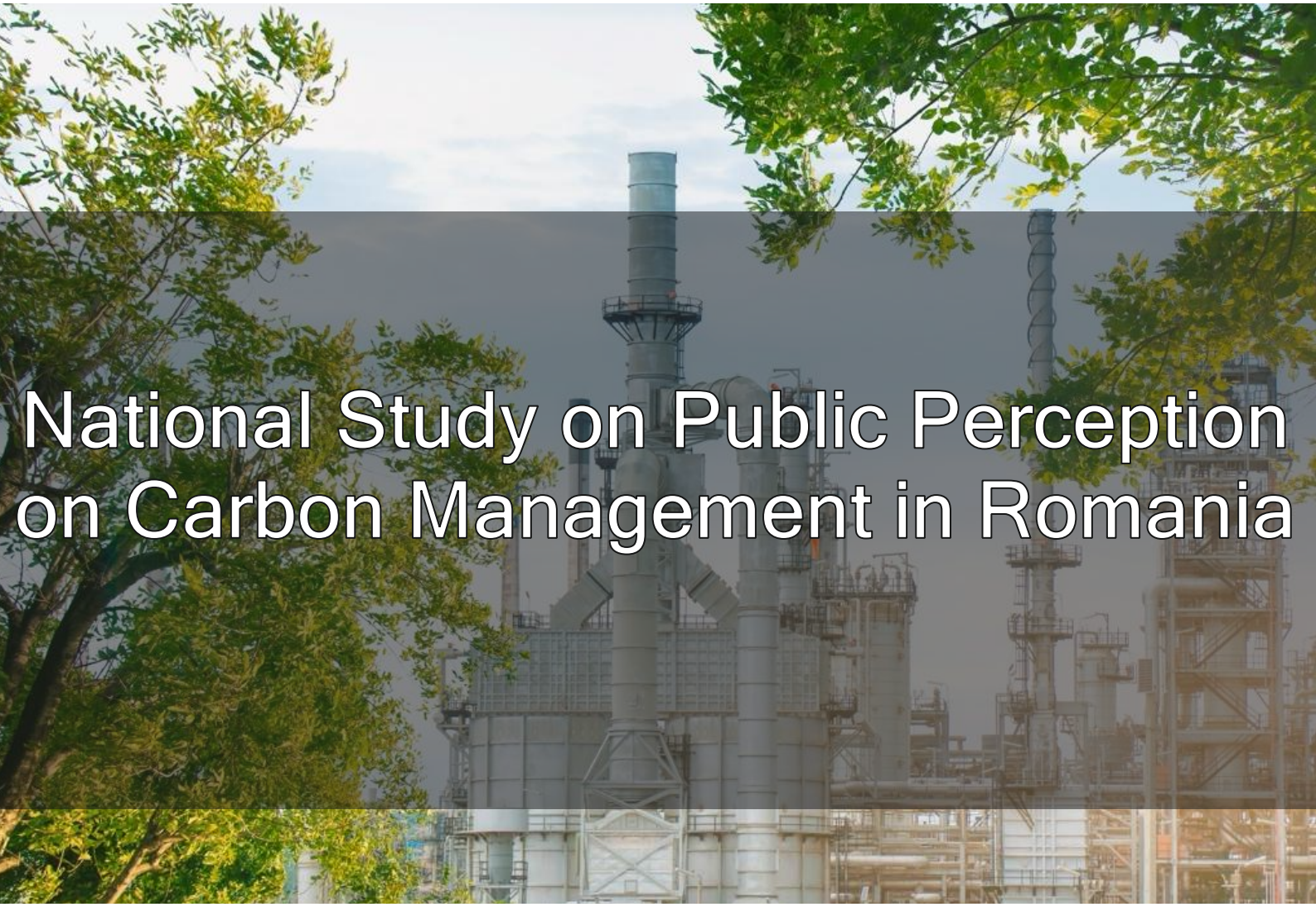
Green Horizon

Supported by:

Federal Ministry
for the Environment, Climate Action,
Nature Conservation and Nuclear Safety

on the basis of a decision
by the German Bundestag

European
Climate Initiative
EUKI



National Study on Public Perception on Carbon Management in Romania

February 17, 2026

This paper was written as part of the GreenHorizon CEE Project: Industrial Carbon Management for a Sustainable Future in CEE. The project is funded by the European Climate Initiative (EUKI) of the German Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety (BMUKN).

EPG

CSD
CENTER FOR THE STUDY OF DEMOCRACY

BELLONA EUROPA

WiseEuropa

Expert Partner
Fraunhofer

Publication Title

National Study on Public Perception on Carbon Management in Romania

Please cite as

Energy Policy Group (2026). National Study on Public Perception on Carbon Management in Romania. EPG Reports, January 2026

A study by

Energy Policy Group

office@epg-thinktank.org

Authors

Ioana Maria Vasiliu

Daria Sorescu

Sabina Ghiță

Disclaimer

Cover image

bombermoon on Shutterstock

Contents

List of Abbreviations and Acronyms

CCS	Carbon Capture and Storage
CCU	Carbon Capture and Utilisation
CCUS	Carbon Capture, Utilisation and Storage
CEE	Central and Eastern Europe
CM	Carbon Management
CO_2	Carbon dioxide
DAC	Direct Air Capture
EPG	Energy Policy Group
EU	European Union
EU ETS	European Union Emissions Trading System
Fig.	Figure
INS	National Institute of Statistics
NGO	Non-Governmental Organisation
NZIA	Net-Zero Industry Act

List of Tables

List of Figures

Sumar Executiv

Studiul analizează modul în care cetățenii, comunitățile locale, industria, societatea civilă și autoritățile publice din România înțeleg și evaluează tehnologiile de gestionare a carbonului, în special captarea și stocarea dioxidului de carbon (CCS). Aceasta este considerată printre soluțiile relevante pentru reducerea emisiilor în sectoarele industriale greu de decarbonizat. Analiza se bazează pe un sondaj național, focus-grupuri și interviuri cu actori relevanți, oferind o imagine integrată asupra nivelului de informare, a percepțiilor cetățenilor privind riscurile și beneficiile implementării acestor tehnologii dar și a condițiilor în care acestea ar putea fi acceptate social.

Rezultatele indică faptul că nivelul de cunoaștere în rândul populației este încă redus. Această situație reflectă mai degrabă un deficit de informare decât o opoziție. Participanții la focus grupuri au manifestat interes și disponibilitate de a înțelege subiectul atunci când au primit explicații clare, ceea ce sugerează că acceptarea poate fi influențată prin informare și comunicare timpurie.

În același timp, studiul arată că percepțiile sunt condiționate de nivelul de încredere în instituții, acest element fiind considerat la fel de important ca aspectele tehnice ale tehnologiei. Lipsa transparenței sau comunicarea insuficientă pot submina rapid acceptarea, indiferent de potențialele beneficii ale proiectelor.

De asemenea, acceptarea și fezabilitatea implementării sunt asociate cu existența unor roluri instituționale clar definite, a unor proceduri coerente și a unei coordonări eficiente între nivelul național și cel local. Autoritățile locale au subliniat în mod particular limitările legate de expertiza tehnică și de capacitatea administrativă, precum și nevoia de ghiduri practice și de clarificarea responsabilităților, aspecte care le pot influența direct capacitatea de a gestiona implicațiile sociale a potențialelor proiecte.

Gradul în care beneficiile sunt înțelese și percepute de public influențează în mod direct acceptarea. Pentru cetățeni și autoritățile locale, relevanța acestor tehnologii este evaluată în principal în funcție de impactul concret asupra locurilor de muncă, competitivității industriale și dezvoltării regionale, mai degrabă decât prin raportare la argumente generale privind schimbările climatice. În același timp, riscurile percepute sunt legate mai ales de distribuția costurilor, posibile creșteri ale prețurilor la energie, capacitatea instituțiilor de a gestiona proiectele și transparența procesului decizional.

Studiul arată, de asemenea, că industria, societatea civilă și mediul academic sunt în mare parte de acord asupra rolului acestor tehnologii în sectoarele industriale greu de decarbonizat, chiar dacă există în continuare diferențe privind modul de implementare, finanțarea și prioritățile de politici publice.

România se află într-o etapă timpurie, dar favorabilă, în care percepția publică asupra captării și stocării dioxidului de carbon este încă în formare. Nivelul de acceptare depinde în mare măsură de calitatea guvernanței, de resursele și organizarea administrativă și de modul în care instituțiile comunică, se coordonează și demonstrează că proiectele sunt gestionate transparent și în beneficiul economiei și al comunităților.

Executive Summary

This study analyses how citizens, local communities, industry, civil society, and public authorities in Romania understand and evaluate carbon management technologies, in particular carbon capture and storage (CCS), considered among the relevant solutions for reducing emissions in hard-to-abate industrial sectors.

The analysis is based on a national survey, focus groups, and interviews with relevant stakeholders. These methods provide an integrated picture of public awareness. They also show how citizens perceive the risks and benefits, and under what conditions these technologies could gain social acceptance.

The results indicate that the level of public knowledge remains low. This situation reflects an information gap rather than opposition. Focus group participants showed interest and a willingness to understand the topic when clear explanations were provided, suggesting that acceptance can be influenced through early information provision and communication.

At the same time, the study shows that perceptions are shaped by the level of trust in institutions, which is considered as important as the technical aspects of the technology itself. A lack of transparency or insufficient communication can quickly undermine acceptance, regardless of the potential benefits of projects.

Acceptance and implementation feasibility are also associated with clearly defined institutional roles, coherent procedures, and effective coordination between national and local levels. Local authorities particularly highlighted limitations related to technical expertise and administrative capacity, as well as the need for practical guidance and clearer allocation of responsibilities, factors that may directly affect their ability to manage the social dimension of potential projects.

The degree to which benefits are understood and perceived by the public directly influences acceptance. For citizens and local authorities, the relevance of these technologies is assessed primarily in terms of their concrete impact on jobs, industrial competitiveness, and regional development, rather than through general arguments related to climate change. At the same time, perceived risks are mainly linked to the distribution of costs, possible increases in energy prices, the ability of institutions to manage projects, and the transparency of decision-making processes.

The study also shows that industry, civil society, and academia generally agree that these technologies are necessary for hard-to-abate industrial sectors. However, they differ in their views on how they should be implemented, how they should be financed, and what policy priorities should guide their development.

Overall, the findings indicate that Romania is at an early but favourable stage, in which public perceptions are still forming. The level of acceptance depends on the quality of governance, the availability and organisation of administrative resources, and the way institutions communicate, coordinate, and demonstrate that projects are managed transparently and in the interest of the economy and local communities.

1. Introduction

The aim of the study is to assess public awareness, attitudes, and expectations toward Carbon Management (CM) in Romania. To complement the regulatory and institutional insights identified in the Capacity Gaps Analysis[i], the study integrates a public perception component using a combination of qualitative and quantitative methods. This approach captures the perspectives of citizens, local communities, public authorities, and industrial actors.

The analysis draws on both quantitative and qualitative methods:

- A national survey was carried out to assess broader trends in public awareness, trust in institutions, and willingness to support CM projects.
- Focus group discussions were organised in Târgu Mureș (the Mureș Just Transition region) with representatives of local authorities and citizens to explore knowledge levels, attitudes, and expectations regarding CM.
- Semi-structured interviews with civil society, academia, and industry representatives were conducted to capture the perspectives and perceived barriers to CM deployment.

- The findings reveal a complex but encouraging landscape. Public awareness of CM remains very low beyond industrial stakeholders; however, participants across all research methods showed a strong willingness to learn once information was provided. Public attitudes are still forming, and the combination of limited prior knowledge with high curiosity points to an information gap rather than outright rejection.

