogen	Gold	none	Law, FBS	
Building Bridges: EU and Asia on Critical Raw Materials	Event		Bronze	none	Arts	
TDSR car reveal	Event		Bronze	none		
visit Univ Ghana	Visits					
New Energy Forum	Event	all	Bronze	JTS, RAS		
Visit Makerere & Ghana University	Visits	all	Bronze	none	Arts	
meeting JTF Train and Learn Hub	Meeting	Hydrogen	Gold	none	FSE, FEB, Law	Hanze
Seminar: Lokale Energiecoalities	Event	PPC				
summerschool climate adaptation Casus Westerkwartier	Education	CAP	Gold	none	CF	Hanze, GCA
summerschool participatie	Education	PPC	Gold			
summerschool energy challenge	Education	Hydrogen	Gold		FSE, FEB, FSS	
Energy Minor- Opening minor	Education	all	Bronze		FEB	
Minor Climate Change and Inequality	Education	all	Gold		FSE, RCS, Arts	
Visit of Oldenburg	Visits					
Visit of ITB, Indonesia	Visits					

A Research Agenda for Energy Commons Law	Event				Law
Roundtable on energy communities	Meeting		Bronze	none	Law
A Research Agenda for Energy Commons Law	Event				Law
Strengthening Structural Ties with the Dutch Government	Meeting	all	Silver		
Visit of University Colombia	Visits	Hydrogen	Gold	none	FSE, Law
<b>European Researchers Night</b>	Event	all	Gold	All	
bijeenkomst LLO Noord Werkt	Education	Hydrogen	Gold	none	none
Floating futures M. vd. Brink	Event	CAP	Bronze		
PCINU Belanda 4th Biennial Conference	Event	all	Silver	All	
Carbon Capture and Utilization FWD	Event	all			
Zpannend Zernike	Event			All	
Visit Nepal to UG	Visits				
Wind meets gas (9-10 oct) deelsessie UG	Event	all	Gold		FEB
BITS visit	Visits	Hydrogen	Silver		FSE
GreenSkHy Autumn School	Education	Hydrogen	Silver		FSE
WOS Advisory Board meeting	Meeting				
Hydrogen Technology World Expo	Event				
Christ University visit @UG	Visits	Hydrogen	Bronze		FSE, Law
Waterstof Werkt	Meeting		Bronze		NEC
Hydrogen Systems	Meeting	Hydrogen	Gold		
Geo2Energy	Meeting	Hydrogen	Gold		
Innokite Hacketon	Education	all	Bronze	none	all
Energy Research project	Education	hydrogen		none	all
Twin Transition 'Net op Groen'	Event	Twin transition	Silver	JTS	
Fuel Cell and Electrolyser	Education	Hydrogen	Gold		FSE
Water transition	Event	CAP	Gold		Hanze
Art Across Energy, Climate and Sustainability	Event	all	Gold		FSE, Arts, RCS, FBS
Exhibition 'Art of Energy Transition: Future of Groningen'	Event	all	Bronze		FSE, Law
Symposium 'Zin voor Duurzaam'	Event	PPC	Silver		Noorden Duurzaam
Amrita University	Meeting	Hydrogen	Silver		FSE, FEB, Law, RCS
Energy Research Project	Education	all	Bronze	none	FEB
Symposium Citizen engagement in the Energy Transition	Event	PPC	Silver		FEB, LAW

**Possible scale for visualisation realisation KPA:**

1/1 point for having a plan of action

1/1 point for an own yearly large scale activity

1/1 point for yearly large scale activities with other Schools or partners

1/1 point for frequent research and teaching activities at HoC

0/1 point for engaging with marginalised societal groups

Result so far: 4 out of 5 (one point less than in 2024)

## #4 Interdisciplinary research activities on school theme (events, groups, programmes)

See previous section.

