Session Report: Evidence Based Policymaking at the EGU General Assembly 2025

By Marie Heidenreich, Head of SynCom | Helmholtz Earth & Environment | August 19, 2025

Vienna — The European Geosciences Union (EGU) returned to the banks of the Danube this spring, drawing 20,984 registered participants from 120 countries to its 2025 General Assembly. Of these, 18,646 scientists, practitioners and policymakers filled the Austria Center Vienna in person, while 2,338 joined online. Against that lively backdrop, and during a week marked by a program notably rich in science policy themes across divisions, SynCom (Synthesis and Communication Platform of the Helmholtz Research Field Earth & Environment), a cross-center hub that distils research from seven Helmholtz Centers into actionable knowledge for decision makers, co-organized a program exploring how evidence informs public policy.

Figure 1. Speakers from Session EOS4.1.

Figure 2. Participants gather on Friday morning for engaging discussions on strengthening the science-policy interface.

Figure 3. Marie Heidenreich opens the session “Strengthening Policy Through Science: Insights from the Interface,” highlighting the importance of evidence-based policymaking.

Figure 4. Co-convener Aoife Braiden introduces key note speaker Denis Naughten to the European audience.

Figure 5. Chloe Hill, EGU Science-Policy Officer, joins lively discussions among participants on the challenges and opportunities at the science–policy interface.

Setting the Scene: EOS4.1 Science-Policy Splinter Meeting

On 29 April, the Science Policy Splinter Meeting — held as a dedicated part of Session EOS4.1 — brought together researchers, policy professionals, and communicators for a half-day of honest, informal exchange. Chaired by Marie Heidenreich, Georg Sebastian Völkel, and Aoife Braiden, the session built on the momentum of previous years while introducing new elements aimed at strengthening dialogue across the science-policy interface.

The meeting opened with a short welcome where participants were encouraged to speak freely, share lessons learned, and build new connections — not just to present success stories but to explore what hasn't worked and why. To get the conversation moving, the session began with a structured networking round. Participants paired up in two facing lines and moved down the row after each exchange — answering short, playful but revealing questions such as: How would you explain your work to a six-year-old? What would you be doing if not this job? What's something you learned recently? What would you do with one million dollars? What did you come to see or learn this week in Vienna? Every exchange began with a simple two-word introduction, helping participants quickly place who they were talking to. The result was an energized room, with new connections forming across disciplines, career stages, and countries.

After that, the session moved into more focused group discussions — looking at the ups and downs of real-life science-policy engagement. In small circles, participants were invited to reflect on their own experiences and answer two central questions: First: What have you learned from failure? These conversations were honest and often personal. Some spoke of research delivered too late for a decision-making window. Others described data that was technically strong but too difficult to act on. A few recounted efforts that dissolved after staff changes or political shifts. Misalignment between scientific timelines and policy pressures was a recurring theme. Second: What

has worked — and why? In this round, the tone turned hopeful. People shared examples where building long-term relationships led to meaningful dialogue, where early engagement helped shape a question before it became a policy problem, or where research was packaged clearly enough to influence a decision. Success, participants agreed, often came from sustained effort rather than single moments — and from listening as much as informing. To document the discussion, participants wrote their reflections on cards. These were later grouped into themes. Many of the notes focused on structural or process issues and captured systemic challenges and frustrations:

- Building trust takes time — but policy staff turnover is rapid, often breaking continuity before relationships can yield results.
- Scientific input arrives too late — long after key decisions or positions have already been shaped.
- Uncertainty is not communicated or understood — nuance or ranges are interpreted as indecision or lack of clarity, weakening scientific authority.
- Evidence is poorly framed — strong data fails to resonate because it lacks context, relevance, or accessible language.
- One-size-fits-all doesn't work — tools or approaches that succeed in one institutional context often fall flat elsewhere.
- Even well-prepared input may be ignored for several reason, e.g. because of conflicting interests and beliefs, competing institutional priorities, limited time, or simply lack of awareness.
- Communication cultures clash — scientists seek precision, policymakers want clarity and options.
- Short-term incentives dominate — long-term impact is sacrificed for near-term political `wins´ visibility or institutional priorities.
- Decisions are shaped more by values, legislation, economics, and public mood than by evidence — especially under pressure or in media-sensitive contexts.