2. Contextual Understanding

Public perception refers to people's knowledge, attitudes, and beliefs about CM. *Social acceptance* describes the degree to which different groups (citizens, local communities, industry, policymakers, and civil society) are willing to tolerate, support, or oppose CM in practice. Both concepts are important for understanding how CM can be introduced and expanded in Romania, since acceptance depends on people's access to information, their level of trust, and their sense of fairness.

European research[ii] shows that public awareness of CM technologies remains generally low, and attitudes are often not yet fully developed. Earlier studies[iii] highlighted public hesitation toward carbon storage, while more recent work[iv] finds attitudes that are neutral or cautiously positive, depending on how risks, benefits, and fairness are perceived.

In addition, available literature[v] indicates that, in Romania, public awareness remains very low, and that communication on the topic has so far reached mainly expert and industrial circles. Public debates continue to focus on issues that are more immediately visible to citizens: energy prices, coal phase-out and air pollution, rather than on CM.

However, mass media could play an important role in shaping attitudes. Until recently, coverage of CCS in Romania was limited and often framed in alarmist or sensationalist terms, for example presenting CO_2 storage as a potential threat to life or suggesting that Romanians were being used as "test subjects" for Europe[vi]. The case of Botești (Argeș county) illustrates this dynamic: in 2023, residents opposed a proposed storage project by OMV Petrom, citing lack of information and safety concerns. Media reporting amplified these fears through dramatic framing[vii], and the incident has since become a key reference point in national CCS discussions.

In 2024-2025, media narratives began to shift. Although still relatively scarce, reporting became more neutral and informational, focusing on concrete developments such as the launch of the ConsenCUS demonstrator at OMV Petrom's Petrobrazi refinery[viii] or the EU Innovation Fund-supported CarbonHub CPT-01 project[ix]. The adoption of the Net-Zero Industry Act (NZIA) in 2024 also triggered several articles, some of which reflected misunderstandings regarding Romania's storage obligations, leading to a few more critical commentaries[x]. Other pieces covered the subsequent legal actions initiated by oil and gas companies against the European Commission, generally in a factual tone.[xi]

Local media frequently echo national news or official press releases rather than providing independent analysis. Reporting tends to appear only when local events or announcements occur, which limits both continuity and depth. Even so, there are exceptions that have offered more substantive coverage, including reports on innovative capture technologies[xii] or international best practices[xiii].

3. Methods

This chapter outlines the methodological approach used to generate the evidence presented in the report, describing how data were collected and analysed across the different components of the study. Information on data documentation, processing, and analyses is presented in an aggregated manner below.

3.1. Survey

The survey examined how Romanian citizens understand and evaluate CM technologies. It was conducted online by a specialised research company, using a questionnaire developed within the project consortium to align with the study's analytical objectives. The questionnaire combined socio-demographic items with questions assessing attitudes toward CM technologies and included quality-control measures to ensure data reliability.

In this regard, Table 1 outlines the main components of the national representative survey, indicating how each section contributed to capturing respondents' background and the attitudinal dimensions shaping acceptance, trust and perceived fairness of CM technologies. Different question formats and scales were used to generate comparable, reliable data and to enable detailed subgroup analysis.

Table 1: *Structure and Content of the National Representative Survey on CM*

Survey component	Purpose	Example Questions	Response format/Answer Options
Demographics	Respondent characteristics needed for sample representativeness and subgroup analysis	"What is your age?"; "What is the last school cycle you graduated?"; "How would you describe the current income of your household?"	Open numeric entry; single choice categorical levels (e.g. „education level" 6 categories / „income level" 4 categories]
Trust and legitimacy (Justice, Trust in actors)	Assess level of concern about climate change, which is a baseline predictor of acceptance of mitigation technologies Measure perceived fairness of potential implementation in Romania: distribution of costs/benefits, clarity of decision-making, recognition of affected groups Evaluate trust toward key institutions involved in carbon management (government, industry, NGOs, scientists).	"Do you consider the distribution of costs and benefits of CM to be fair?" "How much confidence do you have in the following actors to make good decisions on carbon management?" "Carbon management helps prevent climate change"	5-point Likert scale (*Completely disagree -> Completely agree*) + *I cannot estimate*.
Acceptance & Technology perception	Assesses the acceptability of CM in general and specific technologies (CCS/CCU/DAC). Includes local-siting scenarios to understand spatial acceptance ("near me").	"How acceptable do you consider the development of CM in Romania?" "How acceptable do you consider the	5-point Likert scale (*Completely unacceptable -> Completely acceptable*) + *I cannot estimate*

Survey component	Purpose	Example Questions	Response format/Answer Options
		development of CCS in Romania?" "How do you rate carbon management as an option?" "How acceptable do you consider CO_2 storage near you?" "To what extent do you consider the following options more suitable than carbon management?"	Includes attention checks and randomisation of rows as well as 0 -> 10 evaluation scale (0 = very poor, 10 = excellent)

3.2. Focus Groups

This section outlines how the two focus groups were organised and carried out, describing the steps taken from recruitment to implementation and the rationale behind key methodological choices. The research design relied on two complementary focus groups, one bringing together eight local citizens and the other involving nine representatives of local authorities from the County Council.

3.2.1. Recruitment Process

To define the focus group approach, a review was conducted across all Just Transition regions and counties where CCUS technologies could realistically be developed. This assessment helped identify locations where community perspectives would be particularly relevant for the study. Among the regions reviewed, Mureș emerged as a suitable location due to its strong industrial profile, particularly in the chemical sector with the major industrial platform Azomureș[xiv], its relevance within the Just Transition process, and the potential for implementing CCS as a decarbonisation solution to reduce emissions from production processes while maintaining industrial activity. In addition, Mureș County Council was among the first institutions to respond positively to the outreach, which facilitated coordination and enabled the timely organisation of the focus groups. Moreover, the collaboration between Mureș County Council and Azomureș provided both an institutional and an industrial perspective directly linked to potential CM deployment.

The recruitment process for the citizens' focus group was structured to meet the study's methodological requirements and to ensure a heterogeneous mix of participants. Selection criteria included gender balance; a mix of age categories; residence in proximity to the Azomureș industrial platform; previous or current employment within the industrial area; and varying levels of awareness and attitudes regarding climate change. These criteria ensured a diverse set of perspectives relevant to assessing public perceptions of CM. From a research standpoint, recruiting a heterogeneous group was essential for capturing the range of local experiences and socio-economic backgrounds present in the community. This diversity enabled a more nuanced understanding of how CM technologies are interpreted in areas closely linked to industrial activity and revealed variations in trust, perceived benefits and perceived risks across different demographic and occupational groups. Access to potential participants was obtained through a local contact, familiar with the social and industrial context of the area. Building on this entry point, a snowball recruitment process was employed to reach additional individuals willing to take part in the discussion. This approach enabled timely recruitment and facilitated access to participants with relevant local experience and exposure to the industrial environment surrounding the Azomureș platform.

3.2.2. Structure of the Focus Groups

Both focus groups followed a similar structure. The sessions began with an open discussion designed to assess participants' baseline knowledge of the topic. This was followed by a short explanatory video and an accompanying presentation intended to establish a common understanding of CM technologies across participants.

Once this shared foundation was established, the discussion moved to a structured set of questions derived from the survey instrument, selected and refined to stimulate deliberation rather than simple factual responses. The questions were grouped into several thematic areas:

- **Initial knowledge check:** assessing participants' understanding and immediate reactions to CM technologies.
- **General attitudes and emotional responses:** examining perceptions, concerns and broader sentiments toward CM.
- **Local context in Mureș:** exploring how proximity to industrial activity shapes risk evaluations and views on regional plans.
- **Trust and communication:** identifying preferred communication channels, trusted information sources, and expectations for public involvement in decision-making.
- **Final reflections:** providing space for additional comments, questions or perspectives that had not emerged earlier in the discussion.

3.3. Interviews

3.3.1. Interview Guidelines

The semi-structured interviews were designed to capture national and CEE-specific nuances in stakeholder perceptions of CM. The interviews targeted key actors from both

the supply and demand sides of CM technologies, as well as members of national civil society coalitions. The interview guideline used covered several thematic areas: the stakeholder's background and role in CM, general perceptions of CM technologies, views on justice, costs, and the distribution of benefits and burdens, governance and regulatory challenges, and expectations regarding public awareness and acceptance. At the end of the interviews, the stakeholders were invited to raise any additional topics they consider important, or to emphasise issues they believe could benefit from more attention. The structure helped ensure systematic coverage of core themes while enabling deeper exploration of issues that emerge organically during the conversation.

3.3.2. Recruitment Process for Interviews

The recruitment process drew on the existing EPG stakeholder database, which included relevant contacts across sectors. Potential participants were approached primarily via email, supplemented by follow-up messages and telephone calls where needed to confirm availability. Based on the responses received, an interview calendar was developed to accommodate participants' schedules. The full recruitment process, from initial identification of stakeholders to the completion of interview arrangements, extended over approximately two months.

In total, twelve supply-side stakeholders were identified and contacted, covering several key categories relevant to future CM deployment. These included:

- Potential CO_2 transport operators, primarily oil and gas companies with existing pipeline or network infrastructure that could support future CO_2 transport activities;
- Potential CO_2 storage operators, specifically oil and gas companies identified in their capacity as entities holding obligations under the Net-Zero Industry Act (NZIA);
- Consultants and technical service providers, offering expertise in areas such as CM integration, automation and control, geological modelling, risk assessment or monitoring, which were identified based on explicit references to CM-related services on their websites;
- Engineering and design service companies, including firms with experience in energy or infrastructure projects and those listing CM relevant capabilities such as equipment supply, construction management, electrical installations, procurement or energy solutions.

A key limitation of this study is the restricted representation of the supply-side perspective. Recruitment of interview participants proved more challenging than anticipated, particularly on the supply side. Despite repeated attempts, only one supply-side stakeholder agreed to participate, and their role encompassed both supply- and demand-side activities. As a result, it was not possible to isolate a distinct and representative supply-side viewpoint. Consequently, the findings do not include a standalone supply-side analysis, which may limit the depth and balance of insights related specifically to supply-side dynamics. Future research could address this limitation by engaging a broader range of supply-side stakeholders to enable a more differentiated and comprehensive analysis.

Regarding the demand side, nine stakeholders were identified and contacted. They represented hard-to-abate sectors such as refineries, fertilisers, cement and lime, industries with a high need for CM solutions and limited alternatives for achieving deep emissions reductions. Overall, five industry stakeholders participated in the interviews: two from the cement sector, one from a refinery, and two from the chemical industry. Although demand-side recruitment was ultimately successful, securing participation required sustained follow-up throughout the process.

The final group of stakeholders constituted civil society stakeholders. These were grouped in four categories:

- Environmental NGOs engaged in climate and energy advocacy;
- Labour unions representing workers in industrial sectors likely to be affected by CM deployment;
- Business associations providing employers' and industry perspectives on decarbonisation pathways;
- Academic and research institutions contributing expertise on technological, environmental and socio-economic dimensions of CM.

Out of the nine stakeholders contacted, four ultimately participated: two representatives from environmental NGOs and two experts from the research and academic field.

Overall, most interviews (six) were conducted online, reflecting logistical constraints and participants' preferences. Two interviews were carried out in person, as requested by the interviewees, and one stakeholder submitted the answers in written form.

3.4. Data Documentation, Processing and Analyses

Survey Data

After fieldwork was completed, the full dataset and the technical documentation (codebook, variable labels, structure) were submitted to the research team.