## #5 Engagement with relevant regional partners (including University of the North)

### Regional cooperation

WOS followed up on the lobby programme drafted in 2024. In this regard, WOS strongly builds upon the partnership with New Energy Coalition. The added value of such a partner is visible when considering that the lack of such a partner in the field of climate adaptation (NEC only focuses on energy) makes the setting up of the CAP much more labour intensive than the setting up of the HVCE and Public Participation Centre. The WOS represents the University of Groningen in the LLO Noord Werkt and JTF train and learn hub projects, which are also working to establish a regional partnership between knowledge institutions (and companies) in the northern regions of the Netherlands. The Netherlands Energy Research Alliance (NERA) is another key national partner for WOS. Thanks to strategic positioning of two WOS scientific coordinators as secretary of NERA, WOS has a strategic positioning within the development of national energy research programmes. See for example the NWO NWA calls on "[Scalable Positive Energy Districts \(PEDs\) to create an inclusive energy transition](#)" and "[Agrivoltaics NL: Advancing Multifunctional Solutions for Social Acceptance and Landscape Experience](#)", which have been codesigned with their direct input or the national [NERA NWO Energy Symposium](#) (350-400 participants) for interdisciplinary research in the energy field. Next to that, one of our coordinators is involved in the development of a committee to link politics and research to identify how NERA can incorporate UG specific energy topics in their advocacy in The Hague. In addition, we contribute actively to the communication subgroup, supporting NERA in organising events, advancing internal projects, and shaping concepts for online communication.

Moreover, we strengthened the relationship with the UvhN partners. The HVCE, the Climate Adaptation Platform (CAP) and the Public Participation Centre (PPC) all three have a University of the North character. In addition, they also have a public-private character. For the CAP and PPC, WOS invested in two Just Transition Funds-proposals for the themes of Climate Adaptation (7M and 7,5M Euro, respectively), Public Participation and one EFRO project on Twin Transition (8M euro). As a result, WOS expanded and strengthened their regional network both in the private sector and with local governments.

WOS gave support to the Regional Panel on Climate Change in Northern Netherlands ([RPCC/NN](#)), an initiative by an independent group of scientists in the North of the Netherlands to engage in regional climate change research, in relation with the IPCC.

In 2025, three experts from the University of Groningen have been selected as authors for the Seventh Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) — the world's foremost body for assessing climate science. Prajal Pradhan has been appointed as Coordinating Lead Author. Klaus Hubacek and Linda Steg, leader of the Hy-SUCCESS project, have been appointed Lead Authors for the next IPCC Assessment Report (AR7). Linda Steg will focus on factors influencing the feasibility of climate mitigation.

Thanks also to the intensive collaboration with the Kwartiermaker NijBegun, Akkoord van Groningen, NPG, SNN in the field of hydrogen economy and climate adaptation, WOS contributed to the drafting of the Energy Theme within the Economic Agenda published in March 2025 (See entry 'Top Institute for Sustainable Energy' in the agenda). The proceedings of the HVCE also contributed to attracting investments in the Phynix project (Base load power unit in the Eemshaven) and the ongoing development of the EmmHy test centre in Emmen (15Mw testing centre for electrolysers). The WOS is regularly invited to partake in several regional (gala) events, with particular mention of the Stadsdinner, Prinsjesfestival, and Eurosonic Noorderslag.

### International Cooperation

In 2025, WOS further deepened and strategically expanded its international collaborations. A central focus this year was the active international positioning of HVCE, which is increasingly recognised as a

blueprint for Hydrogen Valleys for regions outside the EU. This year researchers connected to WOS visited (potential) partners to discuss collaboration opportunities in strategic countries.

Within Europe, WOS strengthened cooperation with the University of Cyprus through the Phaethon project and intensified long-standing partnerships with the Universities of Oldenburg and Bremen. WOS' involvement in Oldenburg and Bremen centres on the thematic domains: Earth and Environmental Sciences (including climate related research) and the Green Transition, covering energy systems, energy materials, and social sciences focussing on just transition and public participation. This provides the University of Groningen with a direct role in shaping a cross-border research and innovation ecosystem, aligning northern German and northern Netherlands strengths. In October 2025, WOS participated (through HVCE) in the Groningen Hydrogen Valley pavilion at the Hydrogen Technology World Expo in Hamburg. The pavilion, jointly presented with DNV, Douna Machinery, Gasunie, Groningen Seaports, New Energy Coalition and other regional partners, showcased the leading role of the Northern Netherlands in building an integrated hydrogen ecosystem. The Expo attracted more than 20,000 visitors, offering significant visibility for the regional innovation ecosystem. New opportunities for collaboration are also being explored with the University of Cambridge and the University of Gdańsk.