The second discussion group focused on the enablers of more effective science–policy exchange, highlighting practices that can help overcome these barriers and pointing to concrete ways of making scientific contributions more relevant, timely, and impactful:

- Early engagement policy process makes a difference — when scientists are involved from the start of the legislation, the framing of questions can change.
- Trust builds over time — personal relationships are often leading to influence.
- Clear communication matters — concise framing, relevance to current policy debates, and the ability to anticipate what policymakers need are all key.
- Tailored approaches work best — success often depends on understanding institutional culture, political windows, and the constraints decision-makers face. Responsiveness to feedback, openness to reframing, and collaborative methods increase chances of uptake.
- Small wins matter — incremental change, embedded advice, or a well-timed briefing can have long-term ripple effects.

- Boundary actors are crucial — individuals or teams that understand both science and policy can act as interpreters and facilitators.
- Visible relevance builds credibility — when scientific input clearly aligns with an urgent issue or societal need, it is more likely to be used.

These reflections will be shared with the participants, the EGU boards and used to inform future programming. They also served as the basis for the closing round of the meeting, where each participant was invited to give a short “report” — a sentence or two summarizing something they’d learned or wanted to share with the wider science-policy community. Several of these closing remarks touched on recent experiences with the European Parliament, where researchers had acted as expert contributors in committee hearings or advisory consultations. Examples included scientists providing testimony on climate adaptation to the ENVI Committee, participating in stakeholder consultations on the European Soil Monitoring Law, or contributing evidence during deliberations on the EU Methane Regulation. These experiences underscored the value — and challenges — of engaging directly with policy and decision makers, and engaging early legislative processes, where timing, clarity, and relevance determine whether evidence is taken up. The discussion pointed to a growing need for structured support and training for researchers acting in these roles, as well as more transparent and inclusive mechanisms for integrating science into policy-making at the EU level.

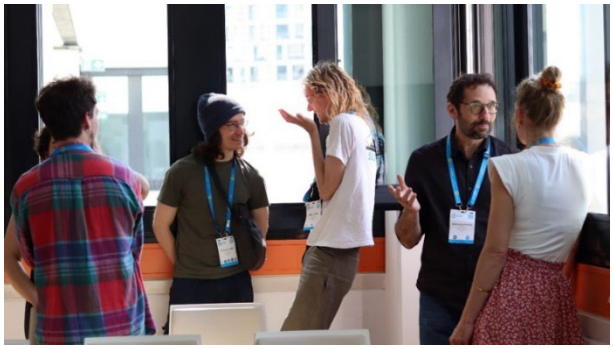

Figure 6. Delegates gather in small groups, exchanging insights and success stories from science–policy engagement.

Figure 7. Participants exchange stories of both failure and success in science-policy engagement—some recalling the importance of timing and how relationships shape outcomes.

Figure 8. In breakout groups, delegates discussed how science can inform policy more effectively—touching on relationship-building, data use, and the practical limits of influence.

Figure 9. During an open conversation on professional setbacks, participants reflected on common pitfalls—like misjudging timing or miscommunicating results—and how such experiences can shape better approaches.

Figure 10. Toward the end of the session, key takeaways were collected—highlighting the nuances of success, the role of communication, and the realities of working across policy systems.

Session EOS4.1 — *Evidence-Based Policymaking: Insights from the Interface*

Led by main convener Marie Heidenreich and co-conveners Maria Vittoria Gargiulo, Aoife Braiden, David Gallego-Torres and Georg Sebastian Voelker, the session was chaired by this team together with Chloe Hill, EGU's Science-Policy Officer.