The data were:

- checked for completeness and consistency;
- validated through attention-control items;
- cleaned by removing incomplete or invalid responses;
- organised into structured tables for descriptive analysis.

Analysis was carried out in Excel, where the main variables were grouped according to questionnaire sections (awareness, trust, technology perceptions, acceptability). Frequency distributions, percentage comparisons, and simple graphs were developed to identify dominant trends and subgroup differences.

Focus Group Data

Both focus groups (citizens and County Council representatives) were audio-recorded with participants' consent and transcribed verbatim. Transcripts were documented and organised by group and date.

Data processing involved:

- close reading of transcripts;
- highlighting relevant statements;
- manual thematic coding aligned with the study's analytical dimensions: perceptions of CM, perceived risks and benefits, governance expectations, trust, and community impacts.

The analysis focused on how understanding evolved during the discussion, how participants framed risks and benefits, and where perspectives converged or diverged across the two groups.

Interview Data

- Most interviews were recorded (where consent was obtained) and transcribed. One stakeholder provided written input. All materials were organised by stakeholder category (industry, civil society, academia, supply side) and by date.
- The analysis followed a manual, text-based approach. Transcripts were read closely, key statements were highlighted, and recurring ideas were grouped into broader themes that emerged directly from the material. These themes reflected stakeholders' own framing of issues, such as their understanding of CM, perceived opportunities and challenges, institutional expectations, and concerns related to implementation.
- This inductive approach allowed the study to capture the diversity of perspectives across sectors and to reflect how different actors reason about CM in relation to their roles, responsibilities and constraints.

Integration of Findings

Although each dataset was analysed independently, the findings were systematically compared across the survey, focus groups, and interviews. This cross-source comparison acted as a form of triangulation, enhancing the robustness of results by identifying:

- strong areas of convergence (e.g., governance as the primary challenge);
- differences in risk perception (e.g., citizens emphasise affordability, NGOs emphasise climate integrity, industry emphasises competitiveness);
- gaps in awareness and communication needs.

This integrated approach ensured that the study captured not only isolated insights but also the broader patterns shaping public, community and stakeholder perspectives on CM in Romania.

4. Results

This section presents the main findings of the national research on public perceptions of CM in Romania. The analysis integrates evidence from the national survey, the focus group discussions and the stakeholder interviews, each of which captures a different aspect of how CM technologies are understood and evaluated. These components collectively address public awareness and attitudes, community-level perspectives, and institutional viewpoints.

4.1. Results of National Representative Survey

The *Green Horizon for CEE Public Perception Survey* provided a structured insight into how Romanian citizens understand and evaluate CM technologies.

4.1.1. Sample Description and Representativeness

The national survey was conducted on an initial sample of 1,000 respondents, covering both urban and rural areas across Romania. After data validation, excluding cases with unrealistically short completion times or failed attention checks, the final analytical sample included approximately 800 valid responses. The average completion time was 9 minutes, using a structured online questionnaire aligned with the project's common methodology.

The sample reflects the geographical, gender, and age distribution of the Romanian population:

- Gender balance: men and women are evenly represented.
- Age: the largest group is 45-54 years old, indicating strong engagement from middle-aged adults (see *Fig. 1)*
- Urban/rural breakdown: 41% rural, 22% small urban, 18% medium urban, and 9% Bucharest, ensuring nationwide coverage (see *Fig. 2)*
- Education and employment: most respondents are employed or self-employed; younger people (18-24) are underrepresented, indicating a need for targeted youth engagement.

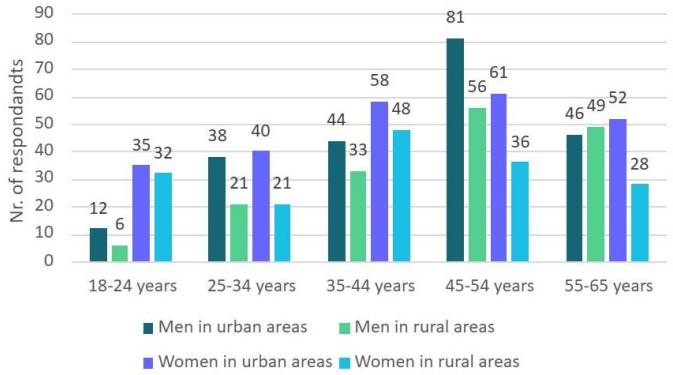


Figure 1: *Age and Gender of Respondents*

Source: EPG

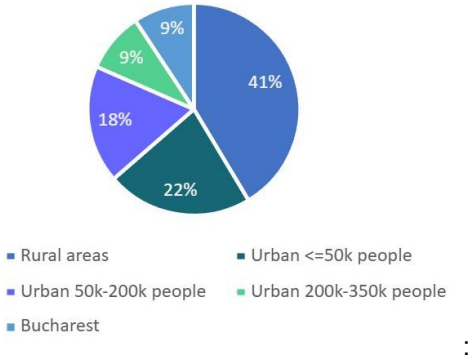


Figure 2: *Respondents by Area Type*

Source: EPG

According to data from the National Institute of Statistics[xv], Romania's adult population is composed of approximately 51.1% women and 48.9% men, with 43-45% of adults residing in rural areas. The GreenHorizon survey sample closely mirrors this demographic structure, ensuring proportional representation by gender and place of residence.

In terms of age, national demographic data show that about 31% of Romania's population is between 40 and 59 years old, 26% between 20 and 39, and roughly 20% aged 60 and above. The survey's largest respondent group falls within the 45-54 age range, which aligns with national patterns but slightly overrepresents middle-aged adults, a common feature of online data collection, as this group tends to have higher digital literacy and survey participation rates.

Education levels in the survey are somewhat higher than the national average. National data indicate that approximately 17% of adults hold a university degree, while the survey sample includes over 25% respondents with tertiary education. This is a typical bias for online surveys, where participation is correlated with internet access and education levels.

Regarding employment, INS data show that around 63% of Romania's working-age population is employed, compared to roughly 70% among survey respondents, again consistent with a slightly higher socioeconomic profile among online participants.

Overall, despite these minor deviations, the sample provides a broadly representative reflection of the Romanian adult population. The demographic alignment supports the validity of subsequent analyses on awareness, trust, and acceptance of CM technologies at the national level.

Table 2: *Comparison between national population structure (INS 2024)*[xvi] *and survey sample*

Indicator	National Population (INS 2024)	Survey Sample (Green Horizon, 2024)	Comment
Gender	51.1% female / 48.9% male	50% female / 50% male	Very close alignment
Place of residence	44% rural / 56% urban	41% rural / 59% urban	Balanced rural urban coverage
Age 18-24	9%	6%	Slightly underrepresented (typical for online surveys)
Age 25-39	22%	20%	Comparable
Age 40-59	31%	38%	Overrepresented; more active online
Age 60+	20%	18%	Slightly underrepresented
Tertiary education	17%	26%	Higher education more common among online respondents
Employment (working-age)	63% employed	70% employed/self-employed	Typical for middle-aged, active respondents
Unemployment/retired	37%	30%	Slightly lower, consistent with younger middle age bias

4.1.2. Main Findings

The findings reveal a complex but encouraging landscape. Public awareness of CM remains low, with only about 10% of respondents reporting familiarity with these technologies. At the same time, there is a clear willingness to learn and engage, with around 60% expressing interest in learning more (see Fig. 3). This pattern of low awareness but high curiosity does not signal rejection but rather an information gap, which could be bridged through transparent and accessible communication. Beyond awareness, the survey also highlights several key dimensions shaping attitudes, particularly concern about climate change, trust in institutions, perceptions of fairness, and levels of acceptance of specific CM technologies. These dimensions are discussed in the following subsections.

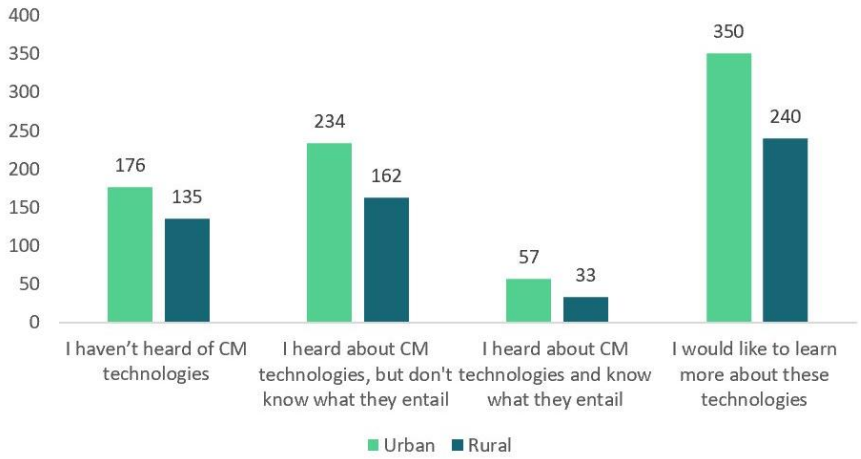


Figure 3: *Awareness and Interest of CM Technologies*
Source: EPG

The rural urban difference adds further nuance. Rural respondents tend to have less exposure to CM concepts but as indicated by our survey findings, they show a stronger emotional attachment to community and environment. When provided with clear and locally relevant information, their openness to CM technologies might thus slightly increase. This indicates that engagement strategies should connect CM to heritage protection, local benefits, and environmental stewardship, rather than framing it solely as a technical solution.

A strong motivational driver across all groups is the high level of concern about climate change. About 80% of respondents see climate change as a *serious* or *very serious* problem, showing that environmental awareness may be increasing (see *Fig. 4)*. However, this concern does not automatically translate into technological acceptance. Survey responses suggest that concerns related to safety, fairness, and environmental integrity are important in shaping attitudes, reinforcing the central role of trust.

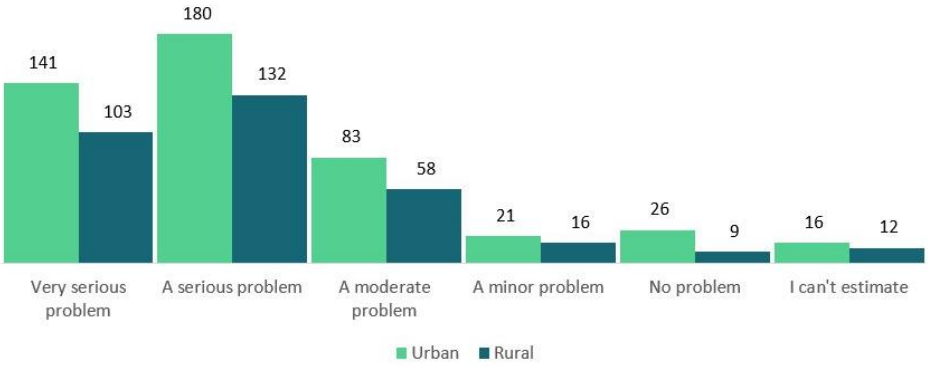


Figure 4: *Public Perception on Climate Change*
Source: EPG

- **Trust and Legitimacy**

Survey responses suggest that trust is a key dimension shaping attitudes toward CM. Overall, responses indicate a differentiated trust landscape across institutions (see Fig. 5). When considering strong and total trust combined, civil society and the European Commission register the highest levels of trust, followed closely by energy companies and scientists. At the same time, neutral responses represent a substantial share across all categories, suggesting that many respondents may still lack sufficient information to form a clear judgment regarding institutional trust. These findings suggest that both the content of a message and who communicates it may influence how it is received, particularly where trust is not yet firmly established. For future CM initiatives, independent and science-based communication may help address this prevailing neutrality, while perceptions of top-down or corporate-led approaches risk limiting broader public support.