Beyond Europe, efforts focused on countries developing Hydrogen Valleys or positioning themselves as future hydrogen exporters. One of the showcase partners is India. We joined several hydrogen and energy missions, and presented HVCE during conferences. In June the Department of Science and Technology (DST) launched the India–Netherlands Hydrogen Valley Fellowship Programme, and preparations for an MoU with all IITs are being made. In Nepal reciprocal visits helped initiate new partnerships and explore joint research agendas. With our strategic partner in Indonesia, the Universitas Gadjah Mada, we are also discussing interdisciplinary research projects on hydrogen.

WOS is an active partner in the Africa-Europe Clusters of Research Excellence (CoRE) on Renewable Energy (CoRE RE) - a programme of ARUA (African Research Universities Alliance and The Guild of European Research-Intensive Universities, with Stellenbosch University (South Africa) in the lead, Makerere University (Uganda) and the University of Ghana (Ghana), together with University of Ghent (co-lead), University of Oslo and UG. The aim is to strengthen research and joint PhD-programmes with Sub Saharan Africa and to build a Hydrogen Campus Southern Africa (HYCASA). In South America, the UG strategic partner, the University of São Paulo, specifically the Research Centre for Greenhouse Gas Innovation visited us again after initial discussions in 2024 to further discuss funding programs to jointly develop their centre. A new emerging partner in Colombia is the University La Guajira, for which we are discussing joint educational programs and the development of a Hydrogen Valley in the region La Guajira, in collaboration with a Dutch partner, namely Gutami.

Through this broad international engagement and active presence, WOS continues to position itself and HVCE as a key knowledge partner in the global energy transition.

For 2026, we aim at uptaking the level of engagement with relevant regional partners. We positioned HVCE within the upcoming Economic Agenda and WOS will work at doing the same for the Participation Centre and Climate Adaptation Platform. Besides starting the exchange programme with India, we work in setting up similar programmes with South Africa, Brazil and Colombia.

***Possible scale for visualisation realisation KPA:***

- 1/1 point for cooperation with UvhN
- 1/1 point for cooperation with AvK
- 1/1 point for collaboration with German partners
- 1/1 point for cooperation with ENLIGHT
- 1/1 point for collaboration with ARUA

Result so far: 5 out 5 (same as in 2024)

## **#6 Active engagement with interfaculty PhD programmes or projects**

At the start of the year, the 4Schools together organised a M20 matchmaking event for UG staff to meet each other and get inspired to collaborate on an interdisciplinary M20 proposal. Also research master students were invited to join and meet with potential supervisors to develop M20 projects. In

total, 4 new M20 positions were established on the topic of climate adaptation (involving colleagues from Arts-LAW and FSE-FSS) and public participation (involving colleagues from FSS-FSE and FEB-FSE).

WOS has launched or supported several interfaculty project proposals, attaching postdocs and funding for other positions (supporting staff; technicians; visiting academics), such as the PIOENNIERS proposal on twin transition (8M Euro), JTF Noordelijke Leergemeenschap Participatie (7.5M Euro; positively evaluated), JTF Klimaat Campus (7M Euro).

WOS also supported the development of joint PhD projects, and a postdoctoral fellow such as the India Netherlands Hydrogen Valley Fellowship Programme (+15 joint PhDs, +15 Postdocs and exchange of staff) that got awarded. WOS is also supportive of joint PhD's fellowship programmes with Indonesian universities (under the lead of Prof. Jayawardhana) and within the CoRE Renewable Energy (ARUA-Guild collaboration).

For 2026, similar programmes are in the making with Brazil and Colombia.

**Possible scale for visualisation realisation KPA:**

- 1/1 point for M20 programme
- 1/1 point for i-PhD group
- 0,5/1 point for postdoc programme
- 1/1 point for larger research programmes at regional level
- 1/1 point for larger research programmes at international level

Result so far: 4,5 out of 5 (0,5 more than in 2024)

**#7 Active interdisciplinary education initiatives (project- and challenge-based)**

The focus of the WOS in 2025 was on continuing its position as a catalyst for interdisciplinary and challenge & society based education.

