



ETN
Global

Working Group initiatives & objectives for 2025/2026

White paper on sCO2 European large demonstrator					
WG Name	sCO2	Chair	Marco Ruggiero (Baker Hughes)	Co-chair	Albannie Cagnac (EDF), David Sanchez (University of Sevilla)
Project lead	David Sanchez (University of Sevilla)				
Core team	TBD				
ETN officer in charge	Jitka Spolcova				
Initiative description					
Short project description The team will create a white paper laying out the importance of having a large sCO2 European demonstrator to support the continuous development of the technology and to ensure that the European companies and R&D institutions keep their technical/scientific leadership. Funding schemes by European institutions as well as member states will be sought. Interaction with large European R&D infrastructures will provide sound understanding of best practices in managing open access test facilities.					
Objective setting Provide policy makers/funding institutions/member states with a rationale for building an open access sCO2 testing facility in Europe, supported by a business case outlining the expected impact on the industrial and scientific communities and on the job market.					
Expected outcome The white paper will highlight the importance of the technology in a variety of applications, the scarcity of available data and the cost of building a relevant test facility, drawing a parallel to the STEP facility cost and importance. A roadmap to build the demonstrator will be outlined from the interaction with the European Union and Member States. This will include the timeline and funding scheme, and the organizations involved.					
Implementation of the activities					
Project execution <ul style="list-style-type: none">University of Seville (120 hours): first contact with EU institutions and with large R&D infrastructures in EU and USA. Identification of potential funding instruments.					
Project finances No funding is deemed necessary at this point of the project.					
Meeting schedule and dissemination Disseminate to EC, NCPs and key associations (i.e. European Industrial Alliance on SMRs and other similar)					
Deliverables & Milestones (max. 1 per each objective)					
Deliverable 1	Vision of a large sCO2 power system demonstrator in EU			Timing	April 2025
Presentation/document introducing the vision of a large demonstrator of sCO2 power systems in EU: concept, scale, management and operation, location, funding, organizations involved					
Deliverable 2	Proposal to build a large sCO2 power system demonstrator in EU			Timing	June 2025

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Updated version of Deliverable 1, including not only the technical/scientific description of the activity but also a business case supporting the financial feasibility, including funding instruments.			
Milestone 1	Public release of large sCO ₂ power system demonstrator concept	Date	March 2025
The presentation will be released at the Annual General Meeting of the ETN in Bergen. Expressions of interest will be gathered through a questionnaire where interested organizations will provide information about resources they would be able commit (equipment, engineering, construction, management). This information will be used to complement the white paper with a business case.			
Milestone 2	Meeting with funding body(ies)	Date	September 2025
Once Deliverable 2 has been completed successfully, including the identification of 'equity' and of funding scheme/organizations, a first meeting with the latter organizations will be organized. The objective is to present the outcome of this meeting at the October Workshop of the ETN.			
Project timeline			
Please provide a simple planning with milestone and deliverables.			

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CAPEX estimation for an sCO2 offshore application					
WG Name	sCO2	Chair	Marco Ruggiero (Baker Hughes)	Co-chair	Albannie Cagnac (EDF), David Sanchez (University of Sevilla)
Project lead	Matteo Baggiani (Sime)				
Core team	TBD				
ETN officer in charge	Jitka Spolcova				
Initiative description					
Short project description Use preliminary design of an sCO2 WHR system for an offshore application (including BoP) to generate ballpark CAPEX cost					
Objective setting Provide a preliminary design of WHR system based on sCO2 power cycle.					
Expected outcome Report detailing configuration chosen, high level list of components (including BoP), estimation of costs per MW and a sensitivity study on key parameters.					
Implementation of the activities					
Project execution SIME will drive the study. Technology providers (Parker-Hannifin, Siemens, Baker Hughes, NEM, etc) will provide cost ranges for components not on the shelf.					
Project finances No funding is deemed necessary at this point of the project.					
Meeting schedule and dissemination Study can be either turned into a paper and presented at a relevant conference or published on ETN website for wide distribution.					
Deliverables & Milestones (max. 1 per each objective)					
Deliverable 1	Preliminary design of system			Timing	July 2025
Report with high level list of components and simplified schematic/P&ID					
Deliverable 2	Preliminary costing of system			Timing	February 2026
Based on Del 1, a report with cost of system including a sensitivity analysis to several parameters (max cycle temperature, min cycle temp, etc)					
Milestone 1	Team charter			Date	March 2025
Task force in place, including OEMs an users for costs/boundary conditions					
Milestone 2	Baseline info			Date	April 2025
Availability of boundary conditions and other constraints for system design					
Project timeline Please provide a simple planning with milestone and deliverables.					

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sCO2 webinar series					
WG Name	sCO2	Chair	Marco Ruggiero (Baker Hughes)	Co-chair	Albannie Cagnac (EDF), David Sanchez (University of Sevilla)
Project lead	Marco Ruggiero (Baker Hughes)				
Core team	TBD				
ETN officer in charge	Jitka Spolcova				
Initiative description					
Short project description					
Continue serie of informative webinars on sCO2					
Objective setting					
Broadcast 2 additional episodes between April 2025 and March 2026, ideally September 2025 and February 2026					
Expected outcome					
Attract 100+ participants for each webinar to keep sharing and disseminating challenges and advancements in the technology					
Implementation of the activities					
Project execution					
Participant members (and invited non members) will create webinars using the following format: introduction + 2/3 presentations + Q&A, including 2 slido questions. Duration to be max 2 hours.					
Potential webinar topics (potential speakers):					
1. Back to fundamental challenges: EoS and Materials (Bochum/PoliMI/Brescia/DNV)					
2. CO2 battery (PoliMi/Energy Dome)					
3. Open to inputs					
Project finances					
No funding is deemed necessary at this point of the project.					
Meeting schedule and dissemination					
Webinars will be broadcasted through the usual Teams platform and open to non ETN members. The webinars will be advertised on LinkedIn.					
Deliverables & Milestones (max. 1 per each objective)					
Deliverable 1	Webinar 1			Timing	September 2025
Webinar material as presented					
Deliverable 2	Webinar 2			Timing	February 2026
Webinar material as presented					
Milestone 1	Identification of speakers for W1			Date	June 2025
Agree with Chairs list of speaker for webinar 1 and successfully contact them to take part					
Milestone 2	Identification of speakers for W2			Date	November 2025
Agree with Chairs list of speaker for webinar 2 and successfully contact them to take part					
Project timeline					
Please provide a simple planning with milestone and deliverables.					