Denis Naughten, former Irish member of parliament and Minister for Communications, Climate Action and Environment, opened the morning with a reminder that parliaments, not ministries, set the tempo of democratic life. From his seat on the government benches, he had watched good science disappear into departmental in-trays, whereas evidence delivered to a committee could surface, unfiltered, in the nation's statute book. He urged the geoscience community to claim that shortcut. He encouraged scientists to depolarize left- and right-wing narratives by presenting evidence that anchors a solution-centered "third way" and undermines populist extremes. Naughten noted that most legislators actively seek constructive, research-grounded answers to pressing issues and advised researchers to mine plenary debates— "the Google Scholar of Parliament," he quipped, as a guide to which MPs care about their topic.

The difference between policymakers and decision makers was also highlighted: although we often refer to policymakers as the key to developing policy, the more typical situation is that politicians and Ministers ask policy specialists to present a series of practical options to address an issue. However, ultimately it is the Minister who makes the decision regarding national policy (or equivalent at the regional or local level). Also, we routinely refer to policy; however, input into regulation, including the upgrade or modernization of regulation, is equally important and in some cases more accessible for researchers to get involved, for example, in the application of new tools or research outputs to improve monitoring and measuring of regulation.

Figure 11. Denis Naughten underscores the 'easy win' of engaging parliamentary committees.

Andrew Russell followed with an insider's view of the UK system at Westminster. In one year as Climate and Environment Thematic Research Lead in the UK Parliament (plus other civil service positions), he has brokered expert opinion for select committee hearings, coached parliamentary staff on climate adaptation evidence, and written briefings that force ministers to confront unresolved risks. His lesson: a concise, well-timed dossier opens more doors than a stack of journal articles.

Figure 12. Andrew Russell highlights research pathways in committee reports.

Frank Rasche argued that Africa's agricultural leap depends on soil health that benefits everyone. He described a policy triangle—gender transformative finance, multi-stakeholder partnerships, and targeted transdisciplinary research—that can close gaps while elevating women and youths in decision-making. Success, he noted, hinges on embedding social equity into every ton of restored topsoil.

Figure 13. Frank Rasche gestures to a participatory soil health map.

Henry Hempel unpacked the politics of the looming chemical regulation REACH revision. Interviews and workshops show industry touting Europe's high safety bar while NGOs decry delay; a discursive agency analysis reveals how these narratives shape negotiation space. Mapping such positions early, he concluded, can expose compromise routes before drafting begins.

Figure 14. Henry Hempel contrasts stakeholder talking points on a split screen slide.

Clément Lasselin examined how carbon capture decisions sometimes rest on selective evidence. He compared comprehensive sustainability assessments with slimmer briefs now circulating in Brussels and warned that gaps invite litigation and erode public trust. Better metrics and transparent trade off analysis, he said, are prerequisites for scaling geological storage of CO_2.

Figure 15. Clément Lasselin fields questions on life cycle emissions

Marie G. P. Cavitte recounted her Bluebook traineeship at DG CLIMA, where she split time between greenhouse-gas inventory upgrades and Horizon Europe scoping notes. She discovered policymakers crave quick uncertainty flags and clear policy hooks. Trainees, she suggested, are “inside-track translators” who shorten the distance between peer review and regulation.

Figure 16. Marie G. P. Cavitte explains how satellite CO_2 data feed DG CLIMA dashboards.

Sina Bold showed how Germany turned underwater noise science into enforceable limits for offshore wind construction. Continuous MarinEARS monitoring proves that mitigation measures now keep disturbance below ten percent of the EEZ, safeguarding harbour porpoise habitat. The same hierarchy of thresholds, she added, is being adapted for shipping and operational noise.

Figure 17. Sina Bold displays underwater-noise trends alongside porpoise maps.

