

## Working Group initiatives & objectives for 2025

CCS Master Thesis on "Uncovering the economic tipping point between H2-based GTs and CCS- enhanced GTs"					
WG Name	CCS WG	Chair	Jens Walter	Co-chair	David Peralta-Solorio
			(BASF)		(Uniper)
Project lead	Jens Walter (BASF)				
Core team	Jens Walter (BASF), Jean Bériot (UMons), Vincent Thielens (UMons), Ward De Paepe				
	(UMons)				
ETN officer in	Nicolò Cairo				
charge					
Initiative description					
Short project description					
A thorough comparison of hydrogen-gas turbines and CCS-gas turbines is to be carried out, with the aim of					
evaluating their respective advantages and determine which solution is more economically viable.					
Objective setting					
The Master student (Jean Benot, Unions) will investigate the following research questions:					
Determine CAPEX and OPEX for both cases, as well as other economical indicators such as LCOE     Analyze the impact of the input percentere on results (i.e. price of hydrogen, capacity of the plants					
<ul> <li>Analyse the impact of the input parameters on results (i.e., price of hydrogen, capacity of the plants=</li> <li>Discuss on the results and naturation in the plants of the plants of</li></ul>					
<ul> <li>Discuss on the results and potentially provide an optimal solution for different boundary conditions.</li> </ul>					
Determine the thresholds for which decarbonisation solution is more economically attractive,     depending on size and nower output of station					
Expected outcome					
The Master Thesis will provide a detailed techno-economic evaluation of hydrogen-gas turbines and CCS-					
as turbines highlighting whether a hydrogen-fired GT or a CCS enabled GT would perform better					
economically, depending on power output of the site.					
Implementation of the activities					
Project execution					
Please describe the role and the involvement of the participating members. Estimate the required manhours.					
Master's student, Jean Beriot, will lead the completion of the project with support from the ETN CCS					
Taskforce for data acquisition.					
Project finances					
None.					
Meeting schedule and dissemination					
The ETN CCS Taskforce will investigate on dissemination opportunities, including – among others – ETN					
Conferences and any relevant external event.					
Deliverables &	Milestones (max. 1 p	er each d		Timing	luna 2025
	UNIONS	master i	nesis	riming	June 2025
Milestone 1	13 WIDSIEL 1116315	Titlo		Dato	October 2024
Completion of a	first draft of the Thesis		ion for review of t	the CCS Taskforo	
Milestone 2		Title			June 2025
Completion of fir	l al draft following CCS	Taskfor		Date	June 2020
Project timeline					
The Master Thesis is expected to be delivered by $\Omega^{2/2025}$					
The master thesis is expected to be delivered by $QZ/ZUZU$ .					