Survey responses also indicate that perceptions of fairness are relevant for interpreting attitudes toward CM. Respondents expressed concern about how the costs and benefits of implementation would be distributed and about the transparency of decision-making processes. At the same time, a substantial share of neutral responses suggests that many respondents do not yet have sufficient information to form clear views on these aspects, reinforcing the finding that attitudes toward CM are still developing.

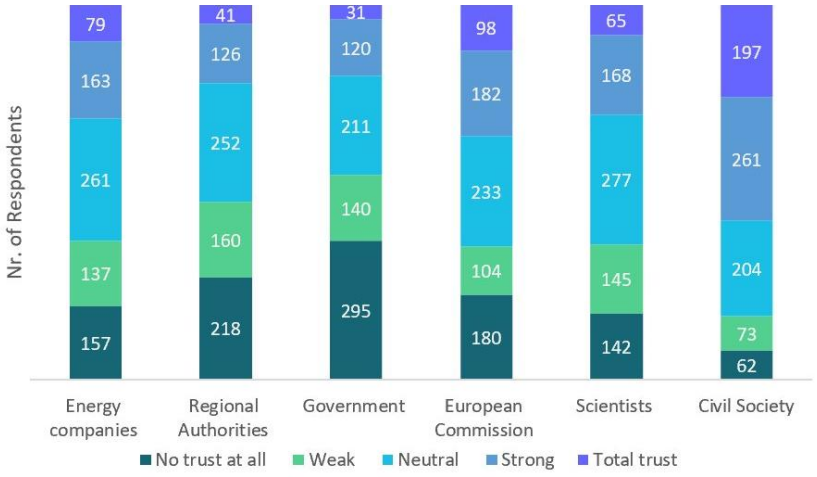


Figure 5: *Confidence Level in Making Good Decisions Regarding CM*
Source: EPG

- **Acceptance and Technology-Specific Perceptions**

Acceptance levels are moderate. Most respondents are neutral or partially accepting (see Fig. 6), while very few reject CM outright (fewer than 100 respondents per technology). This pattern points to a general “wait-and-see” attitude, suggesting that citizens remain open to CM, and that future evaluations of the technology could become more favourable if it is perceived as transparent, safe, and beneficial. Within this overall trend, acceptance differs across technologies. CCU shows the highest levels of partial and total acceptance among the three technologies, while CCS and DAC receive more neutral and negative responses

(see Fig. 6). This suggests lower public comfort with CCS and DAC, although the reasons behind these views cannot be determined from the acceptability data alone.

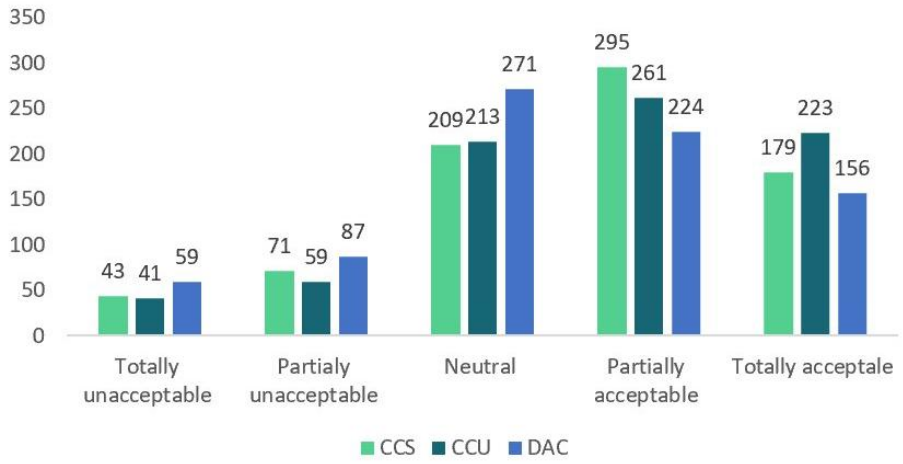


Figure 6: *Acceptability of CM Technologies*
Source: EPG

This pattern suggests that transparency, clear safety standards, and early communication may play an important role in shaping public acceptance.

Overall, the data portrays a population that is concerned about climate change, curious but cautious about CM, and highly sensitive to trust and proximity. Romania appears to be at an early yet promising stage of public engagement on CM: citizens are not opposed to innovation, but they require credible information, transparent governance, and trusted intermediaries, such as independent experts, universities, and civil society organisations, to move from awareness to acceptance.

4.2. Results of Focus Groups

Târgu Mureș (Mureș county) was selected as the case-study site given its established industrial character and its potential relevance for future CCS-related developments. To capture perceptions from both the community and local institutions, two focus groups were organised: one with citizens representing a range of socio-economic backgrounds and proximity to industrial activities, and another with County Council representatives. This structure enabled the exploration of how residents and authorities understand and assess CCS, highlighting differences in expectations, perceived risks and anticipated regional impacts.

4.2.1. Citizens' Focus Group

- **Awareness and Initial Understanding**

Participants entered the discussion with low to moderate awareness of CM. Only a minority had previously encountered the concept, mostly through media sources or workplace briefings. A clear shift occurred after the introductory video and facilitated explanations. Participants were able to articulate the CCS value chain: capture, transport, storage and described it as *technical*, *complex*, but *feasible*. What initially seemed "abstract" or "like science fiction" became more understandable as the discussion progressed.

- **Emerging Themes and Participant Dynamics**

A central theme that emerged early in the discussion was a significant confusion between CO_2 reuse (utilisation) and permanent geological storage. Most participants initially associated captured CO_2 with industrial reuse, such as carbonation in beverages, rather than with long-term underground storage. This conceptual ambiguity shaped their first reactions to CCS, which ranged from scepticism to mild curiosity. However, after the facilitator introduced visual explanations and broke down the process into its three core components: capture, transport, and storage, participants' understanding improved considerably.

Several participants explicitly described this shift in perception, illustrating how accessible explanations helped them develop clearer mental models of the technology. As one participant put it*, "At first it sounded like magic, but now it actually makes sense."* Another reflected, *"I didn't know there were steps (capture, transport, storage); it's clearer now."* These statements indicate that participants not only learned new information but also gained a clearer understanding of how the technology works and what its risks and benefits might be.

Agreement across the group formed quickly around the idea that CCS becomes far more intelligible when communicated in simple, non-technical language. Participants repeatedly emphasised the importance of clear, visual materials for understanding a technology they initially perceived as distant or abstract. The group also converged on the idea that accessible communication is essential for public acceptance: once the process was explained, participants felt more able to evaluate the technology on its merits rather than on assumptions.

However, differences persisted in participants' levels of confidence regarding the scale and feasibility of geological storage. Some remained cautious, questioning whether underground formations could safely and permanently accommodate large volumes of CO_2. Others expressed increased trust after the explanation, noting that geological storage seemed plausible and even "logical" once the underlying processes were described.

Overall, the discussion revealed a pattern of initial uncertainty shifting toward informed curiosity, with participants increasingly willing to engage with the concept of CCS once foundational misunderstandings were addressed. This dynamic suggests that perceptions

of CM are highly malleable and strongly shaped by the quality and accessibility of information provided to the public.

- **Emotions, Perceptions, and Acceptance**

Participants' emotional trajectory followed a clear progression: from initial caution to growing curiosity and, ultimately, conditional acceptance. Importantly, these emotional shifts were not driven primarily by the technical characteristics of CCS, but by perceptions of institutional capacity, transparency, and trustworthiness. Participants consistently distinguished between technology itself, which many found logical, or intriguing once explained, and the broader governance environment in which it would be implemented.

A recurring theme was the entrenched belief that decision-making processes in Romania are often opaque, top-down, and insufficiently accountable. This perception acts as a strong filter through which new technologies are interpreted. As one participant expressed, *"The technology doesn't scare me. It's the way things are done here that worries me."* Such statements reflect a broader pattern: scepticism toward institutions, rather than toward CCS as a technical solution.

Despite this, participants demonstrated a notable openness to CM when provided with clear, non-technical explanations. For several participants, good communication acted as a catalyst for acceptance: *"If someone explains it properly, I'm open to it."*

The discussions also revealed that citizens do not necessarily seek direct decision-making power in the implementation of CM. Instead, they expressed a strong desire for transparent, continuous, and comprehensible information. This distinction between "being informed" and *"being consulted*" appeared repeatedly. As one participant noted, *"It often feels like things happen no matter what we think,"* highlighting a sense of distance from institutional processes. However, participants emphasised that meaningful information, not formal consultation, would help reduce mistrust and create a sense of legitimacy around such projects.

Consensus emerged around several points:

- Clear communication and transparency significantly increase acceptance.
- Trust depends more on the perceived competence and integrity of implementers than on the technology itself.

At the same time, differences remained in how participants evaluated the broader implications of CM technologies. Some viewed it optimistically as an economic and technological opportunity for the region, while others remained cautious and emphasised the need for strong regulatory frameworks and firm guarantees on safety and governance.

- **Perceived Benefits and Risks**

As participants gained a clearer understanding of CCS, the technology was increasingly perceived as a potential contributor to local industrial modernisation and economic stability.

Discussions highlighted a pragmatic optimism: while initial reactions were marked by uncertainty, more detailed explanations enabled participants to identify concrete opportunities that CM could bring to Mureș county, especially in relation to its industrial profile and local labour market.

Perceived benefits clustered around three main themes: job creation, technological advancement and regional industrial positioning.

First, many participants associated CCS with local job creation, both directly through construction and operation, and indirectly through related services. Second, the technology was seen as a catalyst for technological advancement, potentially contributing to the region's industrial competitiveness. Third, there was a strong interest in the idea that Mureș could position itself as a regional hub for new industrial activity, particularly given its existing industrial base and strategic location. As one participant put it, *"If it's done properly and creates jobs, why not?"*

At the same time, participants identified several perceived risks, which focused less on the technology itself and more on the governance and economic implications of its implementation. Safety concerns were raised primarily in relation to poor oversight or weak institutional performance: "*I'm not afraid of the technology, I'm afraid of shortcuts.",* referring to situations where important procedures or standards might be bypassed to save time or costs. This illustrates a broader belief that risks arise from inadequate management rather than from geological storage itself.

An equally prominent theme concerned the economic dimension, particularly around cost distribution. Participants repeatedly asked about financial responsibility, signalling strong public interest in the fairness and transparency of CCS financing mechanisms. The question *"We need to know what it costs and who covers those costs"* surfaced multiple times, suggesting that acceptance is contingent on clear communication about long-term affordability and funding sources.

Areas of agreement centred on the idea that safety ultimately depends on competent operators and robust regulatory oversight. Participants generally accepted that, when implemented correctly and at sufficient depth, CM technologies can be safe and effective.

Disagreements, however, emerged regarding the scale and certainty of the storage potential. Some participants felt reassured once the geological process was explained, while others maintained a degree of caution, suggesting that additional evidence or long-term monitoring data would be necessary to build full confidence.

- **Community Impact and Local Development**

Participants assessed CM primarily through the lens of its concrete implications for the local community, rather than abstract environmental or national policy considerations. In a county marked by periods of industrial expansion followed by restructuring, CM was often interpreted as a potential lever for economic revitalisation, capable of generating new employment opportunities and strengthening the industrial base of Mureș.

A recurring theme throughout the discussion was the desire for tangible, community-level benefits. Participants were less focused on the technical aspects of the technology and more attentive to how CM projects might improve local livelihoods, through job creation, increased investment, or the development of new industrial capacities. As one participant noted, *"If it helps the community and doesn't harm health, people will accept it."* This highlights the conditional nature of acceptance: potential benefits must be accompanied by clear assurances of safety and responsible management.