Valentina Giunta detailed Mercator Ocean International's co-design engine. Champion-user panels, thematic hubs and scenario workshops continuously refine the Copernicus Marine Service, ensuring that datasets drafted for policymakers also serve fisheries and shipping. The approach, she said, turns open data into shared decision platforms.

Figure 18. Valentina Giunta walks the audience through a co-design storyboard.

Jonathan Bamber, a former EGU president, revisited the ERC GlobalMass project that dissected drivers of sea-level rise. Its Structured Expert Judgement on Antarctic extremes made global headlines, thrusting the team into a crash course on sound-bite science. Practice, he advised, your "three sentences for TV" before the camera calls.

Figure 19. Jonathan Bamber sketches an ice-sheet diagram mid-talk.

Liang Emlyn Yang treated Mekong floods as a knowledge resource, not just a hazard. By merging centuries-old chronicles with participatory models his team shows how floating farms, raised houses and shared sirens knit resilience across scales. Policy-makers, he argued, should invest in these proven practices rather than default to hard engineering.

Figure 20. Liang Emlyn Yang overlays historic flood maps onto modern resilience indices.

Theresia Bilola introduced the KADI project's open-science blueprint for African climate services. Low-cost "citizen sensor" campaigns in Cape Town and Dar es Salaam feed air-quality and flood-risk dashboards, while standardized protocols ease data sharing across borders. Embedding training in every pilot, she noted, builds a self-sustaining network.

Figure 21. Theresia Bilola presents a low-cost air-quality sensor developed with students.

Raffaella Russo synthesized lessons from nine disasters studied in the H2020 CORE project. A transdisciplinary lens, she showed, turns post-event reviews into living guidance that busy municipalities can adopt wholesale. Trust flourishes, she said, when citizens see their own experiences mirrored in policy checklists.

Figure 22. Raffaella Russo compares timelines of disparate disaster recoveries.

Giovanna Forlenza presented ARISTOTLE-ENHSP, Europe's first 24/7 multi-hazard advice service. Operating in emergency, routine-monitoring and on-demand modes, it delivered integrated earthquake and weather briefs within hours of Turkey's 2023 quakes. The model, she argued, proves that distributed science can function as a single rapid-response team.

Figure 23. Giovanna Forlenza stands before the ARISTOTLE live-status dashboard.

Joonas Merikanto outlined how MAGICA's working groups distilled IPCC reports, WCRP roadmaps and community surveys into a draft Strategic Research and Innovation Agenda. High-priority gaps include regional process studies and next-generation modelling; feedback from this session will shape the final document. Aligning funding, he stressed, is the next hurdle.

Figure 24. Joonas Merikanto solicits audience input on research gaps.

Cristina Deidda described embedding climate-risk metrics into Europe's TEN-T infrastructure plan. Her consortium used ISIMIP projections to map flood, heat and wildfire exposure, producing a policy report launched at Connecting Europe Days. Early, iterative engagement with DG MOVE, she said, kept academia and contractors on the same clock.

Figure 25. Cristina Deidda maps climate-risk hotspots along TEN-T corridors.

Claire Chenu, professor at AgroParisTech-INRAE, charted how EJP SOIL's 24-country stock takes fed directly into drafts of the Soil Monitoring Directive. Harmonized indicators and open databases now give lawmakers a ready baseline, though negotiating data licenses remains challenging. The timeline match between research and policy windows, she noted, was crucial.

Figure 26. Claire Chenu displays harmonised soil-indicator panels.

Prachee Majumder closed with a case study in parliamentary persuasion. A Bundestag breakfast paired methane-leak satellite images with a factsheet of rapid-win measures, prompting MPs to back a national strategy aligned with the EU Methane Regulation. Follow-up dialogues with agencies keep the momentum alive.

Figure 27. Prachee Majumder shows methane-plume imagery during her closing slide.