Table 5: Summary of the educational activities of the WOS

Type of education activity		Summary WOS educational activities
Curricular	Minor	<ul style="list-style-type: none"> <li>- Minor Climate Change and Inequality (run in sept for first time)</li> <li>- Minor Energy Transition from Multidisciplinary Perspectives (supported)</li> <li>- Minor Energy and Climate Law for non-Lawyers (supported)</li> </ul>
Extra-curricular	Summer / Winter School	<ul style="list-style-type: none"> <li>- Energy challenge: Hydrogen economy as socio-technical challenge</li> <li>- Public Participation in Sustainable Transitions: Energy island Ameland</li> <li>- The Future of Climate Adaptation: Research and innovation on climate risks</li> </ul>
	Other	<ul style="list-style-type: none"> <li>- UG Impact Challenge</li> <li>- Hackathon by Innokite (supported)</li> </ul>
Postacademic	Life Long Learning (LLL)/ Asynchronous education	<ul style="list-style-type: none"> <li>- 2 online modules about the basics of and safety around hydrogen together with other knowledge institutes &amp; companies in the region</li> <li>- GreenSkHy Autumn School</li> </ul>

**Regular educational activities**

WOS helped in setting up the minor Climate Change and Inequality with the Faculty of Religion, Culture and Society (penvoerder), faculty of Arts and Faculty of Science and Engineering. The first edition started in September 2025 with 12 students from different disciplines. The minor contained two newly developed courses - Global Inequality and Climate Changes: Themes and Approaches and

Climate Change Inequalities: Challenge-Based Projects - with teachers from more than 5 faculties. During the Challenge-Based course, two groups of students work on two different challenges. The first challenge of this edition focuses on how the resilience and adaptive capacities of traditional pastoralists in the Karamoja Cluster can be improved to meet the challenges they face due to climate change and related factors. The other challenge focuses on how the Municipality of Groningen can increase citizen participation in the energy transition in Selwerd district of Groningen.

In addition, WOS collaborated with the Minor Energy Transition from Multidisciplinary Perspectives coordinated by Machiel Mulder (FEB) and the Energy and Climate Law for non-Lawyers (also for professionals) (LAW).

### **Extra curricular activities**

WOS organised three interdisciplinary summer schools in 2025 that are available for master students, PhD's and professionals:

1. Energy Challenges (third edition), with a challenge by Gasunie and Impact Hydrogen on the hydrogen corridor in South Africa and Europe.
2. Public Participation in Sustainable Transitions (second edition), with a challenge on Energy Island Ameland by Amelander Energie Cooperatie
3. The Future of Climate Adaptation (new this year), organised together with Research Centre for Built Environment – NoorderRuimte (Hanze University of Applied Sciences), with a challenge from the municipality Westerkwartier.

In total, the summer schools attracted 40 participants from different countries within Europe. Due to visa problems, less participants came from countries outside Europe this year. Participants were very positive about the summer school, giving high scores on the evaluation of the summer school.

WOS took part in organising the first UG Impact Challenge, with the other Schools (JTS and RAS), and Entrepreneurship & Knowledge utilisation (Research and Impact), under the lead of Soapbox. The kick-off of this challenge was at the end of 2024, and finished with a grand finale in May this year. Of the 50 teams that started the challenge, 6 teams focussed on topics related to Energy and/or Climate - attracting more than 80 students.

WOS also supported the Innokite Weekend: From idea to impact on 8-9 November, with energy as one of the topics.

### **Life Long Learning (LLO)-activities**

In 2025, WOS has worked intensively on educational initiatives, both at regional and international level with different knowledge institutes and companies, within seven different hydrogen projects. Within these projects online educational modules and organising training courses and workshops are developed, a great deal of energy has been put into building networks and strengthening cooperation with other knowledge institutions in the Northern Netherlands. The first results of these efforts are now visible. Examples include multilevel cooperation (MBO/HBO/WO) in the form of 2 online modules about the basics of and safety around hydrogen, and challenges and competitions for students.

For the social challenges of the Energy Transition, Climate Adaptation and Public Participation education and LLO-training activities for students and professionals are included in the submitted JTF proposals (mentioned above).

In 2026, WOS will continue to function as a catalyst and network organisation, with the ambition of promoting interdisciplinary and challenge & society based education within its themes.