A hypothetical scenario concerning CO_2 storage beneath privately owned land elicited strikingly pragmatic reactions. Most participants expressed little inherent concern about subsurface activity, often acknowledging limited awareness of what lies underground in general: *"Most of us don't know what's under our land anyway."* Others emphasised that appropriate compensation would mitigate opposition, framing acceptance in predominantly economic rather than emotional or symbolic terms. This suggests that local attitudes toward CCS are shaped by a practical cost-benefit approach, with fewer ideological objections than might be expected.

Areas of agreement centred on the crucial importance of transparency and direct community benefits. Participants stressed that projects must demonstrate visible local value: economic, social, or infrastructural, to gain durable support.

Disagreements emerged between those who prioritised economic opportunities above all else and those who placed stronger emphasis on environmental guarantees and long-term health assurances. While both groups were open to CM in principle, their conditions for acceptance diverged slightly: one looking for economic uplift, the other for robust safeguards.

- **Justice, Costs, and Governance**

Discussions around justice and governance revealed persistent concerns about how decisions are made, who bears the costs for CCS, and whether institutions in Romania have the capacity to manage complex technological projects. These concerns were not directed at the technology itself but at the broader governance ecosystem in which it would be deployed.

Participants consistently expressed low institutional trust, particularly toward national authorities, which they felt often lack coordination, transparency, or the expertise needed for large-scale strategic projects. Statements such as *"If the state is responsible, nothing will happen"* captured a recurrent sentiment: that administrative fragmentation and political volatility weaken the credibility of major investments.

Against this backdrop, participants tended to favour expert-led decision-making, ideally supported by structured oversight at national or even EU level. While they did not seek an active decision-making role, they emphasised the need for continuous, accessible information. As one participant put it, *"Experts should decide, but we should be informed."* This distinction between information (highly valued) and consultation (not strongly

demanded) is particularly important: citizens want transparency rather than symbolic involvement.

A major point of tension throughout the discussion was cost distribution. Participants returned to the question *"Who pays?"*, reflecting a deep concern that CM investments could translate into higher energy prices for households already under pressure. This sensitivity is rooted in lived experience: many participants described several years in which energy costs increased unpredictably, while public support schemes were perceived as insufficient or inconsistently applied.

In this context, fairness became the central lens through which CM was evaluated. Participants emphasised that any large-scale investment in new technologies must include clear, transparent assurances that the financial burden will not be shifted onto consumers, especially those in vulnerable or low-income households. The expectation is not necessarily that CM should be cost-free, but that costs should be proportionate to benefits and shared in a manner perceived as equitable.

These discussions also revealed a broader worry about long-term affordability, particularly in regions where heating costs already represent a significant share of household expenditures.

Participants agreed that transparent financing models, whether EU-funded, industry-funded, or blended, would be essential for building public acceptance. There was consensus that costs should be justified, predictable, and communicated upfront, and that households should not bear the risks of delayed or poorly managed projects.

Some participants viewed CCS as an inevitable step for industrial regions, arguing that such investments could generate sufficient economic benefits to offset the costs. Others remained more cautious, insisting on clear evidence that CCS would not worsen energy poverty or divert resources from other local development priorities.

- **Trust and Information Needs**

Discussions about trust revealed a clear hierarchy of preferred information sources. Universities, research institutions, and NGOs were viewed as the most credible actors, largely because they are perceived as independent and technically competent. By contrast, government institutions ranked significantly lower, reflecting a broader scepticism toward the state's ability to communicate clearly and manage complex projects. Traditional media and online platforms were seen as useful only when the source is clearly identifiable and reputable.

Participants stressed that well-designed public information campaigns are essential for any CM project to gain acceptance. They expect communication to be continuous, accessible, and adapted to different generations and levels of technical understanding. Importantly, the demand was not for consultation in the sense of co-decision, but for transparent, ongoing information that allows people to feel informed and respected.

Participants identified several preferred communication channels, ranging from TV documentary formats to local community events, social media, school-based activities, and even cultural events that combine entertainment with educational content.

- **Future Perspectives**

By the end of the session, participants viewed CM more as an opportunity than a risk, if implementation is responsible, well-governed, and genuinely beneficial for the community. The shift from uncertainty to cautious optimism was particularly visible: greater understanding led to greater acceptance.

Participants agreed that CM technologies could play an important role in Romania's industrial and environmental future, but their support remains conditional linked to transparent governance, clear communication about safety, and demonstrable community benefits. Many emphasised that public trust would depend far more on how institutions manage the process than on the technology itself. People do not expect to vote on technical decisions, but they do expect to be informed in ways that are clear, honest, and timely.

4.2.2. Local Authorities' Focus Group

The focus group with representatives of the Mureș County Council revealed an institutional perspective marked by cautious openness, limited prior knowledge of CCS, and strong awareness of the administrative constraints that shape decision-making at the local level. Unlike the citizens' focus group, where perceptions shifted emotionally from caution to interest, the institutional discussion evolved along lines of competence, governance, and procedural responsibility.

- **Understanding and First Reactions**

Before the session, the County Council had only encountered carbon management through the narrower lens of carbon capture and utilisation (CCU). CCS first became part of the discussion through the animated explanatory film presented by EPG. Participants knew that CO_2 could be reused in small amounts across certain industries, but permanent geological storage was not something they were familiar with. Once the mechanism was explained, they recognised immediately that reuse alone could not address industrial emissions at scale, acknowledging the role of storage as a complementary solution.

Their first reactions focused on potential risks and environmental integrity. Questions revolved around whether storage could affect underground ecosystems, and what environmental NGOs might say once such a project became public. The representatives expressed a desire to understand not only technical safety, but how the project might be perceived by the public, environmental NGOs, and the media.

CCS already appears in the Mureș county's Just Transition Strategy, included at Azomureș's request. The County Council explained that the strategy was drafted through an intensive collaboration between Azomureș, Romgaz, the Ministry of European Projects and Investments, and the Council itself. Although Azomureș initially began exploring

technical options, collaboration slowed as the topic became increasingly technical, beyond what the County Council feels institutionally equipped to follow or evaluate.

- **Institutional Attitudes, Emotions, and Acceptance**

Emotion, in an institutional context, is more subdued and structured than in citizen discussions. Council representatives spoke in terms of **r**esponsibility, compliance, and procedural neutrality. They emphasised repeatedly that the institution cannot reject a project if it meets formal criteria and respects the legislative framework. In this sense, acceptance is not an emotional threshold but a legal one.

At the same time, they expressed awareness of their own capacity limitations. The County Council does not have geological or technical experts who could meaningfully interpret specialised documents. If developers submit a CCS project, the Council can verify procedural compliance, but cannot independently assess complex claims about subsurface behaviour, monitoring, or engineering performance.

Their biggest concern was not the technology itself, but the communication burden. If Mureș county would be mentioned in the potential future national CM strategy, they expect to receive questions from citizens, NGOs, and the media, questions they may not have the expertise to answer. They spoke openly about the risk of becoming the “face” of a project without the knowledge to defend or explain it.

- **Benefits, Risks, and the Role of Perception**

Once CCS was explained, representatives agreed that geological storage presents very low intrinsic risks. Their primary technical concern centred on the transport stage: CO_2 pipelines require specific materials and corrosion-resistant infrastructure. Even so, they acknowledged that these risks are manageable.

What they considered far more significant was the risk of public misunderstanding. Drawing on past experiences in waste management, they noted that project outcomes often depended on how well authorities communicated with local communities. Where benefits were explained clearly and early, projects progressed; where communication was weak, rumours spread, leading to distrust and opposition.

The Council also noted that local environmental NGOs are not yet engaged in CM-related discussions but could become decisive actors. Although public institutions often navigate these relationships cautiously, they acknowledged that informed NGO support could be crucial for public acceptance.

- **Competitiveness, Industry, and Institutional Fragmentation**

Discussions about the economic dimension revealed a nuanced picture. Representatives understand CCS as part of a broader industrial transformation but stressed that their role is strictly administrative. They cannot promote or support private investment outside the legal framework, nor can they initiate public awareness campaigns unless formally mandated.

The idea of involving universities to improve institutional understanding was welcomed in principle, but representatives explained why it may work poorly in practice. The County Council is large and fragmented; a university workshop delivered to one department would not necessarily influence the procedures of another. For example, the urban planning department evaluates projects strictly on legal compliance, not on background knowledge or broader strategic goals.

They also provided a concrete example to illustrate these complexities: the case of the former Târnăveni chemical factory, where a promising decarbonisation project under the Just Transition Programme was ultimately blocked due to the "polluter pays" principle. Even though the project was technically and economically sound, EU funds could not be used until legacy contamination costs were resolved. The story exemplified how administrative structure can override technical opportunity, and how rigid rules may prevent innovative projects from advancing.

- **Governance, Fairness, and Structural Constraints**

From a governance perspective, the Council stressed that clear institutional roles and national-level leadership are essential. Local authorities lack specialised staff and operate within narrow legal boundaries. They cannot take initiative beyond what the law prescribes. Strategies exist, but without detailed procedural guidance, they often remain rhetorical documents rather than practical tools.

Cost distribution was discussed less in terms of household impacts, unlike in the citizens' group, and more in terms of administrative capacity. Representatives worry about the institutional burden of complex approval chains, the lack of specialists, and the possibility of overwhelming an already stretched administrative system.

- **Trust, Stakeholders, and Communication Needs**

Trust patterns differ significantly from those observed among citizens. While citizens placed high trust in universities and NGOs, the County Council noted that NGOs sometimes oppose projects without fully understanding the technology. Even so, they acknowledged that NGO support could be decisive for public acceptance.

They also stressed that training a single department would not transform the institution's overall ability to manage CCS-related decisions. The constraint is structural, not informational: legally defined procedures leave little room for discretionary or cross-departmental reasoning.

- **Future Perspectives**

Looking ahead, County Council representatives described the future of CCS implementation as dependent on national coordination, political will, and institutional clarity. They are open to collaboration with experts and academic partners, but only within clearly defined mandates and responsibilities.

Their conclusion was sober and pragmatic: CCS may indeed be an important opportunity for Mureș county, but for local authorities to support it effectively, they need practical guidance, clear processes, and stronger coordination with central institutions. Without these, CCS risks becoming another strategically important initiative that stalls due to systemic fragmentation.

They emphasised that strategies must be translated into actionable, operational tools, and that governance capacity, not technology, will determine whether CCS projects can move forward.

4.2.3. Comparative Analysis

Both focus groups show that CCS is not rejected, but its acceptance is conditional and depends far less on the technology itself and far more on trust, governance clarity, and public communication. Citizens are open but sceptical of institutions; the County Council is structurally cautious, constrained by legal and administrative capacity. Together, the discussions reveal a region willing to support CCS, if and only if implementation is transparent, technically sound, institutionally coordinated, and accompanied by clear, targeted communication at both community and administrative levels.

Table 3: *Comparative Table – Citizens vs. County Council*

Dimension	*Citizens (Focus Group 1)*	*County Council (Focus Group 2)*	*Combined Narrative Insight*
Initial Awareness of CCS	Low to moderate. Only a few participants had prior exposure; confusion between CO_2 reuse and permanent storage.	Very limited. Knew only about CCU; CCS introduced for the first time during the session.	Both groups lacked prior exposure; visual explanation significantly improved understanding. CCS is not yet present in public discourse or institutional routines.
Immediate Reactions	Curiosity, surprise, and interest once the process became clear.	Concern about risks, institutional responsibilities, and NGO reactions.	Citizens reacted emotionally; authorities reacted administratively.
Emotional Trajectory	Caution → Curiosity → Conditional Acceptance.	Neutral → Cautious Responsibility → Procedural Acceptance.	Citizens move emotionally; institutions move procedurally.
Main Concerns	Safety, costs, trust in institutions, transparency.	Governance, administrative capacity, legal responsibilities, and public reactions.	Citizens worry about personal impact; authorities worry about institutional feasibility.