Although it was already late on Friday afternoon—with most sessions finished and suitcases lined up in the halls—the closing discussion of EOS 4.1 refused to wind down. Main convener Marie Heidenreich floated the idea of an EGU Science-Policy and Society Division, prompting a spirited back-and-forth on whether a dedicated hub would sharpen best practice or draw work away from existing divisions. The debate ran a good forty-five minutes past schedule—"last women and men standing," one participant joked—before many attendees gathered their bags and made their way home after an intensive week, while a smaller contingent planned to meet again at the Conveners' Reception later that evening.

Figure 28. Engaging discussions among speakers mark the beginning of new alliances.

Figure 29. More discussions unfolded during the session, as participants explored how personal experiences, institutional structures, and communication choices shape science-policy engagement.

Figure 30. Engaging discussions with the newly formed EGU26 science-policy conveners team, highlighting the growing role of the EGU Division on Science, Policy and Society in fostering dialogue at the interface.

EOS4.1 Poster Session

Hall X4 hummed as presenters delivered one-minute pitches before deeper discussion at their displays. Highlights included Prerna Joshi's satellite maps of Himalayan fire corridors, Marie-Isabel Ludwig's digital-twin communication tools, Daniela Domeisen's heatwave-health triggers, Anita Asadullah's citizen rainfall logs, and Alexandre Anesio's glacier-algae images. Agnieszka Jędruch charted Baltic munitions remediation; Alessio Rovere linked Pleistocene shorelines to modern zoning; Leonie Bronkalla profiled German deliberations on solar-radiation modification; Véronique Dehant traced GRACEFUL's societal reach; Avijit Sahay made the case for recognizing slow-onset hazards; and Sebastian Wetterich (Leopoldina – German National Academy of Sciences) demoed a scrolling data story.

Figure 31. Conveners and participants listen with interest as the session turns to real-world experiences from science-policy work.

Figure 32. Georg-Sebastian Völkel introduces the concept of the poster session, setting the stage for exchange on science-policy experiences and approaches.

Figure 33. Prerna Joshi presents her research on forest fire management in the Indian Himalayas, highlighting the urgent need to bridge science and policy through community engagement and technology to support climate goals and regional resilience.

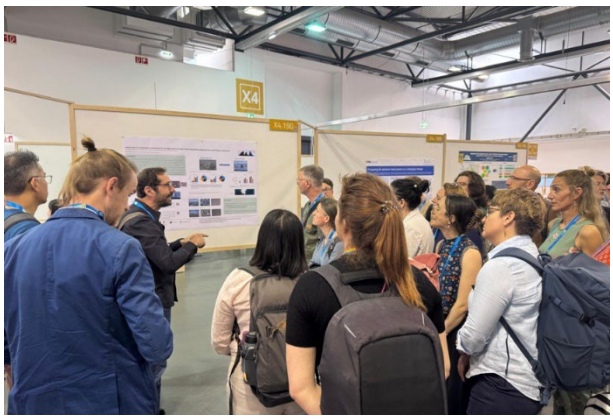

Figure 34. Alexandre Anesio presents insights from the ERC Synergy project DEEP PURPLE and the PROMBIO monitoring program, which together shed light on the biological darkening of the Greenland ice sheet and its implications for climate modelling and policy.

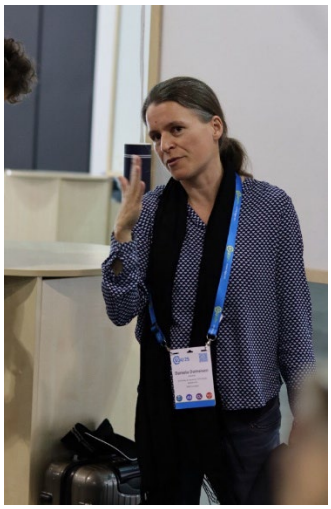

Figure 35. Daniela Domeisen, from ETH Zurich and the University of Lausanne, presents her poster on the potential for extended heatwave warning lead times—highlighting how improved predictability could support more effective planning, policy, and protection against extreme heat impacts under climate change.