- The Minor in Climate Change and Inequality will be structurally embedded in the University of Groningen's minor programme offering in 2026.
- The three summer schools will be structurally embedded in the summer school programme. In addition, we will investigate whether we can organise these summer schools in collaboration with other universities or in other countries, for instance as part of the CoRE RE.
- the WOS will continue to develop and implement hackathons and student competitions/challenges in collaboration with social partners and other knowledge institutes. Building on our recent experience with hackathons, we will now assess which formats align best with the WOS mission and vision. Based on this, we will determine the level of our involvement and commitment moving forward.

- WOS will further expand and implement the LLO activities for the regional focus on human capital for hydrogen, climate adaptation and social aspects of the energy transition.
- The WOS will continue working on the innovation of education and develop new educational tools and instruments to enhance impact driven interdisciplinary education. This will be most notably done through the development of the Learning Communities under HVCE, PPC and CAP, and by developing a digital academy under HVCE.

**Possible scale for visualisation realisation KPA:**

1/1 punt voor ontwikkelen onderwijsplan

1/1 punt voor opzetten/ondersteunen summer/winter school

1/1 punt voor organiseren hackathons

1/1 punt voor interdisciplinary minor

1/1 punt voor online onderwijs (online module/online education/podcasts)

Result so far: 5 out of 5 (improved in comparison with 2024)

## #8 Joint activities and synergies between schools

In 2025, the four Schools together organised for the fourth year a large public engagement event, the European Researcher's Night (ERN) in Forum Groningen, after successfully getting granted the application for organising the ERN in 2025 and 2026. This event was larger than the previous year with 50 activities divided over four floors in Forum Groningen. The event attracted 2,200 participants. This year a programme for high school pupils was organised during daytime, before the event kicked off in the evening, with 230 pupils from different schools around Groningen. The week after, Zpannend Zernike, the event for families and children was organised at House of Connections, with about 800 participants. In the week in between the two events, the Week of Connections, several markets in and around Groningen were visited to connect with citizens on the topic of microplastics. Under supervision of the Public Engagement officer of Aletta, an installation DataWash was developed on the topic of twin transition with input from Michelle Cucuzzella (scientific leader for this topic, FSE), Linda Steg (FBSS) and Luis Gabriel Cordova (LAW). The installation will be used by both WOS and JTS, at events for researchers and for the general public.

At the start of the year, the 4 Schools together collaborated in organising a M20 matchmaking event, to bring together potential research master students and supervisors of new M20 projects.

Three of the four Schools (RAS, JTS and WOS) collaborated together on the first UG Impact Challenge, under the lead of Soapbox, and in collaboration with Entrepreneurship & Knowledge utilisation (Research and Impact). This impact challenge kick-off at the end of 2024, and finished with a grand finale in May this year. In total, 87 students (22 master and 65 bachelor students) participated in the challenge, divided over 50 teams. At the end, 16 teams took part in the grand finale, 8 teams for the ideation category and 8 for the advanced category.

WOS collaborates closely together with JTS on the topic of Twin Transition. Together, they organised a number of events in 2025 - both small meetings and the bigger event "Net op Groen Noord-Nederland" to reach out to a larger network. The event attracted more than 100 participants, mainly representing the regional SMEs and policy makers.

The Schools worked further on having a common vision with shared support staff, (more) shared programmes and exchange of working methods, as part of the Action Lines within the context of the UG's response to the new Governmental Agreement.

In 2025, the 4 Schools organised one team building event for the 4Schools and the team of House of Connections. Due to busy agenda's it turned out to be hard to find data ad hoc that match all the 4 Schools. For next year, we aim to organise three team building events and plan these well in advance.

In 2026, the Schools aim to organise again the European Researcher's Night (ERN) in Forum Groningen. A new proposal for 2026 and 2027 was submitted. We will continue on unified Schools structures, shared support staff and with (more) uniform programmes.

The development and implementation of the new Schools Governance and related efficiency plan in 2026 is expected to bring about further cooperation among the Schools.