Dimension	Citizens (Focus Group 1)	County Council (Focus Group 2)	Combined Narrative Insight
Perceived Risks	Mainly improper implementation, governance failures.	Public reactions, administrative burden, infrastructure risks (pipeline corrosion), NGO opposition.	Both accept that geological storage has low risk; both see governance as the real risk.
Perceived Benefits	Jobs, investment, local modernization, potential "regional hub."	Economic development possible but dependent on clear procedures and political will.	Citizens are more optimistic about benefits; authorities are more conditional and institutional.
Trust Landscape	Highest trust in universities, researchers, NGOs. Low trust in central/local government.	Trust cautious toward NGOs; dependent on technical validation; institutional relationships complex.	Both groups trust technical expertise more than political sources, but for different reasons.
Information Needs	Desire for clear, accessible, and continuous communication.	Need formal, procedural guidance; training insufficient without institutional mandate.	Citizens want understanding; authorities want clarity in governance.
Preferred Information Channels	TV documentaries, community meetings, social media, schools, and cultural events.	Structured communication led by central authorities or investors; institutional briefings.	Citizens want broad public engagement; authorities want top-down structured messaging.
View on Public Participation	Want to be informed, not to make technical decisions.	Believe consultation must be done by central institutions or investors, not by the Council alone.	Both agree that public acceptance depends on good communication, not on formal decision-making roles.
Governance Perspective	Low confidence in governmental ability to implement safely and transparently.	Governance challenges are seen as major barriers: limited staff, rigid procedures, and unclear mandates.	Citizens see governance's failures as a threat; authorities experience these failures day-to-day.
Equity & Costs	Concern that CM costs might increase energy prices or burden households.	Concern about administrative and legal constraints ("polluter pays," EU rules).	Citizens focus on affordability; authorities on compliance.

Dimension	Citizens (Focus Group 1)	County Council (Focus Group 2)	Combined Narrative Insight
Future Outlook on CM	Generally positive if safety and benefits are ensured.	Cautious, dependent on clear legislative framework, national coordination, and administrative capacity.	Both see CCS as promising, but success depends overwhelmingly on governance and communication.

4.3. Results of Interviews with Key Stakeholders

4.3.1. Results of Interviews with Industry

- **Awareness and General Assessment**

Among the 5 industrial stakeholders interviewed, there is a high level of familiarity with CM technologies. Respondents generally rate their knowledge between moderate and high, reflecting both practical engagement and awareness of technical aspects. Actors who prioritise CM as their main decarbonisation pathway tend to show the strongest familiarity, viewing these technologies as strategically essential rather than optional, as seen in statements like *"For certain emissions, there is no real alternative to carbon capture and storage. These solutions are no longer optional."*

A key theme that emerges is that the perceived role of CM varies by sector. Industry representatives consistently highlighted that certain emissions, particularly from process-intensive sectors, cannot be eliminated through energy efficiency or fuel switching alone. CM is viewed as a critical component to achieving climate neutrality, especially in industries where emissions arise from chemical or industrial processes rather than fuel combustion. However, energy-intensive sectors view CM as an important transitional solution, necessary until scalable alternatives are available at an industrial scale. In this context, CM serves as a bridge, mitigating emissions in the short to medium term while the technology landscape evolves. Stakeholders also stressed that CM should not be viewed in isolation. All respondents emphasised that CM should be seen as part of a broader mitigation mix and complement other mitigation strategies within the same objective, reflected in statements like *"All known decarbonisation alternatives complement each other and are suitable for different economic and social segments."*

- **Benefits and Risks**

Industry representatives see CM as essential not only for environmental protection but also for sustaining economic activity and competitiveness. As one respondent noted, *"carbon management initially arose from the need to protect the environment, but it has proven to also bring direct economic benefits."* For hard-to-abate industries, the respondents emphasised that CM allows them to maintain competitiveness, while complying with EU and national regulations. This shift, reflected in one statement *"any reduction is beneficial for industries that must pay for emissions"*, shows how implementing carbon management can

generate direct cost savings and support compliance with regulatory obligations, in the context of potential increases in EU ETS prices.

All respondents stressed that CM is not only a way to reduce emissions but also a strategic tool to protect the competitiveness of Romanian industries in the European market. The benefits were framed from two perspectives: maintaining hard-to-abate industries and existing jobs, while also enabling new opportunities. Several interviewees suggested that Romania could position itself as a regional hub for CO_2 storage, opening pathways for new industrial activity, research and innovation, specialised jobs, and increased contributions to local and national economies. However, only one industrial representative argued that *"additional local benefits are considered limited, as the projects' objective has a national and European dimension",* which could reflect a distinct approach where projects are seen as serving broader compliance and competitiveness goals rather than local development.

Despite the perceived advantages, all respondents acknowledged potential risks associated with the implementation of CM. Among them, the implementation is perceived as a complex process, as any other technology, with several key risks spanning financial, operational, technological and social dimensions. Financial risks were mentioned most frequently: projects require substantial upfront investment and cost-recovery mechanisms remain unclear. One respondent noted, *"Implementation depends on co-financing and de-risking mechanisms across the full CCUS chain; without them, investment is unrealistic for single operators"*, which underlines the perception that systemic support is essential for project viability.

Respondents also highlighted operational and technological uncertainties, often linked to limited experience and knowledge gaps. Social acceptance emerged as another significant risk. Respondents view social acceptance as inherently uncertain and potentially decisive for a project's successful implementation. Information campaigns targeting local communities and schools were suggested in order to increase understanding and support; two of the respondents have already conducted such campaigns across their region in collaboration with county councils, national authorities, teachers and civil servants.

Finally, respondents highlighted the risk of inaction as particularly severe. Delays or failure to implement CM would not only jeopardise Romania's ability to achieve net-zero targets, but also result in long-term additional costs, lost investment opportunities, and reduced industrial competitiveness:

- *"The risk of not implementing CM is higher than the financial risks of action."*
- *"Inaction will lead to higher costs and lost competitiveness."*
- *"If these technologies are not implemented, the socio-economic consequences would be negative."*

The consensus is that while the initial financial and operational barriers are considerable, the benefits of acting far outweigh the risks of doing nothing.

- **Strategic, Regulatory and Feasibility Landscape**

Respondents frame CM implementation as highly dependent on national coordination and regulatory clarity. All interviewees explicitly emphasised the importance of a national strategy, with one respondent stating that a strategy offers *"a clear direction: a medium- and long-term path of 10 years or more",* while another highlighting that *"without a strategy, we cannot have legislation, prepared industry or coordinated investments"*. This reflects a snowball effect: unclear strategy leads to unclear legislation, which then delays industry readiness and investment. The consensus highlights the importance of clarity across all actors. One respondent stressed that *"if you don't have legislation that allows or even requires you to develop technologies, (...) no one does anything,"* pointing to the perception that regulatory uncertainty remains a core barrier.

Respondents showed varying levels of confidence in the feasibility of CM implementation within the next 5-10 years. Ratings ranged from optimistic (as high as 9/10) to strongly sceptical (as low as 3/10), especially when considering their own sector. For example, one interviewee in the chemical sector argued that early implementation is *"almost impossible"* for their operations due to low emissions volumes and high associated costs, reflecting that feasibility is not uniform across sectors. In this context, the industry widely recognises that current national storage capacity is underdeveloped, and many expressed uncertainties about the reliability of existing geological assessments. As one interviewee explained, the most available studies are *"mostly theoretical"* and insufficient to guarantee accurate evaluations of storage potential.

Given the uncertainty around storage capacity and potential, NZIA obligations were raised as a common discussion point during all interviews. Some respondents view them as ambitious and potentially transformative, but others see them also as unevenly distributed. Some interviewees welcomed the obligations, mentioning that they *"accelerate CCUS development"* and could help Romania avoid missing funding opportunities. Others expressed explicit concerns that penalties linked to NZIA targets could be financially overwhelming, with one respondent warning that, at projected penalty levels, meeting the requirements *"would effectively bankrupt operators.*" Another point of contention is the perception that Romania's assigned storage quota does not reflect local market conditions but is seen by a few as "*somehow understandable"*, if the state is helping in this regard.

Despite the storage barriers, transport infrastructure is perceived as the major bottleneck in terms of feasibility. Some respondents stated that pipeline transport is the only realistic solution for large volumes, yet currently limited by unclear legislation, high pressures required and even concerns about CO_2 corrosiveness. One interviewee noted that constructing a pipeline to a suitable storage location *"would take too much time,"* concluding that they are dependent on other actors to make infrastructure possible and therefore viable.

- **Justice, Costs and Governance**

All respondents broadly agreed that the costs of implementing CM technologies should be shared, in a mixed financial model, reflecting the principle that the benefits extend beyond individual operators. Most responses stated that CM ultimately serves the broader society,

with one respondent specifically stating that *"since decarbonisation benefits are shared by society, society must also bear CM costs"*. Another respondent explained this dynamic more directly: *"Through product prices, taxes and levies, we all bear these costs: both companies and individuals."*

The perception of who pays versus who benefits follows a similar pattern. Respondents noted that although early adopters may gain short-term advantages, long-term benefits are collective *"for society as a whole."* At the same time, there is recognition that operators cannot shoulder the full burden, with one participant warning that "if an operator assumes the full costs, it will probably go bankrupt", while emphasising the need for a *"level playing field"* approach.

Perceptions regarding who should decide on CM projects reflect a nuanced balance between expertise and inclusiveness, where collaboration between stakeholders is the key to success. Respondents consistently described CM as a national-level undertaking, which requires coordinated decisions and actions by actors who are directly involved in implementation. However, stakeholders also recognise the need for some degree of participation from local communities, especially for legitimacy and transparency, but to an extent where the public decision-making capacity should be limited. One respondent articulated the dilemma clearly: *"Public opinion should be heard, but decisions must remain with experts."* Another argued for institutionalising participation through a neutral national commission including state representatives, operators and civil society, to ensure balanced oversight, while another clearly emphasised the need to involve civil society to counteract the mistrust among citizens.

- **Level of Trust**

Building on these views, trust emerges as a central point of discussion in terms of effective governance. Although respondents' confidence might seem uneven, all of them highlighted that coordinated decisions and complementary action are only viable if the actors involved are perceived as credible.

The low confidence in public authorities among all respondents, combined with the belief that institutions themselves often appear uncertain about CCS, raises concerns about whether communities will accept complex long-term projects. For this reason, many interviewees expressed higher trust in academia than in any other stakeholder, viewing it as the most credible source of technical knowledge. Civil society organisations were also seen as trustworthy actors that can help bridge the gap between experts and the public. However, some respondents noted that civil society may face limitations due to a lack of knowledge and education in these areas. Similarly, two interviewees did not mention a preference in terms of trust for any of the actors, just optimism that all actors will be willing to collaborate and make good decisions.

