November 14th, 2023
Brussels, Belgium

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PUBLIC PERCEPTION AND BUSINESS MODELS JOINT EVENT

Organised by the Carbon Capture, Utilisation and Storage (CCUS) & Alternative Fuels Horizon 2020/ Horizon Europe CLUSTER projects

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Citizen Engagement and Concerns around CCUS

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Baseline

"Increase the societal understanding of CCS technologies, and how they can contribute to the development of a low-carbon society"

- *H2020 Project[1] ACCSESS – Provide access to cost-efficient, replicable, safe and flexible CCUS*
- *Public perception about CCUS – Benefits and concerns*
- *In order to achieve the project goals, it's necessary to know the actual stand on public perception about CCUS. The preparation of educational material is one of the main parts of the project*
- *Previous research: Mof4Air[2]*
  - *Generally positive perception*
  - *NIMBY position*
  - *Balanced knowledge across different countries*

[1] https://www.projectaccsess.eu/
[2] https://www.mof4air.eu/

Methodology

- *All target groups -> to obtain the general public's perception, which is our main goal group for the educational materials*
- *Tools: Citizen survey and social media analysis with opinion mining methods*
  - *Social media analysis (Twitter)*
  - *Data preprocessing and classification*
  - *AI*

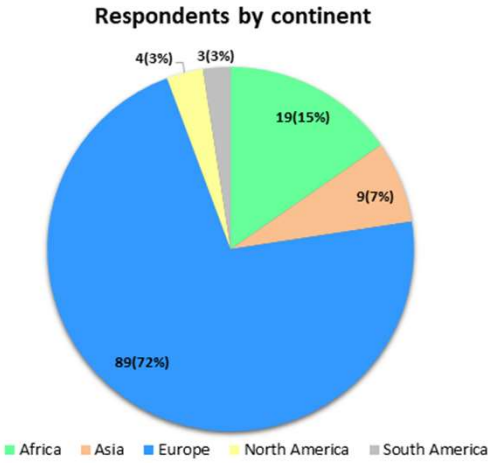

Figure 1: Survey respondents by continent

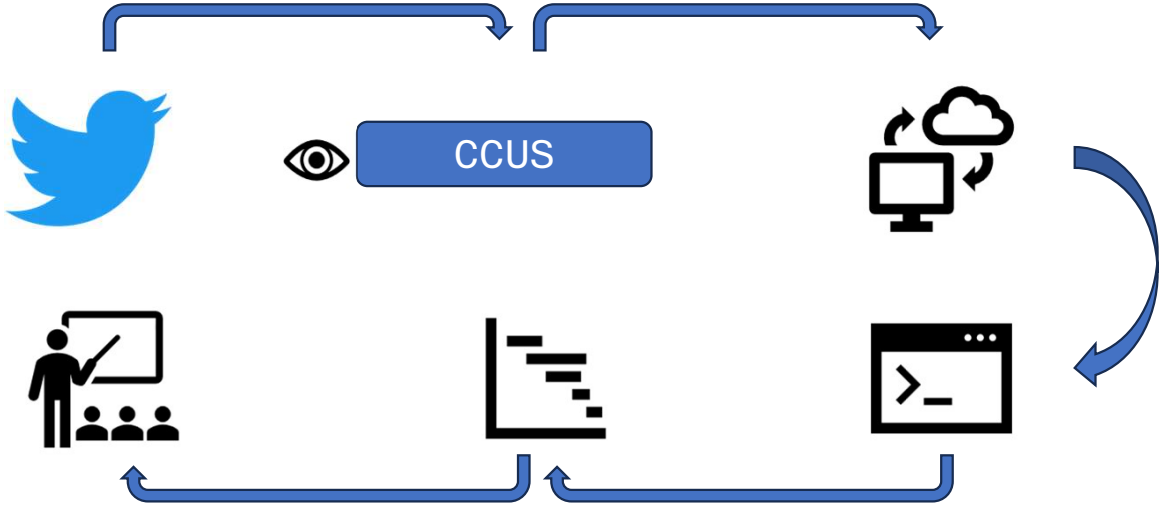

Figure 2: Social media analysis

Methodology

	A	B	C	D	E	F	G	H	I	J	K	L	M
1		Language	Tweet	Preprocessed	Benefit	Concern	Perception-F	Perception-C	Perception-E	Perception-B	Sentiment	Relatedness	Comment
2	0	da	,"How positiv	positive see g	None	None	None	None	None	None	Positive		
3	1	da	,Right decisic	right decisior	None	None	None	None	None	None	Positive		
4	2	da	,CCS and neg	cc negative e	None	None	None	None	None	None	Positive		
5	3	da	,"The CCUS p	ccus pool sup	None	Investment	None	None	None	None	Negative		
6	4	da	,"The stagger	staggering dk	None	Investment	None	None	None	None	Negative		
7	5	da	,"Carbon Cap	carbon captu	None	Other	None	None	Yes	None	Negative		
8	6	de	,"â€œWe ne	"need techno	Fossil energy	None	Yes	None	None	None	Positive		
9	7	de	,"Who needs	need mnemc	None	Increase cost	None	None	None	None	Negative		
10	8	de	,"@Timo089	easy carbon (	None	None	None	None	None	None	Negative		
11	9	de	,"@SimonZ8	according ins	Reducing env	None	None	None	None	None	Positive		
12	10	de	,@pkrohn1 @	bill gate ha m	None	Greenwashin	None	None	None	None	Negative		
13	11	de	,"@Nino_libe	revenge justi	Reducing env	None	Yes	None	None	None	Positive		
14	12	de	,"@JulianGre	long dont pro	None	Environment	None	No	None	None	Negative		
15	13	de	,"@NurderK	next year fou	None	Greenwashin	None	None	None	None	Negative		
16	14	de	,"@oezgeina	could easily c	Reducing env	None	Yes	None	None	None	Positive		
17	15	de	,"@VQuaschi	im speed lim	None	None	None	None	None	None	Positive		
18	16	de	,"@Michael4	look rather g	Preventing c.	None	Yes	None	None	None	Positive		
19	17	de	,"@rahmstor	technognosis	None	Other	None	None	None	None	Negative		
20	18	de	,How can CO	co2 removed	None	Environment	No	No	None	None	Negative		Greenwashing
21	19	de	,"@ArneEich	research nee	Reducing env	None	Yes	None	None	None	Positive		

Figure 3: Social media analysis classification environment

Summary

Sentiment towards CCUS (survey)
- 60% in favor
- 19% not in favor
- 21% no opinion

✓

Most and least chosen benefits of CCUS
- Reducing environmental impact of energy production (47%)
- Safeguarding jobs (20%)

Most and least chosen Concerns of CCUS
- Greenwashing (77%)
- Increased local traffic due to CO2 transportation (52%)

- **124 respondents from academia, business, NGOs and public administrations**
- **72% from Europe (40% from Germany)**

Sentiment towards CCUS (Social Media)
- 43% in favor
- 52% not in favor
- 5% no opinion

✗

Most and least chosen benefits of CCUS
- **Reducing climate change risks (75%)**
- **Safeguarding jobs (0,5%)**

Most and least chosen concerns of CCUS
- **Greenwashing (21%)**
- **Earthquake-related accidents (0,5%)**

- **3374 retrieved tweets (15% contains opinions)**
- **Worldwide search (49% in English, 27% in German)**

Most frequent groups of words (positive & negative tweets)

Emission-reduction, net-zero, play-important-role	False-solution, capture-scam, expensive-waste-time, capture-doesn't-work

Figure 4: Most frequent groups of words social media

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Thank You

For Your Attention

GET IN TOUCH

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