**Possible scale for visualisation realisation KPA:**

1/1 point for common Schools Vision

1/1 point for Common Staff

0,5/1 point for common team building events

1/1 point for at least one common large project

1/1 point for at least bilateral strengthened collaborations with all other Schools

Results so far: 4,5 out 5. (same as to 2024)

## IMPACT (after 3 years)

### #9 Conversion of small research initiatives towards larger projects / bids

#### **Hydrogen Campus Valley Europe**

By many measures, HVCE is a big programme already, with a 110 million euro budget, spread over 16 projects, involving about 50 public/private companies. This is a full fledged University of the North action, despite not being officially recognised as one. After an initial slow start, the collaboration between the knowledge institutes really starts to get momentum. In the coming years we expect to gain more benefits from the collaboration. Over the next few years, the collaboration hopes to earn an extra 150 million euros for the green molecules ecosystem, by making use of the various opportunities mentioned above. Moreover, it aims at expanding its scope to system integration and CO2 circularity. We already positioned HVCE in the context of the NPG and Economic agenda programmes to this extent, as well as in the context of the European Clean Hydrogen Partnership.

#### **Climate Adaptation Platform**

For the CAP the focus this year has been on developing the 1st dedicated CAP proposal, resulting in the submission of the JTF proposal Klimaat Campus (7.5M euro budget). The development of the proposal led to a stronger collaboration with Hanze University of Applied Sciences, Alfa College and Noorderpoort (growing into a University of the North action), a growing network with local government and companies, and a clearer vision on research, innovation and education on climate adaptation in the region. This proposal (granted or not) is likely to lead to further spin offs in the field of climate adaptation.

#### **Public Participation Centre**

For the Public Participation Centre, the proposal for the JTF programme (Transitieregeling) aiming at attracting 7.5M Euro for creating a Living Lab in cooperation with N-NL partners is positively evaluated. In addition, action is taken to secure funding via Nij Begun to put public participation on the agenda for the upcoming years to come. In addition, the PPC supported the submission of the EU COST Action proposal PARTICEP, which aims to organise and integrate the currently fragmented knowledge base on public participation in climate and environmental policymaking. This proposal strengthens the international network of the PPC and contributes to establishing a coordinated European community working on participation and just transition governance.

#### **Twin Transition (PIOENN)**

WOS continued the establishment of the Twin Transition theme—green and digital, together with JTS, and continued the collaboration with FME and the Municipality of Groningen on this theme. WOS supported/co-organised a number of events on this topic, and worked on a number of calls to set up an ambition programme for ecosystem transformation in N-NL on this topic. WOS is not working in developing a long term cooperation programme with all relevant parties in Noord Nederland, which at the moment is called PIOENNIERS (8.5M Euro). This programme should be launched in 2026.

### #10 Active and targeted dissemination and social media programme

Our communication officer (shared with JTS), keeps our WOS website up-to-date with information on the four themes, with news items and upcoming events. In addition, she helped in the development of the website for the Climate Adaptation Platform and maintains the website on Public Participation.

She continues to send out monthly newsletters, which are well-filled with reports from recent activities, news, calls for funding and upcoming events. The number of recipients is growing; we have now 481 internal and external subscribers. We update this list in relation to our external network at a regular interval.

The network of the WOS is growing via the social media channels. We developed a content calendar for 2025, with the aim to post frequently on our LinkedIn account. Target audience consists of UG-staff and students (internal), and businesses, governments, citizens and partners (external). We now have 836 followers on LinkedIn (double from last year). We decided to close our X account, due to changes to content moderation policies, and the departure of a large portion of our target audience from the platform.

## #11 Influence from activities around school themes on policy, industry and/or research agendas

In 2025, WOS followed up on the Lobby Plan/Map, developed in the previous year in cooperation with R&I Unit. Individually and in cooperation with Research and Impact, WOS contributed to the research agendas for Masterplan Campussen, Economic Agenda Northern Netherlands, JTF, NPG, NERA (and via NERA NWO), Top Sector HTMS, and Hydrogen Research Europe (HER), as well as GUILD and ARUA. WOS is also actively involved in the KIN-klimaatcentra.