Figure 36. During the poster session, attendees paused for in-depth conversations on science-policy case studies, exchanging ideas and building connections across disciplines.

Figure 37. During her presentation, Marie-Isabel Ludwig of Research Centre Jülich reflects on what science communication can learn from the digital twin concept. Many participants contributed their own ideas, engaging actively with the proposal of more dialogical and adaptive approaches to communication at the science-policy interface.

Figure 38. Alessio Rovere and colleagues share insights from the WARMCOASTS project, using geological records from the Last Interglacial to explore how past coastal changes can inform today's climate adaptation strategies.

Figure 39. Leonie Bronkalla (UBA) presents a well-designed and thoughtfully structured poster that drew attention for both its clear visuals and strong content.

Figure 40. Mioara Mandea highlights how data from the GRACEFUL gravity-mission Synergy Grant translate into everyday applications—from groundwater monitoring to satellite navigation accuracy.

Figure 41. Sebastian Wetterich (Leopoldina) demonstrates his “scrolly-telling” interface, showing how interactive storytelling can guide policymakers through complex geoscience data in a single, intuitive scroll.

Figure 42. Megan O'Donnell outlines survey findings on the hurdles—and surprising opportunities—early-career researchers face when stepping into the science-policy arena.

Figure 43. Leo Borchert, Florian Börgel, Daniela Domeisen, and Marie Heidenreich in animated discussion during the EOS 4.1 poster walk.

Figure 44. Animated clusters of attendees swap lessons on framing uncertainty without losing clarity.

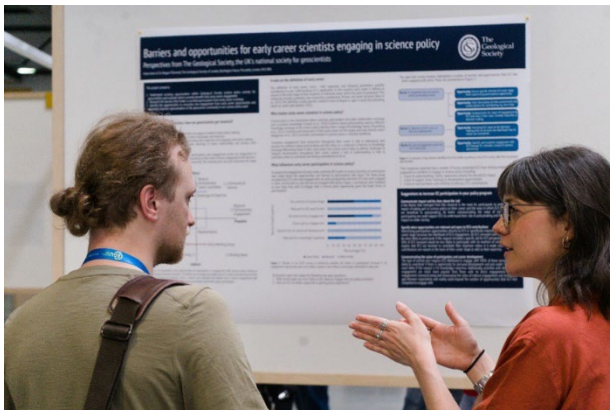

Figure 45. Small groups gather beside the posters, trading quick ideas on how to move evidence into policy debates.

Figure 46. A panorama captures Hall X4 at peak capacity, every poster ringed by listeners.

Virtual participation on 30 April added range: Iuna Tsyrulneva demonstrated how stakeholder dialogues reshape integrated climate-risk models, proving that distance is no barrier to collaboration.

Reflections and Outlook

Across podiums, posters, and round-tables, one point resounded: recommendations stick when trusting relationships precede them. Speakers also converged on the term “evidence-informed”—considered more realistic than “evidence-based” because it leaves room for economics, ethics, and feasibility alongside scientific proof. The animated exchange that capped the oral block, stretching well into Friday evening, produced two next steps. First, Marie Heidenreich will sound out colleagues across several EGU divisions about the merits and risks of creating a dedicated Science-Policy and Society Division. Second, a fresh convening team—drawn from early-career and senior contributors to this year’s session—volunteered to co-organize an expanded science-policy track for EGU 2026. Their brief is to keep the interface visible regardless of whether a new division emerges. Few doubt the demand: EGU 2025’s program was dense with sessions linking research to regulation, and informal feedback points to rising interest in these themes. Session EOS4.1, with its oral session, splinter meeting, and poster exhibition, sets a sturdy blueprint for Europe’s evolving science-policy bridge.