- **Future Perspectives**

Looking ahead, respondents summed up that short- to medium-term challenges will be dominated by financial and legislative constraints, with technical issues and public

acceptance also playing an important role. As one respondent noted, *"financial challenges will dominate due to the current economic situation, geopolitical instability, and high energy prices."* Others were more direct, emphasising that without firm political will, funding alone will not fix the problem. As one stakeholder said, "*The real problem is not the lack of money but the lack of a coherent vision and long-term commitment from authorities."*

On the technical side, some actors expressed readiness to advance their CCS-related activities, having already built installations designed for CO_2 capture or being able to utilise CO_2 into their production processes. Still, even the more advanced players stressed that bureaucracy and slow-moving legislation hold back momentum, with one saying that many funds *"exist only on paper."*

Despite this, interviewees repeatedly returned to the transformative potential of early steps and pilot projects, which are seen as preliminary moves toward wider socio-economic development and regional leadership. One participant remarked, "*Once the first steps are taken, and once operators, authorities and the country as a whole assume their obligations, progress will follow."* In this regard, some respondents emphasised that early adopters could contribute by sharing practical experience, technologies and lessons learned: *"If things start moving at the national level, (…) we would be willing to implement this technology",* indicating that early steps can set benchmarks for broader adoption.

While the future perspective reflects a balance between short-term obstacles and long-term opportunity, the underlying sentiment is clear: progress is possible, but only if Romania moves from intention to action; steadily, coherently and with the willingness to lead rather than react.

4.3.2. Results of Interviews with Civil Society

- **Awareness and General Assessment**

Within civil society, awareness of carbon management technologies varies between NGOs and academic experts. NGO interviewees generally reported a moderate level of familiarity – sufficient to follow public debates but limited in terms of technical detail. They indicated that while key concepts and acronyms were understood, the operational specifics of installations were less familiar. Their knowledge was largely shaped by observing policy and energy-sector developments rather than direct involvement with the technologies.

Academic experts interviewed described a markedly higher level of familiarity, grounded in long-standing research experience and fieldwork. From their perspective, carbon management is a technically mature and strategically necessary approach, embedded in long-term climate planning. As one interviewee noted, "The discussion is no longer about mitigation strategies, but about directly combating climate change."

These differences in expertise naturally shape their assessments. NGOs approach CM technologies with caution and conditional acceptance. They repeatedly stress that these technologies should be used only where necessary, particularly in hard-to-abate industries where no other alternatives are available, warning against their misuse. *"CCS should be a last resort,"* one NGO representative explained, adding that it must not become a justification for delaying real emission cuts. Another reinforced this concern of prolonging fossil fuel activity: *"If you inject CO_2 only to extract more hydrocarbons later, you don't even reach net zero."* From their perspective, public funding should prioritise renewables and efficiency, and any carbon management project must demonstrate clear climate value.

Academic experts, by contrast, frame carbon management as essential for Romania's way to climate neutrality. They highlight that even in 2050 "*there will still be sectors with positive emissions,"* which makes these technologies indispensable. Their reasoning goes beyond climate mitigation to include industrial competitiveness, national security and the importance of full lifecycle assessments, and *"not just the operational phase",* as one of them expressed.

- **Benefits and Risks**

In discussions about the benefits and risks of CM, differences emerged between NGO and academic perspectives. NGO participants tended to focus on precaution, governance, and potential risks, while academic experts drew more on practical experience and emphasised the role of CM within long-term energy and climate planning.

NGO representatives acknowledge that CM technologies can support decarbonisation where limited alternatives exist. As one noted, its main advantage lies in helping *"highly polluting industries where no other solutions currently exist,"* offering a temporary pathway to reduce emissions without shutting down essential industrial activity. But the emphasis from NGOs overwhelmingly falls on risks that span technical, environmental, economic and institutional.

Geological storage raises concerns, but beyond these technical uncertainties, NGOs worry mostly about governance and financial risks. One respondent warned against *"spending public money on companies that don't complete projects", which* reiterates the concern of misplacing priorities. The other pointed to the broader systemic risk of slowing down the energy transition, noting the possibility of *"maintaining the fossil fuel market under the pretext that emissions will be captured later."* Institutional capacity is viewed as the most complex vulnerability translated into a serious risk: *"Romania lacks the capacity to understand these technologies or to act if things go wrong."*

Academic perspectives, however, describe the balance differently. The benefits are viewed as substantial, necessary, and often irreplaceable. Researchers point to the environmental value of directly reducing emissions, but also to socio-economic and industrial gains. As one expert noted, carbon management can *"enable the continued operation of hard-to-abate sectors that are essential for regional employment,"* helping to prevent job losses among workers who struggle to reskill. Moreover, one of the academics emphasised some positive aspects about DAC as well, noting that although underdeveloped and underdiscussed in Romania, it *"brings an additional advantage: it can be implemented almost anywhere, without geographical constraints"*.

Academia also brings a nuanced understanding of cost and energy implications. One researcher emphasised that capture *"inevitably increases costs for consumers"* due to energy use yet sees this as an expected trade-off rather than a real barrier. The risk of inaction, as seen among industry representatives, seems larger than the risk of action:

- *"Without capture and storage technologies there is a real risk of relocations or shutdowns."*
- *"We are essentially discussing our social and economic security."*
- *"Large industries risk becoming uncompetitive due to rising carbon allowance prices."*

However, risks such as leakage are acknowledged but considered comparatively limited when projects follow established standards: *"The risks are manageable and lower than those associated with other widely used technologies."* Transparency and informed public engagement are seen as important parts of risk management rather than reasons to slow deployment.

- **Strategic, Regulatory and Feasibility Landscape**

Academia approaches feasibility through timelines, permitting frameworks and geological realities, while NGOs emphasise evaluation criteria and the conditions under which any project should be allowed to proceed.

Academic experts highlight a structured, realistic understanding of timelines and the need for a national CM strategy that should guide implementation. One researcher noted that for saline aquifers, *"site characterisation alone can take three or four years,"* making the five-year horizon *"far too short."* Even depleted fields would still require close to a decade to fully operationalise. In this view, EU storage obligations are seen as misaligned with Romania's current readiness: *"very ambitious given the technical and institutional capacity"*, as one expert said. The second respondent from academia takes a different angle, arguing that industry should step forward with confidence rather than resist regulatory direction.

NGOs, while not taking a specific position on regulatory arrangements, approach feasibility through a clear set of evaluation criteria. As one representative explained, assessments should start with a basic question: whether the technology genuinely reduces emissions and delivers tangible benefits for local communities. Climate and social impacts are considered the primary criteria, followed by economic feasibility. NGOs also emphasised that local environmental effects, such as impacts on land, biodiversity, or pipeline routes, should be assessed independently, rather than justified by overall climate benefits.

This perspective leads NGOs to apply strict conditions for support. One organisation stated that it would endorse only small-scale, demonstrative projects focused on learning and testing feasibility and financed exclusively through private sources. Larger projects, or initiatives relying heavily on public funding, were viewed as unacceptable, particularly if they risked reinforcing fossil fuel dependence or lacked meaningful public consultation.

- **Justice, Costs and Governance**

Both academia and NGOs converge on the importance of transparency, dialogue, and clear and fair allocation of responsibilities, but their emphasis differs.

Academic experts approach carbon management costs and governance from a structured, institutional perspective. They note that implementation costs will primarily fall on industrial operators, with public authorities contributing proportionally, reflecting a shared-responsibility model along the value chain. One expert explained, *"in developed countries, collaboration among stakeholders is much better structured,"* highlighting how Romania still struggles with coordination.

Academics also emphasise that communicating social benefits helps build public trust: *"the more people understand these advantages; the greater public acceptance will be."* Transparency is essential; when citizens are poorly informed, as in the CarbonHub case[1], trust suffers: *"specialists knew the project was taking shape, but citizens learned about it directly from the media."* In this regard, the same expert emphasised the importance of engaging media as well, so that the information is distributed evenly, correctly and broadly to the public. That is why *"projects must be explained in a clear, honest, and transparent way, otherwise unjustified opposition will arise".*

NGOs, on the other hand, focus on fairness and community involvement. They argue that if society bears costs, through taxes or higher prices, industries responsible for emissions should shoulder their fair share. These respondents also raised the discussion of their own advocacy strategies around public funds to support proven solutions and ensure that industrial emitters take responsibility for their own decarbonisation.

They point out that public participation in Romania is weak, with local authorities struggling to organise meaningful communication campaigns. As one respondent said, *"local representatives should be informed to engage in substantial dialogue with authorities and investors.*" In this regard, strengthening local NGOs, improving civic education and ensuring communities understand both risks and benefits were raised as essential approaches. Genuine acceptance depends on early, continuous engagement, clear language and transparent communication throughout a project's lifecycle, where *"the consultation process should begin at the earliest stages",* as one representative stated.

- **Level of Trust**

Trust in actors responsible for CM implementation varies widely between NGOs and academia, reflecting both experience and perceived capacity.

NGOs position themselves as highly attentive to public perception and governance gaps. Trust in the Romanian government is low, due to limited technical capacity, scarce resources and slow or reactive engagement:

[1] Carbon Hub CPT01 is a CCS project selected under the EU Innovation Fund, to be implemented at Holcim's cement plant in Câmpulung, Romania.

- *"Chronic lack of understanding and implementation capacity"*
- *"They cannot impose additional requirements or monitor implementation."*

Industry inspires moderate trust once rules are clear, though lobbying during legislation development remains a concern. Civil society is trusted in terms of willingness and intent, but its actual capacity is constrained by limited resources and structure: *"I trust the willingness… But I don't trust their actual power or capacity."* Trust in the EU is moderate but declining, influenced by industrial lobbying and pressures to weaken climate targets. Examples such as halted national projects highlight how political inertia can undermine effective implementation.

Academic experts emphasise, though in less detail than NGOs, the importance of institutions with strong technical and scientific grounding. One expert placed the highest trust in European institutions and the academic community, describing them as the most consistent and competent actors in carbon management. For other actors, academics did not provide clear numerical ratings or strong criticisms; instead, their comments leaned toward a generally positive, capability-based view, without the sharper distinctions made by NGOs.

- **Future Perspectives**

Academic experts share a pragmatic but optimistic view of Romania's future in carbon management. They agree that energy demand will continue to increase, driven by digitalisation, which makes long-term planning essential. As one expert put it, *"we need leaders who understand where the world is heading and can design a solid energy strategy that integrates carbon management."* They expressed that Romania needs policy continuity and political commitment, even under budgetary pressure. In their view, some industrial sectors, such as cement and lime, are still performing well, but they warn that *"it would be a pity for these industries to be penalised because of a lack of vision or innovation at national level."*

Despite governance challenges, academia maintains a cautiously positive outlook: with political will, stable funding and consistent engagement, operational CM projects within the next decade remain achievable.

NGOs bring a more critical but constructive view, calling for coherent action, early involvement, and strong emphasis on fairness and adaptation. Their position is that *"technology must achieve real net emissions reduction, not merely shift them or extend fossil fuel lifetimes."*

Their overall message is clear: CM must be embedded in a transparent, integrated governance framework.

4.3.3. Comparative Analysis

Rather than presenting a single, uniform narrative, the interviews pointed to areas of emerging alignment, ongoing uncertainty, and persistent information gaps. What emerges

is not a divided debate, but a layered one, in which industry stakeholders often emphasised practical constraints and competitiveness considerations; NGO participants tended to focus on climate integrity and socio-economic fairness; and academic interviewees generally drew on longer-term technical and system-level perspectives. The combined insights column synthesises these viewpoints, highlighting where alignment is strengthening, where perspectives diverge, and where further clarification or evidence will be essential for future initiatives.