## #12 Establishment of renewed Minors, Summer/Winter Schools relevant to school themes

See education, above #7 Active interdisciplinary education initiatives (project- and challenge-based)

## #13 Establishment of impact examples and narratives on school themes

In 2025, the WOS published its [Annual report 2024](#). Our impact journalist of the four Schools, Jelle Posthuma, created an online storymap for an overview of 2024 based on existing publications, reports of events and in depth evaluation of our research, education and societal impact.

In 2025, our impact journalist wrote a number of articles, using different strategies. He also gave impressions of several WOS events in hindsight, such as the one of the Symposium Bewonersparticipatie and the Urgency of the Water Transition. The impact journalist also strategically interviews scientists upfront to interest parties to join the event, see [the interview](#) with Johannes Miocic and Bas Ankone upfront for the event From Underground to Mainstream: Leveraging the Subsurface for a Successful Energy Transition. The impact journalist also interviewed scientists on each of the four the School's topics, see the interviews with Massid Zekavat, Michele Cucuzzella and Goda Perlaviciute. In addition, he helps researchers with news articles/press releases and media contacts to make their research findings visible - see [the publication](#) of Prajal Pradhan on the CO<sub>2</sub> footprint of construction.

### EVENTS

- [Workshop: Securing the Future of Offshore Wind Energy: Digital Twins and Cybersecurity](#) (FSE & LAW)
- [Symposium Bewonersparticipatie: samen werken aan een duurzame toekomst](#)
- [2025 Energy and Climate Economics and Business Days](#) (CEnBER-FEB & UGBS)
- [Symposium: From Underground to Mainstream: leveraging the subsurface for a successful energy transition](#)
- [Carbon Capture and Utilization FWD](#) (with Chemport Europe & Groningen Seaports)
- [Meeting | De noodzaak van de watertransitie](#) (with R&I, Hanze)
- [Symposium - Jointly Getting the Energy Transition Done: Potential, Best-Practice, and Support for Citizen Entrepreneurship](#)

### NEWS

- [Humour facilitates environmental advocacy](#) (by Jelle)
- [Linking climate change to SDGs for a more sustainable future](#)
- [Symposium Bewonersparticipatie: 'Meestal zeg ik niet direct dat ik van de gemeente ben'](#)
- [Speed-dating with businesses at the UG Impact Challenge](#) (by Jelle)
- ['Societal aspects are just as important as technology'](#) (by Jelle)
- ['The great part is getting direct feedback as a researcher'](#) (by Jelle)
- [Overcoming grid congestion: 'Making better use of what we already have'](#) (by Jelle)
- [Engage citizens in sustainable transitions: 'The top-down approach doesn't work'](#) (by Jelle)
- [New Minor on Climate Change and Inequality kicks off at University of Groningen](#) (education)
- [Baseload Power Hub aangekomen in Eemshaven, mijlpaal voor Groningen Hydrogen Valley](#)
- [Global construction carbon footprint set to double by 2050, study warns](#)
- [University of Groningen Promotes Hydrogen Careers at Hydrogen Technology World Expo](#)
- [It's not just about the fuel: it also matters who produces hydrogen](#)
- [Educating Europe's Hydrogen Workforce: Groningen Hosts Practical Hydrogen Course](#) (education)
- ['Summer Schools are a showcase for interdisciplinary education'](#) (by Jelle; education)
- [The water transition: necessary and only possible with intensive collaboration](#)

In 2025, we experimented with a number of different methods to create impact.

- In collaboration with Ron Holzacker (Arts and FSS), WOS helped with the development of 9 impactful videos made by SENSU Green based on the book Transformative Futures of Cities: Climate and Sustainable Development to show during the World Expo in Osaka. Another two videos were added to highlight Dutch research on water management. In addition, a video competition on transformative futures was launched for students from universities in SE Asia, Australia and our university.
- WOS supported the art curator Sayoko Matsutani in the development of the exhibition the Art of Energy Transition, at the municipality Groningen. The event got a number of spin offs, with a shared presentation with Nasser Kalantar Nayestanaki during the European Researchers Night, and an event on The Art of Energy Transition in the House of Connection.
- The installation DataWash (WOS/JTS) on Twin Transition (see above).

We will evaluate the method used and take the lessons learned on board for 2026.

By 2026, the WOS aims to use impact journalism more strategically in the run-up to events. By publishing interviews and articles in advance, that could steer (sub)topics and discussions during the event.