Table 4: *Comparative Table – Industry vs. NGOs vs. Academia*

Dimension	Industry	NGOs	Academia	Combined Narrative Insight
Familiarity	Moderately high, practical and technical knowledge	Moderate, policy-level awareness	Very high, technical expertise	Expertise shapes perspective
Position on CM	Essential for process emissions-intensive industries and transitional technology for other hard-to-abate sectors; part of decarbonisation mix	Only where necessary; last resort; avoid fossil lock-in	Indispensable for climate neutrality	All agree CM is needed for hard-to-abate industries; differ in conditions and emphasis
Perceived Benefits	Preserving and creating jobs, competitiveness, compliance with EU rules, potential regional hub	Supports industries with no alternatives; temporary emissions reduction	Sustains essential sectors, jobs, long-term planning	Agreement on socio-economic & climate gains; NGOs focus on climate integrity, others on system-level gains
Perceived Risks	Financial, operational, social acceptance,	Governance, financial	Every technology can bring risks, but manageable if	All recognise risks; emphasis differs: finance (industry),

Dimension	Industry	NGOs	Academia	Combined Narrative Insight
	transport & storage infrastructure	misuse, fossil fuel lock-in	standards followed	governance (NGOs), planning (academia)
Strategy & Feasibility	National strategy critical; sector-dependent timelines	Small-scale pilots; strict criteria; private funding preferred	Long-term, structured approach; realistic timelines; national CM strategy	All agree clear strategy & capacity are essential; approaches differ (pragmatic vs precautionary)
Costs & Governance	Shared costs; society contributes as operators cannot pay alone; main barriers: lack of strategy and bureaucracy.	Polluters pay; request strict rules & full transparency	Shared responsibility; see technical aspects as feasible; call for clear governance and long-term planning	Fair cost distribution and transparency are necessary; Romania lacks clear strategy and regulatory certainty, making coordinated planning essential
Equity & Public Engagement	Need for early communication, support information efforts for successful deployment but consider decisions the role of experts	Strong community involvement; public must be involved early and consistently; equity is essential	High confidence in expert-led processes; transparent communication can improve acceptance	All recognise that without clear information and ongoing dialogue, public acceptance will not develop
Trust Landscape	Low in authorities; high in academia	Low in authorities; moderate in industry; high	High trust in EU & academia	Academia is the most trusted; authorities least; credible

Dimension	Industry	NGOs	Academia	Combined Narrative Insight
		trust on civil society, but cautious on capacity		intermediaries needed
Future Perspectives	Financial & legislative barriers will dominate; early steps transformative; readiness varies	Conditional acceptance; strict climate & governance criteria	Cautiously optimistic; success depends on political commitment & future strategic alignment	CM has long-term value; early action and governance crucial

5. Conclusion

The study shows that, in Romania, acceptance of Carbon Management (CM) depends less on the technologies themselves and more on institutional trust, fairness, and visible local benefits. These dynamics underpin all of the key takeaways outlined below, which summarise the central patterns emerging from public, community, and stakeholder perspectives.

5.1. Key Takeaways on Public Perception of Carbon Management in Romania

1. Public awareness is low, but willingness to engage is high

Across the survey and focus groups, most participants had little prior knowledge of CM technologies. However, once provided with clear explanations, citizens displayed strong curiosity and openness. This reflects an information gap, not resistance, which can be effectively addressed through transparent, accessible communication.

2. Trust and communication matter more than the technology itself

Building on these findings, trust emerges less as a fixed attribute of specific institutions and more as a dynamic outcome shaped by communication practices. Stakeholders repeatedly stressed that acceptance depends on the availability of clear, credible, and continuous information, rather than on one-off procedural consultations. In this context, gaps, delays, or inconsistencies in communication can quickly undermine trust, regardless of the actor involved.

3. Governance is the decisive factor in CM acceptance

Across all engagement streams, governance, not geology or engineering, was identified as the main challenge. Stakeholders highlighted the need for:

- clearly defined institutional roles,
- transparent procedures,
- accountability mechanisms, and
- effective coordination between national and local authorities.

Local authorities stressed limited in-house expertise and called for national guidance, structured processes and practical tools to manage CCS-related responsibilities.

4. Socio-economic benefits strongly shape acceptance

Citizens, authorities and industry agree that CM can support industrial competitiveness, preserve jobs, and attract new investment. Communities primarily evaluate CM through its tangible local impacts: employment, economic renewal, and regional development. Acceptance increases when benefits are visible and equitably distributed.

5. Perceived risks extend beyond technical safety

While technical safety concerns exist, stakeholders focused more on governance and fairness. The most prominent risks include:

- unfair distribution of costs,
- potential increases in household energy prices,
- fossil fuel lock-in,
- insufficient long-term monitoring, and
- limited institutional capacity to respond to failures.

6. Stakeholders converge on the need for coordinated action

Industry sees CM as essential for competitiveness and compliance; civil society stresses fairness and climate integrity; academia views CM as indispensable for achieving climate neutrality. Despite different priorities, all agree that successful deployment requires strengthened governance, long-term planning, and integrated communication.

7. Acceptance is conditional but achievable

Support for CM is possible if several core conditions are met:

- robust and transparent governance,
- early and meaningful engagement,
- credible communication through trusted intermediaries,
- fair and clearly defined cost-sharing mechanisms, and
- tangible, locally relevant socio-economic benefits.

Where these conditions are lacking, public trust and institutional legitimacy remain fragile. In practical terms, Romania's ability to move from potential to implementation in CM will depend not only on technical readiness, but also on whether governance, communication, and fairness considerations are addressed with the same level of attention as technical aspects such as storage and transport infrastructure.

5.2. Implications for Further Activities of the Project

These findings show that integration of citizen visions into policy design is essential. These findings will inform further project activities through a tailored approach that responds to public priorities. The approach will incorporate expert recommendations from industry, civil society, and academia, as well as community needs expressed by both the County Council and engaged citizens.

The table below synthesises the findings from all engagement activities carried out for this project: public survey (public acceptance), focus groups (community acceptance) and multi-stakeholder interviews (market acceptance) and translates them into practical directions for future activities. For each focus area, the table aligns the activity conducted, how it should be adapted based on cross-cutting insights from all actors engaged, and the main insights emerging from each engagement stream.

Table 5: *How integrated findings from all engagement streams will inform future activities*

Main Findings / Focus Area	Activity	What it should include / how to adapt	Results insights
Strengthening institutional capacity and aligning policymaker understanding of CM	Policymaker Workshops on Capacity Gaps and Public Perception	Present clear, consolidated insights on institutional gaps, governance needs and public attitudes; use concrete examples from the survey, focus groups and interviews; provide structured discussion prompts for policymakers on coordination, communication and local responsibilities; highlight areas where public expectations diverge from institutional capacity	Findings from the survey, focus groups and interviews show gaps between public expectations for transparency, fairness, and clear responsibilities and the authorities' institutional capacity to address them. Policymakers need practical guidance on coordination, communication and integrating public concerns. Industry, civil society and academia stress the

Main Findings / Focus Area	Activity	What it should include / how to adapt	Results insights
			need for clearer mandates and governance structures, which will subsequently inform the workshop content and discussion priorities.
Develop mechanisms to track social, economic, and governance impacts of CM	Framework for a Just Transition CM Observatory	Integrate a balanced set of indicators that reflect priorities expressed across all actors: • socio-economic outcomes valued by industry and local authorities (jobs, local supply chain participation, tax contributions); • fairness and transparency elements highlighted by civil society and academia (cost distribution, decision-making clarity, safety assurance, monitoring responsibilities); • community-level dimensions raised by survey respondents and focus group participants (local benefits, understandable communication, trust in institutions, visibility of progress over time).	As the focus groups were conducted in a Just Transition region, the findings are directly relevant for shaping the Framework. They provide grounded, replicable insights on how communities in transition understand and evaluate CM, highlighting the need to track governance transparency, fairness in benefit allocation, and local socio-economic impacts. Interviews highlight that civil society and academia emphasise distributive justice, while industry links economic benefits to legitimacy. Authorities require clear guidance to support monitoring and coordination.

Main Findings / Focus Area	Activity	What it should include / how to adapt	Results insights
Integrate citizen and expert perspectives into long-term decarbonisation planning	Testing Policy Co-creation for CM Deployment	Conduct participatory foresight workshops; ensure diverse citizen representation; allow iterative feedback between citizens and experts, using clear structure, accessible explanations and guided discussion to support meaningful contributions from citizens	The approach of how to engage with citizens will be useful in this regard, showing that clear structure, accessible explanations and guided discussion help generate more informed inputs and can further support future policy co-creation for CM deployment.

6. Bibliography

[i] Energy Policy Group, 2025, EPG-Report_National-Study-on-Capacity-Gaps-in-Ccarbon-Management_Emphasising-Carbon-Capture-and-Storage-Deployment-in-Romania-1.pdf [Accessed November 2025]
[ii] TNS Opinion & Social, 2011, Microsoft Word - SpecialEurobarometer364DGENERccsEN final.doc [Accessed November 2025]
[iii] Oltra et al., 2012, The influence of information on individuals' reactions to CCS technologies: results from experimental online survey research - Oltra - 2012 - Greenhouse Gases: Science and Technology - Wiley Online Library [Accessed August 2025]
[iv] Oltra et al., *What influences public attitudes and acceptance of CCUS technologies on the national and regional level? Results from a survey study in France and Spain,* 2022, What influences public attitudes and acceptance of CCUS technologies on the national and regional level? Results from a survey study in France and Spain | Request PDF [Accessed January 2026]
[v] Sorin Anghel, 2017, https://linkinghub.elsevier.com/retrieve/pii/S1876610217320672 [Accessed January 2026]
[vi] Ziarul National, 2025, Pericol de moarte subită din stocarea CO_2 - Ziarul National [Accessed December 2025]
[vii] Realitatea.net, 2023, OMV vrea să îngroape România în noxe - REVOLTĂ uriașă la Boțești | Planul depozitului de dioxid de carbon - Documente-bombă [Accessed November 2025]
[viii] Ziare.com, 2024, Petrom va testa la Petrobrazi o instalație de captare și utilizare a carbonului. Care sunt mizele pentru reducerea emisiilor de carbon [Accessed November 2025]
[ix] Calea Europeana, 2025, CARBON HUB CPT01: România va construi primul sit de stocare onshore a CO_2 la scară largă din Europa cu finanțare europeană prin Fondul pentru Inovare - caleaeuropeana.ro [Accessed December 2025]
[x] Bzi.ro, 2024, România cheltuie 20 de miliarde de euro pentru emisii zero de CO_2 [Accessed December 2025]
[xi] Profit.ro, 2025, Toți "greii" extracției de țiței și gaze din România au contestat la Curtea de Justiție a UE obligația de a investi miliarde de euro în capacități de stocare de CO_2 | PROFIT.ro [Accessed January 2026]
[xii] Monitorul de Galați, 2025, https://www.monitoruldegalati.ro/tehnologie/weathering-ul-imbunatatit-solutia-promitatoare-pentru-captarea-dioxidului-de-carbon-atrage-investitii-majore.html [Accessed January 2026]
[xiii] Idem, 2025, https://www.monitoruldegalati.ro/mapamond/prima-injectare-de-CO_2-sub-marea-nordului-realizata-cu-succes-de-consortiul-northern-lights.html [Accessed January 2026]
[xiv] Azomureș, n.d., Homepage [Accessed February 2026]
[xv] INS, 2024, https://insse.ro/cms/sites/default/files/com_presa/com_pdf/popdom1iul2024e.pdf [Accessed August 2025]
[xvi] Ibidem

National Study on Public Perception on Carbon Management in Romania

Written as part of the GreenHorizon CEE Project:
Industrial Carbon Management for a Sustainable Future in CEE

Supported by:

Federal Ministry
for the Environment, Climate Action,
Nature Conservation and Nuclear Safety

European
Climate Initiative
EUKI

on the basis of a decision
by the German Bundestag

Implemented by:

EPG

CSD
CENTER FOR
THE STUDY OF
DEMOCRACY

BELLONA
EUROPA

WiseEuropa

Expert Partner
Fraunhofer